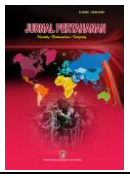

Jurnal Pertahanan: Media Informasi tentang Kajian dan Strategi Pertahanan yang Mengedepankan Identity, Nasionalism dan Integrity
Vol. 10 No. 1 (2024) pp.112-123
https://jurnal.idu.ac.id/index.php/defensejournal

Evaluation of Indonesia's Energy Policy Implementation in the Oil Sector to Strengthen National Defense

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Article Info

Article History:
Received: December 28, 2023
Revised: January 25, 2024
Accepted: April 24, 2024

Keywords:
Crude Oil,
Energy Policy,
Energy Security,
National Defense,
Policy Evaluation

DOI:
http://dx.doi.org/10.33172/jp.v10i1.19405

Abstract

Russia's invasion of Ukraine has resulted in an increase in world crude oil prices, causing an energy crisis in many countries. The crisis lifted food, goods, transportation, and other commodities' prices. Indonesia is one of the countries affected by the increase in world crude oil prices as the country is still dependent on imported oil. Energy policies that have been issued by the Indonesian government must be able to overcome the energy crisis that is currently occurring in Indonesia. The policies issued by the government have not been able to overcome the energy vulnerability that has occurred in Indonesia, so the government needs to rethink its energy policy to protect the country from the energy crisis. This study focuses on evaluating policies in the Indonesian petroleum sector. The objective of this research is to determine whether the policies implemented by the government align with current global environmental changes. The study was conducted using qualitative research methods through a literature review approach which was carried out by collecting data and information related to the policy of increasing world crude oil prices that occurred domestically and abroad. The research shows that the energy security policy in Indonesia needs to be strengthened and clarified, as this is closely related to the development of Indonesia's defense to become a strong and self-reliant nation.

INTRODUCTION

The impact of the Russia-Ukraine war has caused global panic regarding the availability of crude oil in the international market. Russia is the second-largest crude oil exporter in the world after Saudi Arabia. Russia's crude oil exports are worth 2.85 million

barrels per day, both through pipelines and sea routes (Dzulfaroh, 2022). This issue will undoubtedly lead to supply shortages and oil price uncertainties in the global market. The increase in crude oil prices will hinder global economic growth and result in inflation and commodity price hikes (Asmarini, 2022). The rise in crude oil prices not only affects European countries but also impacts all nations worldwide, including Indonesia.

The impact that has occurred in Indonesia is due to the oil processing owned by the National Oil Company, which only reaches 1,046.70 thousand Barrels. From this oil processing, it is not sufficient to meet the demand for national fuel energy, thus the government has to import fuel from abroad. Fuel imports in February 2022 reached 1.38 million tons, a 24% increase from 1.11 million tons in January 2022. In terms of monetary value, gasoline imports in February 2022 reached US$1.21 billion, a 39% increase from US$870.7 million in January 2022. On the other hand, the import of aviation fuel was recorded at 98 tons, not significantly different from the total of 97.6 tons in January 2022. In terms of monetary value, aviation fuel imports in February 2022 were US$155,600 compared to US$155,000 in January 2022. For diesel, imports in February 2022 decreased to 423.2 million tons compared to January 2022's 446.3 million tons. Despite the decrease in imports, it increased by 19% from US$267.8 million in January to US$319.7 million in 2022. The import of other petroleum products was 316.8 thousand tons in February 2022, an increase compared to 277.2 thousand tons in January 2022. Based on value, the import of other petroleum products increased from US$216.5 million in 2022 to US$265.5 million (Julita, 2022).

According to the Head of the Communication Bureau of the Ministry of Energy and Mineral Resources (ESDM), the increase in world crude oil prices will affect the rise of the state budget (Ministry of Energy and Mineral Resources, 2022). Where fuel subsidies are greatly influenced by changes in crude oil prices in Indonesia because the majority of subsidized fuel production costs are the costs of procuring crude oil. In addition to affecting the state budget, the increase in world crude oil prices will also result in an increase in production costs and transportation, which will have an impact on the rise of essential goods and other necessities. While people's incomes do not increase, causing a decrease in people's purchasing power. The increase in basic goods will also lead to high inflation, and with high inflation, there will be panic in society, and even worse, there will be an increase in unemployment and a rise in criminal activities. An energy crisis not only affects Indonesia's economy and social life but also affects the country's defense and security. The defense and security of a country heavily depend on the Main Weapon System it possesses (Tishler, 2004). It needs to rely on the use of fuel.

As for several previous studies related to this research, Santoso (2017) found that energy policy in Indonesia must be serious and consistent to change the type of energy consumption, Azhar & Satriawan (2018) explained that the implementation of new energy and renewable energy policies in the context of national energy security has proceeded as it should, Adellea (2022) showed that energy policy is necessary to urgently regulate the development of renewable energy. Lahope (2024) predicted that energy policy is pessimistic about achieving new and renewable energy targets. Based on those previous studies, this study tries to fill the gap and researched energy policy related to the defense field. This is the novelty of this study.

To address this issue, the Indonesian government has formulated energy policies with a focus on the oil sector. This is outlined in Government Regulation Number 79 of 2014 concerning national energy policy, which encompasses key policies such as energy availability for national needs, priority development of energy, utilization of national resources, and national energy reserves. These policies are further supported by energy

conservation, diversification of energy resources, and energy diversification; environmental and safety considerations; pricing, subsidies, and energy incentives; infrastructure, access for communities, and the energy industry; research, development, and application of energy technology; as well as institutional and financial arrangements (Government Regulation Number 79 Year 2014 Concerning National Energy Policy, 2014). However, in terms of implementation, Indonesia remains vulnerable to the influence of global oil prices, leading to increases in fuel prices. The resulting impacts can be significant both in terms of societal security and national defense.

Based on the issue of the increasingly uncertain world crude oil price hikes and the suboptimal implementation of government policies, this research focuses on evaluating policies in the Indonesian petroleum sector. The objective of this research is to determine whether the policies implemented by the government align with current global environmental changes. Appropriate policies can have a positive impact on addressing energy crisis threats and strengthening national defense both in non-military and military aspects.

METHODS

This study employs a qualitative research method with a literature review approach. The literature review is a survey of scholarly sources related to the topic of the research. This study using the literature review to identify gaps in knowledge and to develop a research question. The data will be analyzed to identify themes and patterns. After analyzing data, there's a need to write a research report that discusses the findings of the study and their implications. The meaning of literature review encompasses the author's reviews, summaries, and thoughts derived from various literature sources (articles, slides, books, internet information, visual data, graphs, and others) related to the topic under discussion (Creswell, 2010). This study uses collected data and information about policies implemented by other countries to address energy crises. A study of the perspectives of stakeholders on a proposed environmental policy might use qualitative methods to conduct interviews and focus groups.

This study uses the phenomenological method, which seeks to clarify or illuminate the significance of an idea or phenomenon based on knowledge of the experiences that occur in various individuals. Because this study takes place in nature, there are no limits to how one can interpret or make sense of the phenomenon being investigated (Creswell, 1998). Phenomenology is a way of thinking that emphasizes interpretations of the world and human subjective experience (Moleong, 2013). Research on phenomena places a strong emphasis on the subjective nature of human action. They seek to immerse themselves in the theoretical realm of the subjects they study to understand how and interpret events in their daily lives. According to phenomenologists, the way we interpret our experiences shapes the way we see reality, and all living things have different methods of doing this through relationships with other individuals.

Policy is a type of action carried out by the State Administration based on discretionary authority and is typically used to establish policy regulations for implementing laws. Fundamentally, there are three main types of public policies. There are three types of policies: policies derived from the community, policies provided to the community, and policies that maintain public order. Policies are formulated by a governmental institution, which includes both government officials and government agencies. These policies serve as guidelines, rules, or instructions for every business and governmental system, ensuring that the objectives of these policies can be achieved smoothly and collaboratively (Pramono, 2020).

Problem formulation is a crucial step in policy formulation. Policy-making starts with conceptualizing the problem. This initial stage determines the policy draft. Mishandling the problem can be detrimental. Public policies often end up being ineffective and not supportive of the people. The four steps in problem formulation policy are problem search, problem definition, problem specification, and problem sensing (Dunn, 1999).

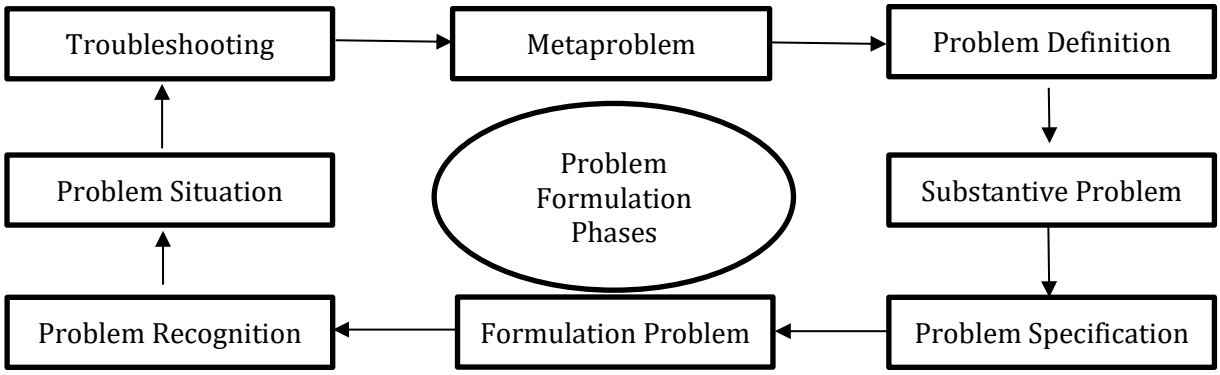

Figure 1. Policy Problem Formulation Phase (Dunn, 1999)

When policymakers make decisions, complications arise. Policy analysts must inform the public of personal issues. Personal issues include running out of fuel in motor vehicles. Public issues are the widespread scarcity of oil or gas. This level categorizes fundamental and universal issues based on meta-problems. Subsequently, policy analysts can formulate formal problems. Through problem formulation, a substantive issue can become formal. Problem sensing follows problem specification. This stage involves an approach to policymakers. Substantive issues may not align with formal representation. Additionally, Policy formulation is outlined in the following Figure 1 (Nugroho, 2003):

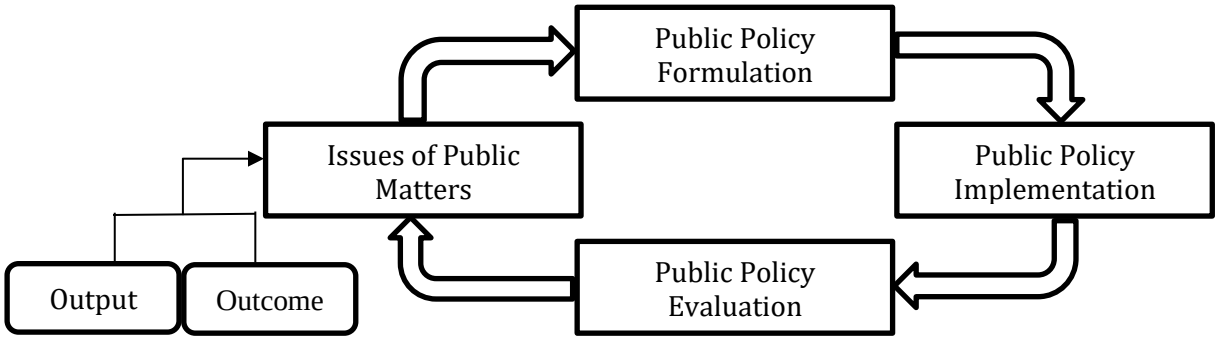

Figure 2. The Schematic Cycle of Public Policy (Nugroho, 2003)

When a problem or public concern emerges, it is called a crisis. This becomes an issue if it is strategic—meaning, it fundamentally affects many people, is long-term in nature, and cannot be resolved by just one individual. It is a political issue that needs to be addressed. The government is then compelled to formulate public policies to tackle the problem. All countries and their populations, as well as the leaders of the country, will be bound by this policy framework. In policy formulation, it is important to analyze policies accurately. A good policy analysis is a prescriptive policy analysis, as its role is to provide policy recommendations that should be taken by the executive. For example,

policymakers seek to maximize a utility function dependent on the values of target variables such as the energy policy function. If a structural change occurs, policy-makers find that they can achieve higher scores on their utility function, then it can be assumed that the structural change has improved the effectiveness of the policy, and vice versa (Brainard, 1967).

The capacity to avoid adverse impacts from energy disruptions caused by natural events, accidents, or deliberate actions affecting energy supply and distribution systems. Energy security involves ensuring that fuel, power systems, and devices for end users meet five key criteria: surety, survivability, supply, sufficiency, and sustainability. Surety ensures access to energy and fuel sources, while survivability ensures its resilience against damage. Supply refers to having identified and available energy sources, whether traditional or alternative. Sufficiency means having enough power and fuel from diverse sources. Sustainability involves maintaining practices by limiting demand, minimizing waste, and maximizing the use of alternative and renewable energy sources (Kleber, 2009). When energy security is seen as a crucial part of national security, formulating appropriate strategies becomes an issue to ensure the continued growth of the economy and armed forces. Energy is also involved in three additional ways relevant to military activities and international conflicts: Military operations require the mobilization of energy resources and one of the primary consequences of conflicts is the disruption of energy services. War is responsible for the most concentrated and damaging energy release (Sovacool, 2011).

The definition of energy security emphasizes the need to examine the extraterritorial consequences of energy and energy services while acknowledging the challenges in implementing and measuring national energy security policies. This definition encompasses the evolving understanding of environmental security, including the environmental effects on human and military security and the effects of security institutions on the environment and international environmental cooperation. Nonetheless, energy security impacts everything from military troop deployment to offshore oil drilling, from coal combustion and carbon dioxide emissions to the development of alternative energy sources, from political unrest to piracy on the open sea, and from waste disposal to uranium mining. Henry Kissinger's Theory of Control Oil Control Country stated, "Control oil and you control nations; control food and you control people" (Vucinovic, 2014).

Fragile countries faced challenges in responding to the crisis due to both their inherent fragility and the impact of preceding food and fuel crises. Fragile nations that relied on imports for food and oil experienced the tangible consequences, exacerbating their already strained circumstances. This situation further hindered their capacity to address the crisis, given the fragility of their governmental institutions (Allen & Giovanetti, 2011). If in the future the government fails to resolve the 3F crisis, which involves fuel, food, and financial crises, typically occurring in countries with large populations like Indonesia, then this presents another threat that needs to be anticipated. The impacts of the 3F crisis are already starting to be felt, as Indonesia is currently a net importer of oil, rice, and other goods, as well as experiencing a financial deficit. For several decades, Indonesia has had significant dependence on foreign currency, particularly debt.

The correlation between theory and this research lies in the evaluation conducted regarding the existing issue, particularly the increase in crude oil prices. The researcher will assess the policies implemented by the Indonesian government by comparing them with the measures taken by other countries to address the surge in crude oil prices.

RESULT AND DISCUSSION

The energy crisis is a shortage or disruption of energy supply that affects the economy. The energy crisis is caused by limited fossil fuel supply and economic strengthening post-pandemic. The main factors of energy issues and problems leading to an energy crisis can be categorized into four, namely supply-demand imbalance, natural disasters, international relations & geopolitics, and sabotage as depicted in Figure 3 (Rahayu, Supriyadi, & Yusgiantoro, 2018).

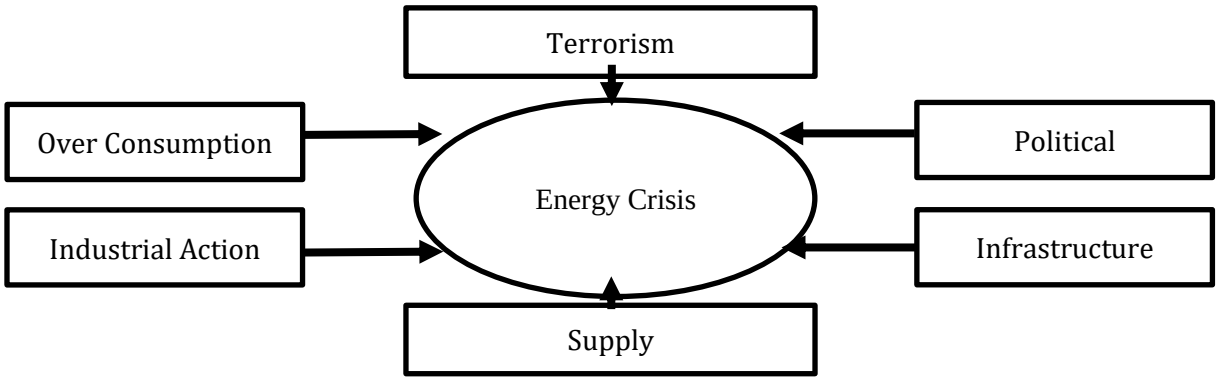

Figure 3. Factors Influencing the Energy Crisis (Processed by the Author, 2023)

Returning to the conflict between Russia and Ukraine, one of the impacts of this conflict is the crude oil crisis, which has led to a surge in global oil prices. Russia has imposed energy export restrictions on other countries, particularly Europe, resulting in disruptions to energy supplies that have led to increased living costs and economic slowdowns for affected countries (Nursyahbani & Marzaman, 2023). It is not unlikely that Indonesia is also affected by this conflict, and the government needs to formulate effective policies to prevent an energy crisis from occurring in Indonesia.

Besides the ongoing conflict between Russia and Ukraine, the terrorist attacks represent another potential trigger for an energy crisis. Utilizing violence against infrastructures and facilities is a notable strategy adopted by terrorist organizations. The distribution of these attacks across energy infrastructure locations is scrutinized to discern patterns among states. Globally, states can be categorized based on their involvement in terrorism, whether supportive, operational, or perpetrating (Ganor, 2002). Consequently, the selection of targets, or infrastructure, becomes a pivotal factor influencing the impact of such attacks. Economic consequences resulting from these attacks feature prominently in target selection considerations, as evidenced by various cases leading to energy insecurity. Hence, three prominent instances highlight the nexus between energy insecurity and terrorist attacks, including the Kirkuk-Yumurtalik Oil Pipeline incident (Iraq-Turkey Pipeline), the Angolan civil war, and assaults on Ecopetrol in Colombia (Biresselioglu & Yumurtaci, 2015).

In the historical development of regulations aimed at addressing energy crises, one can observe regulations established by the United States. During President Jimmy Carter's formulation of the 1980 Carter Doctrine in response to the Soviet Union's invasion of Afghanistan and the Iranian Revolution, both of which were seen as endangering United States interests in the Persian Gulf or the Middle East. This doctrine emerged due to the energy crisis facing the United States, threatened by oil supply disruptions. In short, the doctrine projects American military and political power to establish a "free oil movement in the Middle East."

Building upon the aforementioned events, Indonesia currently only has Presidential Regulation Number 41 of 2016 about Procedure for Determination and Mitigation of Energy Crisis and/or Energy Emergency in place as a governmental regulation regarding energy crises. The determination and mitigation of energy crises and/or energy emergencies have been in progress, although not yet optimal. This can be observed by the establishment of legal provisions resulting from Presidential Regulation 41/2016 for more technical control, as well as the lack of sufficient socialization, resulting in not all stakeholders fully understanding Presidential Regulation 41/2016. Furthermore, there is still no accurate simulation space that can depict the energy crisis or emergency environment, highlighting the need for technical guidance according to Presidential Regulation 41/2016. According to Rahayu, Supriyadi, & Yusgiantoro (2018), energy crises and emergency tactics encompass both operational and national policies. Businesses and local governments implement operational policies, including stock transfers and advice/infrastructure enhancement. The National Energy Council recommends energy imports, international cooperation, and other activities. However, due to price fluctuations, it is challenging to engage in energy imports and similar measures.

Then, many actions to address energy emergency crises in Article 13 paragraph (2) include the release of energy buffer reserves, but currently, there is no clarity regarding the amount of energy buffer reserves in Indonesia to face energy emergency crises should they occur. Energy Buffer Reserves are an essential component of energy security. The fact that Energy Buffer Reserves are not fully visible raises the possibility that Indonesia could be in danger if an energy crisis occurs at any time. Currently, the government only has regulations concerning the national energy policy related to Energy Buffer Reverses. However, there is no further regulation in the form of a Presidential Regulation regarding the determination of Energy Buffer Reserves.

In the current situation, it is known that Indonesia's operational reserves can last for approximately 23 days. However, the absence of Energy Buffer Reserves could pose a threat if an unforeseen energy crisis occurs in this highly volatile, uncertain, complex, and ambiguous period. For instance, major countries like the United States and China have energy reserves known as Strategic Petroleum Reserve (Persia, 2018). In addition to preparing energy buffer reserves, it is also necessary to initiate a new and renewable energy transition. Well-designed policies and strategies are required for this transition. Roles encompassing the government, society, academia, corporations, and industries are crucial in supporting these policies. Similarly, according to Indonesia's 2015 Defense White Paper by the Ministry of Defense of the Republic of Indonesia, energy security emerges as one of the issues within the strategic environmental development, where the threat of energy crises serves as a significant trigger for conflicts and clashes of interests, necessitating countries worldwide, particularly Indonesia, to transition towards establishing alternative renewable energy sources. In this context, a national energy security model needs to be formulated to mitigate threats that could affect the country's defense from an energy perspective and to achieve Indonesia's national interest objectives (Ministry of Defense of the Republic of Indonesia, 2015).

As a case in point, the energy management practices of other countries could be a lesson learned for Indonesia. Maintaining the stability of Indonesia's national defense and energy supply is crucial. Germany and Japan could have the best practices in resource management. Germany's lack of energy resources has prompted the country to seek alternative solutions by developing renewable energy technologies to secure its energy reserves and promote sustainable development in enhancing its national defense. After the 1973 oil crisis, Germany shifted its energy security policy by investing in solar energy

and wind turbines. Solar energy and turbines became the largest in Europe by the 1980s. In 2000, Germany began developing biofuels to minimize fossil fuel usage by blending farmer regulations and markets, as well as creating industry-scientist synergies. Non-governmental groups and political parties must promote the development of renewable energy. Following the oil crisis, Germany emphasized coal and nuclear energy. Since the mid-1970s, German society has urged the government to prioritize energy efficiency and renewable. In 1982, the budget for renewable energy increased from 20 to 300 billion.

Germany developed solar and wind turbines which industries and academic institutions funded 40 small and medium turbine research projects. The government financed 18 universities, 39 companies, and 12 research organizations. At least 14 windmill manufacturers received German government subsidies. In 1983-1991, Germany acquired 124 turbines. This initiative was crucial for the smallest national market in the 1980s, which installed 20 MW in 1989. Euro Solar is an organization working for renewable energy within an autonomous political framework, even though some of its members are German parliamentarians from various parties. Various groups and parliament pushed the government to pursue renewable energy measures. Germany aimed to shift from gasoline to biofuel as part of the EU directive to increase renewable energy consumption. Germany exempted biofuel from gasoline tax in 2002. The government had to report on this exemption until the end of 2009. This presented the biofuel market and annual changes in prices for biomass, crude oil, and other fuels so they could be adjusted. In addition to tax exemption, the German government intervened in the market through the Federal Monopoly Administration for Spirits. It bought and sold agricultural ethanol and influenced the bioethanol market.

The oil crisis of 1973 disrupted Japan's energy supply in the 1970s. Due to its limited energy supply, Japan had few competitors. Its main oil supply, the Middle East, was hindered during the Cold War. Political instability after the Iraq War, which still poses issues, and terrorism added to it. Diversification and fundamentalism were used to enhance Japan's energy security. Japan reduced its dependence on imported oil by diversifying into natural gas, coal, and nuclear power. Japan sought new energy sources for geographic diversification. Japan's new energy security priorities include Russia, Central Asia, and Africa. Japan also expanded its energy needs by developing solar and wind power. High production costs and meteorological conditions limited progress (Kuntjoro, Khotimah, & Agustiani, 2021).

Sustainable and risk-free access to the cheapest forms of energy has become the standard for national energy security for several decades now. The evaluation of national energy security incorporated into defense capability assessments requires continuous and risk-free access to the most cost-effective energy. Traditionally, countries with abundant domestic energy sources in any form have excellent energy security. High-level perspectives on national energy security fail to distinguish between sustainable and unsustainable energy governance approaches (Sovacool, 2011).

This is in line with several practical projects aimed at enhancing Indonesia's energy security by accelerating the use of Renewable Energy Sources (RES), including: As a potential use of local resources, the government can designate various RES companies to generate, use, or obtain RES when each region has a general energy plan. Sustainable renewable energy infrastructure for settlements that won't generate electricity. Financing Renewable energy development initiatives through national infrastructure institutions. Developing simple renewable-based energy systems for locations inaccessible by the grid. Strengthening regulations and legislation, including synchronization and changes to rules that limit Renewable energy investment and production. Intensification, infrastructure

expansion, diversification, and energy conservation are used to enhance RES and more (Kuntjoro, Khotimah, & Agustiani, 2021).

The impact of increasing energy availability through expanding the non-fossil energy mix and adopting energy intensification programs necessitates the development of energy infrastructure and access to facilitate energy diversification through RES. Australia and Canada can meet domestic electricity needs with domestic resources.

Australia's energy self-sufficiency in power generation is achieved through dwindling limited coal reserves, while Canada achieves it through sustainable hydropower extraction. Which of these two countries has long-term national energy security in a non-rocket science approach? Traditionalists argue that optimizing short-term economics shows great security, while others suggest that long-term resource sustainability must be considered (Sovacool, 2011).

Regulations concerning energy security in Indonesia need to be strengthened and clarified, as this is closely related to the development of Indonesia's defense to become a strong and self-reliant nation. Currently, Indonesia has oil reserves totaling 2,250 million barrels according to the World Population Review (2024). However, in terms of production, Indonesia currently only produces 31.41 million tons, with a total consumption of 69.65 million tons, indicating a significant disparity between total production and total consumption (British Petroleum, 2022). This is also reflected in the substantial consumption of fossil fuels in Indonesia in 2022, with the largest allocation for the procurement of fuel by the Indonesian National Armed Forces (TNI) across its army, navy, and air force branches amounting to Rp7.6 trillion allocated to Pertamina (Ali, 2023).

With oil reserves and total production not meeting total consumption, this could have a significant impact on national defense. This can be observed in public demonstrations occurring when oil prices rise and the decreased productivity of society. On the other hand, the negative effects of energy scarcity in Indonesia can affect military performance in defending the country, as defense equipment reliant on oil fuel may become inoperable, thereby reducing the nation's defense capability. With appropriate regulations and effective management in managing energy reserves and oil production, it can support national defense both in non-military and military aspects.

CONCLUSIONS, RECOMMENDATIONS, AND LIMITATIONS

The National Energy Council, the Ministry of Energy and Mineral Resources, and the Downstream Oil and Gas Regulatory Agency are involved in the process of detecting and monitoring energy supply and demand. energy sources such as petroleum fuels, electricity, liquefied petroleum gas, and natural gas are the targets of this mitigation effort. Operational energy crises occur when there is a shortage of operational reserves or when the minimum needs of the community for these four fuel types cannot be met. The President established the National Energy Council to address the current energy issues. Designing national energy policies, formulating energy strategies, and monitoring policy implementation in the energy sector are some other tasks of this Council. However, there is currently no effective plan or initiative in place to address the energy crisis that poses a threat in this uncertain time. Additionally, to tackle the energy crisis, significant and sustainable transitions are necessary to secure energy supply for national security.

Recommendations for policies that can be taken include, maintaining a minimum energy reserve of 6 months for national needs during peacetime and a minimum of 1 year for military needs during wartime. By maintaining a 6-month energy reserve for national needs during peacetime, the Indonesian government can address the threat of oil scarcity.

Additionally, providing a 1-year energy reserve for wartime needs becomes essential in facing the current geopolitical tensions. Therefore, Indonesia can confront various forms of wartime threats through the availability of energy reserves.

The scope of defense and security is one of the elements in the regulation of New and Renewable Energy implementation. Renewable energy can also assist Indonesia in enhancing its energy reserves through the establishment of regulations related to the construction and development of renewable energy. It is crucial to incorporate defense and security installations in the Energy Regulations, specifying business entities and licensing. The best practices carried out by the United States.

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