
WAY OF THE SAMURAI: UNDERSTANDING JAPAN'S ENERGY SECURITY STRATEGY POST-FUKUSHIMA DISASTER

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Abstract : The Fukushima Disaster in 2011 posed a challenge to Japan's energy security. Before the disaster, Japan was very dependent on nuclear power plants to fulfill its energy mix, mainly the Fukushima Daiichi Nuclear Power Plant. Energy security is prominently Japan's priority agenda because they do not possess natural resource endowments. Therefore, Japan must pay attention to provide energy availability access, emphasizing accessibility elements to maintain a secure position at global economic levels. Departing from this background, this paper analyzes Japan's energy security strategy after the Fukushima Disaster. The article questions the post-Fukushima Disaster, How does Japan maintained their energy security under the dynamics of current geopolitics of energy after Fukushima Disaster?. The finding obtained from the analysis is that Japan focuses on import policy to fulfill its national energy security. Meanwhile, the current international political situation has prosecuted Japan to China's foreign policy competitiveness and its impact on the geopolitical map. Moreover, Japan's energy security strategy is based on energy policy amid geopolitical energy competition to pursue energy security through two levels, namely the domestic and international sectors.

Keywords: Japan, Strategy, Energy Security, Geopolitics of Energy, Fukushima Disaster

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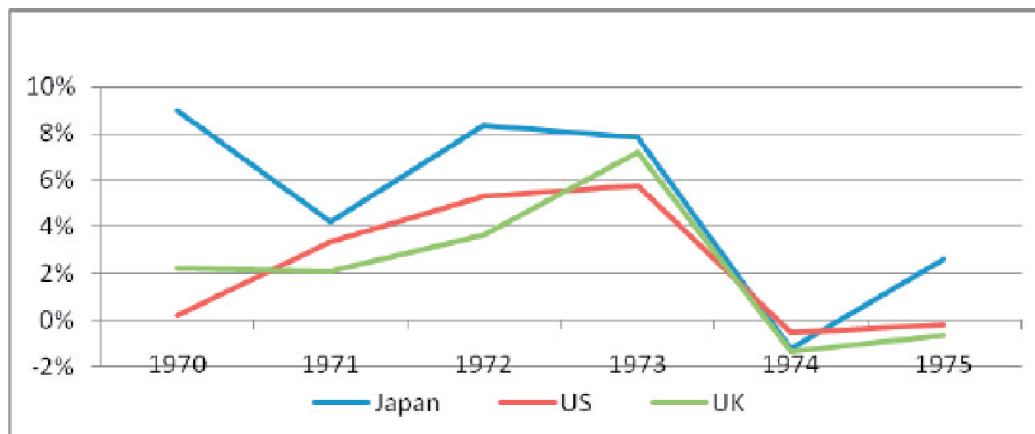
INTRODUCTION

Japan is not a country that is blessed with abundant energy resources, even though it consists of four big islands, making it an archipelago country. It has little to no fossil energy reserve potential to support its development as a country. This condition forces Japan to thrive using innovation and advanced technological engineering to support its effort to develop new and renewable energy. Before 2011, Japan was the third biggest nuclear-powered power plant behind the United States and France - 13% of its electricity comes from nuclear power. However, in 2019 it is decreased to 3% (US Energy Information Administration (EIA), 2020). The explosion of the Fukushima nuclear power plants is the main reason for the energy share decrease because the Japanese government has to reassess its nuclear power plant infrastructure.

Historically, because it lacked energy resources, especially in oil and natural gas, Japan has a high demand for energy imports and relied heavily on the Middle East countries (Evans, 2006). Japan's significant reliance on imports of energy has been going on for

decades. It can be traced back to 1950 when the Matsunaga Plan commenced as Japan's first energy security strategic policy after World War II. Its reliance made Japan experience a significant gross domestic product (GDP) reduction in the 1970s because of the oil embargo from the Organization of the Petroleum Exporting Countries (OPEC), which peaked in 1973. The petro-politics dynamics consequently made oil prices spiked up to 200%, especially the embargo by Kuwait during the Saudi Arabia-Israel conflict as the Gulf States own most oil reserves. The expensive oil price delivers severe damage to Japan's economic fundamentals because of its heavy reliance on oil imports. The damage consequently increases many sectors' service fees, creates massive unemployment, and triggers political instability (Mihut & Daniel, 2012). Ultimately, it also hurt the Japanese economy from 1970 to 1975 (see Graph.1).

Graph.1
Japan's Economic Growth 1970-1975



Sumber: Mihut, M. I., & Daniel, D. L. (2012). First oil shock impact on the Japanese economy. *Procedia Economics and Finance*, 3, 1042-1048.

Cognizant of the impact of oil price on its economy, in 1979, Japan constituted the Law Concerning the Rational Use of Energy as its cornerstone in achieving energy security. This law serves as the umbrella of all Japanese efforts to meet its energy needs and rely less on fossil fuel. This strategy made Japan distribute its energy mix by utilizing its advanced energy to develop other energy resources, focusing on nuclear power. Kansai Electric Power Company and Japan Atomic Power Company were appointed to build nuclear reactors to achieve Japan's energy needs. By 1993, Japan had developed 46 nuclear reactors, and in 2010 the number was increased to 54 reactors, fulfilling 30% of domestic energy needs. The Strategic Energy plan plays a vital role in Japan's success in developing nuclear energy. The Strategic Energy Plan 2010 explains that Japan will keep relying on nuclear energy and increase the capacity to 85% of total electricity production by 2020 (Camilia, 2018).

However, the Japanese strategy in overcoming its dependency on fossil energy did not go according to the Strategic Energy Plan 2010. The Fukushima Disaster in 2011 scatters the critical part of Japan's energy supply. 9.0 Richter scale earthquake and a tsunami destroy Fukushima. This disaster also resulted in the leaking of three Fukushima nuclear reactors and caused long-term damage to the surrounding environment due to the radiation. The miserable condition led the International Atomic Energy Agency (IAEA) to withdraw the

active status of all nuclear reactors in Japan. This withdrawal - or decommissioning - significantly affects the future of Japan's energy security. Therefore, Japan needs to re-actualize its energy policy to find the best way to meet its energy needs after the Fukushima Disaster. In 2014, the Japanese government created a new strategic policy derived from the fourth strategic energy plan. That law directs Japan to reposition its energy mix without nuclear power.

On this point, Japan's strategy in facing energy security challenges after Fukushima becomes very interesting to be analyzed. The reposition of the energy mix depends on the shift from nuclear energy to fossil energy. However, Japan does not have any fossil energy reserves; therefore, Japan needs to look into other countries to fulfill its fossil energy needs. Furthermore, to meet its energy needs, Japan needs to be more adaptive in the development of geopolitics of energy. The energy dynamics in Asia have a competitive nature as China controls most of the potential energy in that region. Through the Belt and Road Initiative (BRI), China tries to seize control in terms of geopolitics from Asia to Europe. Thus, the political situation regarding international energy demands the states to issue dynamic policies to respond to the political map.

The main question of this paper is how the Japanese strategy to achieve energy security in the contemporary geopolitical dynamics after the Fukushima Disaster is? To answer the question, this writing uses energy security theory to argue that Japan bases its energy security strategy on domestic and international levels.

On the domestic side, this paper explains that Japan is trying to consolidate its energy mix fulfillment after the Fukushima Disaster using a strategic energy plan that will be explained more later in this paper. This writing finds 3 (three) tactics that Japan articulates to answer the geopolitics of energy challenges on the international scope. First, realigning with China as the main competitor in Asia. Second, ensure the security of energy supply through diplomacy and strengthen the relations with Central Asian region countries, Russia, and Saudi Arabia. Third, strengthening the maritime security in chokepoints of fossil energy imports.

METHOD

Starting from the context above, this paper focuses on understanding Japan's strategy in achieving energy security through the contemporary geopolitical energy dynamics. This research concretely presents an analysis of the dynamics and polemics that can affect Japan's energy security mission in the scope of geopolitical energy. The research approach is a qualitative approach that intends to understand what phenomena are experienced by research subjects holistically, and by means of descriptions in the form of words and language, in a special natural context and by utilizing various sciences. (Moloeng, 2007:6).

LITERATURE REVIEW

This writing concentrates on a framework thinking that was built upon energy security concepts and energy geopolitics in analyzing Japan's energy security strategy. Definitively, according to IEA, energy security is defined as *the uninterrupted availability*

*of energy sources at an affordable price.*¹ Based on this definition, energy security is placed on the logic of all dynamics in energy are affected by states interaction in the energy sector. In more detail, IEA provides the following definition,

“uninterrupted availability of energy sources at an affordable price. by many aspects: long-term energy security mainly deals with timely investments to supply energy in line with economic developments and environmental needs”.

However, according to METI definition (2015) Japan embodies the energy security as:

“to secure adequate energy at reasonable prices necessary for the people’s lives, and economic and industrial activities of the country through principle of energy security, safety, environment and economic efficiency”.

Based on the elaboration of the definition above, security energy is an action to maintain and build the availability of energy reserves for a certain amount of time. The energy security strategy can support national development and help achieve energy availability for the future generation. In addition, understanding the dynamics of energy security cannot be separated from the political-economy element that is embedded in energy as a strategic commodity. Consequently, energy security depends on how states do their export and import activities in the energy sector. In other words, energy security demands safe access to energy supply from the global market.

In the development, energy security is increasingly institutionalized along with the growth in the human population. Thus, the world is faced with the reality that international politics and economic situations contribute to energy security, which holds a crucial role in a state’s national development (Arfani, 2006). State mistakes in maintaining energy security have a logical consequence of political-economic instability as it fails to secure energy supply that directly affects the country’s development. The energy availability problem significantly impacts the livelihood of a state and its people, as all activities, starting from people’s mobility to the manufacturing process, need energy. Therefore, in maintaining energy security, the state must effectively manage the end-to-end energy cycle both domestically and externally. Because these two aspects can synergistically provide certainty of energy availability for a country.

According to Aleh Cherp (2014), there are four significant elements to understand a country’s energy security. Energy security is linked closely to the availability factor (availability), the cost to access the energy resources (affordability), access to exploit the energy resources (accessibility), and how these energy resources are welcomed by the surrounding environment (acceptability). This paper will only focus on the accessibility factor in analyzing the Japanese energy security strategy post-Fukushima Disaster. The rationale in choosing the accessibility element stems from the restriction of Japan from using its nuclear energy after the Fukushima Disaster. This condition creates an accessibility gap as Japan loses a significant amount of its energy resources. So Japan needs to find a replacement for nuclear power. Therefore, Japan focuses on importing energy through the maritime route to gain more access to energy resources.

Besides securing energy access, Japan, in achieving energy security after the Fukushima Disaster, also deals with contemporary geopolitical energy dynamics. From major

¹ See energy security definition by IEA that is accessible online through: <http://www.iea.org/topics/energysecurity/subtopics/whatisenergysecurity/>.

countries like the US or China to middle-power and small-power like Japan, every state has different energy needs. Succinctly, Ian Skeet (1996) explains energy geopolitics as “the effect that location of resources has on the politics of states.” One decade later, Jean-Marie Chevalier (2009) defines energy geopolitics as the balance of power between states and corporations in accessing energy resources and managing resources related to energy issues. As exporting countries, energy geopolitics is associated with seizing oil and gas money and its allocation in the decision-making process. As for the importing countries, energy geopolitics is regarded as one of the vital national interests, so it has a notable impact on its stability. (Suhartini et al., 2018).

Based on the definitions above, energy geopolitics is a state's energy policy based on considerations of geographical features. As every country has its own energy strategy, energy geopolitics triggers contestation within international politics. This difference is gained from the state's different understanding and needs regarding energy sectors, making the means to reach energy security differ based on the state's interpretation. Energy geopolitics can help states support and achieve energy security by utilizing the country's geographical features and surroundings. The geographic utilization includes energy resources management, control on areas with the potential of multi-sectoral cooperation, and the fulfillment of domestic energy needs.

RESULT AND DISCUSSION

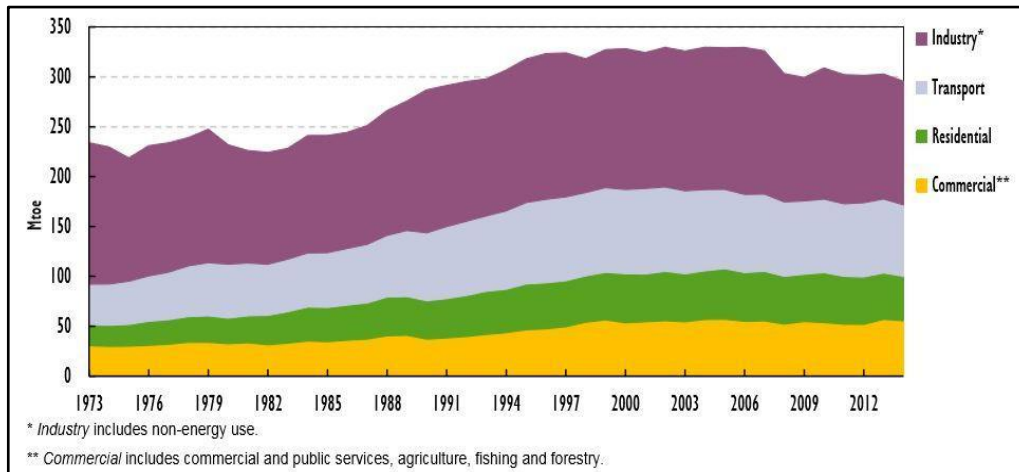
Japan's Energy Policy Post-Fukushima Disaster

Geographically, Japan is located in the ring of fire which is prone to natural disasters. The disasters that challenge Japan range from earthquakes, tornadoes, to the tsunami that can destroy buildings and take many lives. However, this unideal condition actually spurred Japan to turn its lack of natural resources into achievements with its advanced technological engineering. This determination has led Japan to be Asian Tiger by dominating various sectors, including the economy and mastery in energy. Japan currently is the fifth biggest energy consumer in the world. To meet those needs, Japan imports fossil fuel from several countries and generates electricity using nuclear power (Vivoda, 2012).

Before the Fukushima Disaster, nuclear energy contributed a notable impact in ensuring Japan's energy needs. Nuclear power is one of the biggest and most important energy sources of Japan at that time. Data shows that in 2010, Japan increased its electrification by 29.30% by lowering its dependence significantly on fossil fuels (METI, 2017). This achievement is met through a fundamental transformation in Japan's energy mix by being the third biggest country globally in terms of nuclear reactor utilization.

Sadly, Japan's comfort needs to come to an end after the Fukushima Disaster. After the tsunami in Tohoku, Iwate Prefecture, Miyagi, and Fukushima, the leaking of the Fukushima nuclear reactors resulted in the decommissioning of all Japan's nuclear energy. The 9.0 Richter scale earthquake and tsunami severely damaged six Fukushima Daiichi and Fukushima Daini nuclear reactors. Japan's success in increasing 29.30% of electrification through nuclear power suddenly scattered, and Tokyo needs to find a new alternative to cover up the void left by nuclear energy.

Graph.2
Japan's Energy Consumption (TFC)



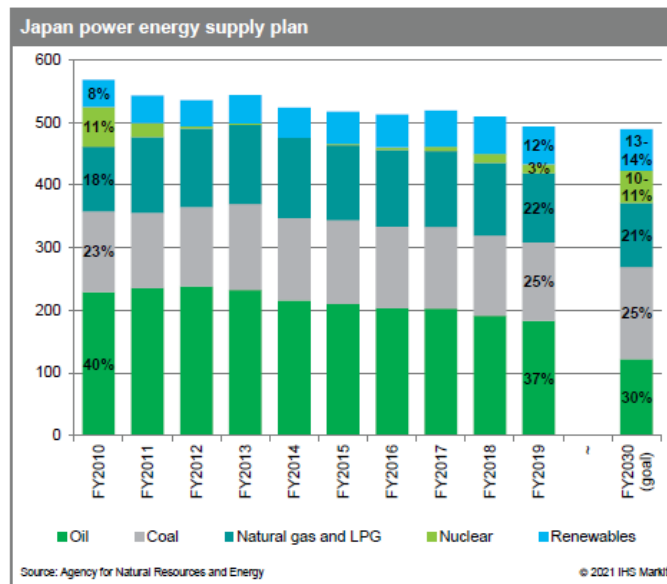
Source: IEA, 2016

The restriction on the use of nuclear power resulted in the loss of 30% of Japan's domestic energy supply. Responding to this challenge, Japan relied on expensive fossil fuel, especially liquified natural gas (LNG), to meet its energy needs. By the end of 2013, the shift from nuclear to fossil energy caused a drastic increase in Japan's energy import to 94% from 80% in 2010. This condition brings about a 16% rise in household electricity price and 25% for the industry. Additionally, fossil energy usage increased Japan's yearly CO₂ emission by a fourth (IEA, 2016). At this point, Japan is forced to secure energy security to fulfill domestic needs.

In the aftermath of the Fukushima disaster, the Japanese government has made comprehensive efforts to ensure and reach energy security amid a problematic situation. Japan's strategic moves have considered all available options to safeguard its energy security: strengthen access to foreign energy sources, diversify the energy mix, and increase energy consumption efficiency. To guarantee this, Japan's Ministry of Economy, Trade, and Industry (METI) constitutes the strategic energy plan as the base of Japan's energy policy until 2030. The fifth amendment of the strategic energy plan has revised and reconceptualize the Japanese understanding of the needs and challenges amidst the current energy geopolitics dynamics. The principles in the strategic energy plan target Japan's strategic effort to build a more stable energy supply and maintain economic, environmental, and safety efficiency through flexible energy diversification (IEA, 2017). In the domestic political context, the important actor in this transformation is Prime Minister Naoto Kan from the Democratic Party of Japan (DPJ). Radically, Naoto Kan proposed a revision regarding the strategic energy plan by initiating an energy policy oriented around zero nuclear reliance. This approach is the complete opposite of Japan's pro-nuclear strategic plan. However, Japan's political dynamics did not allow the idea to happen. The domination of the Liberal Democratic Party (LDP) in the Japanese parliament with the election of Shinzo Abe as the new prime minister signaling an end to the DPJ's zero nuclear reliance proposition (Igha, 2017). Shinzo Abe ends political instability by deciding that Japan will continue to use nuclear energy as the long-term means of fulfilling Japanese energy needs. Perdana Menteri Shinzo Abe mengakhiri

instabilitas politik Jepang serta memutuskan penggunaan energi nuklir untuk memenuhi kebutuhan energi dalam jangka panjang dengan berbagai alasan. This political decision became the pivotal point that underlines the 2014 revision of the strategic energy plan.

Graph.3
Japan Power Energy Supply Plan

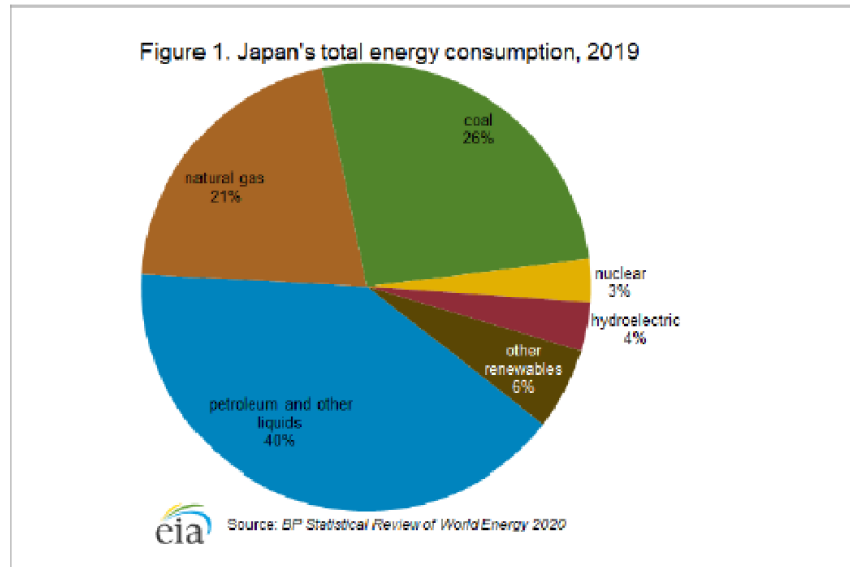


Source: (IHS Markit, 2021)

Japan's domestic strategy in achieving energy security focuses on the actualization of the energy mix management. On the 4th strategic energy plan, the Japanese government emphasized five main focuses in maintaining energy security until 2030. This five focus includes applying and developing new and renewable energy, reducing nuclear power usage, increasing the independent development of fossil energy, energy efficiency, and increasing domestic energy reserves. Referring to that document, fossil fuel still becomes an essential source in the Japanese energy mix as LNG and oil hold vital roles in Japan's economy.

Japan tries to shortly remove nuclear energy from its energy mix until 2016 (Picture.2). Japan's energy policy principle in the 4th strategic energy plan focuses on the 3E+S, which is creating a stable energy supply, economic efficiency, environmentally friendly, and safety (METI, 2014). Furthermore, Japan will continue to develop its nuclear energy by re-establishing and upgrading the safety standard to shift back to nuclear power and use it to fill 22% of Japan's energy mix in 2030. In other words, Japan's short-term plan is to use fossil energy until its nuclear technology and infrastructure are safe and advanced enough to support Japan's energy. The energy policy in the 4th Strategic Energy Plan will focus on securing energy resources comprehensively and strengthen the domestic energy supply. Hence the approach is focused more on scaling up the synergy within domestic energy policy.

Picture.4
Japan's Energy Mix 2019



Source: (US Energy Information Administration (EIA), 2020)

To close the short-term energy void left by nuclear power after the Fukushima Disaster, Japan relies heavily on fossil energy imports. In 2019, IEA data shows that Japan had distributed its energy mix due to nuclear power use restriction, which dropped the percentage to 3% (Picture 1). Japan's energy mix is dominated by petroleum with 40% of total consumption, followed by LNG, increasing its number in the Japanese energy consumption mix by 21%. This extensification of fossil energy is essential to cover up the loss from nuclear restriction. LNG is the elemental fuel for Japan's middle-class power plan. From 2011 to 2014, Japan's LNG import was increased from 70.6 metric tonnes per annum (mtpa) to 89.1 mtpa (Yoshida, 2018). Fossil fuel extensification had successfully avoided blackout after the Fukushima Disaster. However, the high price of LNG resulted in the rise of electricity bills for households and industry.

The usage of LNG as the primary fuel of most of Japan's power plants and the restriction of nuclear power pushes Japan to use the Strategy Energy Plan aggressively to get more access to fossil energy. METI put this strategy as one of the top priorities, which can be seen from the METI initiative to create an international forum on LNG in 2012, the LNG Producer-Consumer Conference. This conference serves as a dialogue platform for LNG to create a more competitive exchange between LNG exporting and importing countries, including Japan.

Japan took advantage of the global gas commodities market condition, which was experiencing an excess of supply. In 2015, the copious LNG created what is called a "buyer's market." Maximizing this condition, Japan bought significant portions of LNG through Japan's Energy for a New Era (JERA); the alliance of Tokyo Electric Power Company and Chubu Electric Company, Tokyo Gas; Kansai Electric Power Company; and Osaka Gas. These corporations were pushing for a more flexible system and competitive market for Japan's LNG. Nonetheless, year by year, the LNG price keeps on rising, along with oil price. Therefore, Japan focuses on coming back to nuclear energy in 2031 to minimize the dependence on LNG and fossil energy imports.

Japan's Strategy in the Contemporary Energy Geopolitics

According to Saul Bernard Cohen (2014:44), there are two structures in geopolitics, geostrategic realm and geopolitical regions. The structural dimension of the geopolitical regions is the lower level of geopolitics. The understanding of this structure is segregated based on the geographical division of the world's region, but all those regions are still connected politically, culturally, and militarily. Meanwhile, the geostrategic dimension is at the top level in geopolitical understanding. The understanding of the geostrategic element of a state is built upon the strategic function of the geographical feature to support the interest of major countries, the region, and the countries around it. The framework of thinking related to the geostrategic must capture the circulation pattern between humans, goods, and ideas to be maximized strategically. As stated by Cohen,

These realms are parts of the world large enough to possess characteristics and functions that are globally influencing and that serve the strategic needs of the major powers, states, and regions they comprise. Their frameworks are shaped by circulation patterns that link people, goods, and ideas and are held together by control of strategically located land and sea passageways (Cohen, 2014: 41).

To create geostrategy, a state must first understand the geopolitics structure of the subject. A state's geostrategy may depend on whether a country wants to pursue a continental approach depending on whether they want to use a continental approach that focuses more on land or a maritime approach that focuses more on the sea. This different geographical condition is crucial in determining what geostrategy will give the best result. Based on the understanding of regional geopolitics above, Japan is located in the Asia-Pacific Rim geopolitics area, a maritime zone that extends to Indonesia and Australia. Even though Japan is an archipelago country, it is close to the Asia mainland. Russia has a significant role in the Eurasia region due to the ownership of major gas pipelines to Europe. This makes Russia have geographical advantages in the Eurasian Continental Realm. Meanwhile, China, the leading Japanese competitor in Asia, lies in the East Asia Geographical realm that flanks the Indochina region.

To understand Japan's energy geostrategy, it is essential to know that Japan cannot rely on itself to close the energy gap left by its nuclear power. Therefore, Japan needs to look into other countries to increase its fossil energy supply to support its fundamental energy needs. This challenge requires Japan to secure the logistic route to redound its energy import activity. Hence, Japan needs to use a maritime geostrategy approach as the Japanese fossil energy progression depends on the security of the sea trading routes around the South Asia Geopolitics, the African Horn, and the Middle East Shatterbelt. Thus, Japan must maintain maritime security as most of the fossil energy export-import activities from the Middle East are using the sea route.

The analysis of this paper captures that the Japanese policy makers acknowledge the important elements that should be the focus of the Strategic Energy Plan. So, in formulating the energy security policy, Japan needs to concentrate on three significant variables to its energy security. First, China as a country that emerges as one of the major powers is currently very aggressive in spreading its influence all over the world. Second,

the security and sustainability of Japan's energy supply from the Gulf States. Third, the security of the Sea Lanes of Communication (SLOC) as the main route for Japanese energy import. From those variables, there are three strategies that Japan needs to do: Realign its relationship with China, strengthen the strategic cooperation for energy supply security, and involve in maintaining the maritime security of the energy imports routes.

Re-aligning the Relationship with China by using Strategic Projects

According to Watanabe (2018), the East Asia region is currently contested by many countries geopolitically. The phenomenon is called *Daitōa Chiseigaku* or Greater East Asia Geopolitics. This phenomenon was based on the competition between Japan and China over the East Asia region. Historically, the 1970-1980 period was the golden period for the energy relationship between the two countries with solid cooperation based on mutual interdependence. Moorthy (2012) stated that the cooperation position between Japan and China cannot be separated from China's abundant energy reserves, making Beijing have the leverage when interacting with Japan. "The Have" and "The Have Not" difference between China and Japan in the energy sector place Japan as the needy one in their relationship. Secondly, the relation between China and Japan was also built upon non-energy sectors: economic potential, political stability, and the strategic condition in the Cold War era. In that period, Japan and China had a strategic confrontation type of relation. However, after 1980, the relationship between the two countries changed into strategic embracement (Zhimin & Zhijun, 2004). The shift was affected by the urge from China to keep up with Japan economically.

Referring to Kusumawardhana (2016), the world economic globalization process pushes states to manage, access, and regulate every activity happening within their sovereignty border and the cross-border dimension. Currently, Japan and China are cooperating in non-traditional energy issues focusing on the environmental and social aspects. Some of the cooperation undertaken by Japan and China includes the prevention of ecological damage from excess energy exploration and overcoming air pollution from China's energy and industry activities (Moorthy, 2012). China realizes that the aggressive behavior in its foreign energy policies can lead to confrontation with Japan. Therefore, China seeks to offset this behavior by creating a positive image and avoiding energy conflict in areas disputed with Japan. In many ways, China has emulated Japan's success in tackling energy security issues. Moorthy (2012) further explains that Japan is also active in transferring its technology to help China solve its energy problems. Thus, both countries agree that walking together is far better than conforming in the pursuit of energy security.

2017 was a golden period for Japan-China cooperation. The majority of Japan's alliance with China, or about 48.7%, is in environmental conservation technology and infrastructure development. The culmination of the increasingly convincing cooperation between Japan and China was seen at the Da Nang Summit. This summit shows the commitment of both countries to intensify their relationship. In this summit, China is involving Japan in its BRI project. Previously, the Japanese government sent its delegation to the Belt and Road Forum for International Cooperation in 2017, led by the LDP's General Secretary, Toshihiro Nakai, and the METI vice minister, Yoshifumi Matsumura. As a result, Japan officially announced that it provides cooperation and financial support for the BRI's cross-border infrastructure development of USD110 billion. The funds are

channeled through JICA and the Asian Development Bank (ADB). This initiative was later called the Partnership for Quality Infrastructure (PQI), which aims to expand Japan's presence in developing countries. Those cooperation support Japan's mission in promoting regional stability and prosperity and ensuring energy security access (Shutaro, 2018).

Strengthening Strategic Cooperation for Energy Supply Security

Asia is the center of the world's energy reserves potential, mainly oil and natural gas. Japan's interest in Asia is primarily to secure energy import access from countries with abundant energy reserves. Countries linked closely with Japan's energy needs are spread in three main world axes, the Central Asian countries, Saudi Arabia in the Middle East, and Russia. Learning from the 1973 energy crisis, Japan was massively affected because 99.6% of its oil comes from the Middle East, and 40% was used for the Japanese industry (Oystein, 1983). Hence, it is imperative for Japan to strengthen its relation with oil-exporting countries, bilaterally or multilaterally, to secure access and availability.

In the Central Asia region, Japan uses various approaches to strengthen its relationship with the member countries. Japan uses the Official Development Assistance (ODA) to reinforce bilateral and multilateral relations. ODA is the primary tool in the Japanese foreign-policy-making process to help Japan achieve its national interest abroad. ODA's scope of work includes cooperation in human resources development, infrastructure, economy, technology transfer through grants, financial assistance, and bank loans. Japan has built the Eurasia Diplomacy since 1991, and to date, Japan received the transfer of liquified natural gas from several countries such as Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan via the three main routes, Trans-Siberian Railway (TSR), China Land Bridge (CLB) and Turkmenistan-Iran's Chabahar Port (Mangi, 2011)

Japan's policies towards Central Asia were supported by ODA funding contribution worth 2.57 million USD and increased to 16.81 million USD in 2016 (MOFA, 2018). In addition to fulfilling LNG supplies, Japan is also interested in the large natural reserves in Central Asia. According to Suhartini et al. (2018), Turkmenistan, Kazakhstan, and Uzbekistan are known as The Big Three since the three countries have 15% of the world's uranium reserves, 15% of the world's natural gas reserves, and 5,300 metric tonnes of gold. Thus these natural resources invite Japan to cooperate in the energy sector for its future use and interest.

Then, Japan also paid serious attention to its relationship with Russia regarding energy supply in mainland Asia (Heartland). Japan has made substantial progress in energy cooperation with Russia, even though the two countries have some international disputes. Two of them are Japan and Russia never signed a formal peace agreement after World War II, and the dispute over Hoppo Ryoōdo or the Kuril Island Dispute that is still ongoing. However, since the escalation of the conflict with Ukraine, Russian President Vladimir Putin stated that the direction of Russia's energy business has shifted towards the Asia-Pacific region through the Russian Far East (RFE) as the district is closer to China and Japan. The orientation shift in Russia's foreign energy policy through the Go East strategy is based on Russia's plan to target the East Asia market and secure the energy supplier role to the ever-growing region and its vast energy demand.

Based on the long-term strategy of Russia, it has been forecasted that Moscow will create an Asia Pacific market that consumes 22%-25% of Russian oil and 19%-20% of Russian

LNG. This forecast is welcomed by Japan. More concrete cooperation between Japan and Russia comes in May 2016, when the Japan Bank of International Cooperation (JBIC) provides loans to the Yamal LNG Project to support construction cost, procurement, and engineering. In 2017, the Yamal Project sent their LNG to Japan (Rozman, 2014).

Japan continues to pursue solid cooperation with Russia. yang konkrit antara Putin dan Shinzo Abe. This can be seen in the multilateral forum of Group of Twenty (G20). Shinzo Abe and Vladimir Putin always hold bilateral meetings to discuss sustainable development and energy cooperation. In a short time, the discussion begets the first energy infrastructure project in the Sakhalin Island called the Sakhalin-1 and the Sakhalin-2. Through this cooperation, through a private company Sakhalin Oil and Gas Development Company (SODECO), Japan successfully secured LNG supply from Russia. The Sakhalin project is the fourth biggest LNG supplier to Japan and fulfills 18% of the Japanese gas needs. The project also contributed to the increase of LNG in Japan's energy mix to 20% (Lindgren, 2018).

Meanwhile, in the Middle-East region, Japan uses the "resource diplomacy" strategy to strengthen its relationship with the Middle-Eastern countries. This strategy is motivated by two intertwined factors: the Japanese reliance on Middle-East oil and Japan-US relationship in the security sector. Since 2000, Japan uses resource diplomacy, which includes a diplomatic approach, economic activities, and involving private companies with oil and gas producers. Japan's METI and MOFA collaborated and acted as the corridor of Japanese strategic partnership with the Middle East region. Japan's multilateral approach to the Middle East resolved two issues at once: oil export facilities procurement and LNG fulfillment. The bilateral resource diplomacy with Saudi Arabia and the United Arab Emirates as Japan's two biggest energy suppliers fundamentally extends the relationship more than the energy business.

To strengthen its relations with Saudi Arabia, Japan has agreed to 20 Memorandum of Understanding (MoU) in economic projects. This agreement boosted Japan's oil import quota to 37.4% in 2016. The following year, the first strategic partnership for Japan in the Middle East was initiated by Saudi Arabia with the Saudi-Japan Vision 2030, which has three main strategic pillars. First, building sustainable industrial development. Second, strengthening the economy with innovation and technology. Third, revitalizing socio-cultural aspects of the two countries (Japan Imperial Household Agency, 2017). Japan's success in building a strategic partnership with Saudi Arabia opened up eight ample opportunities in the energy sector that Japan could utilize. Some of them are essential in supporting Japan's energy security, such as the joint crude oil storage with Saudi Arabia in Okinawa, the hub of energy transportation in the south of Japan, cooperation in the Aramco initial public offering (IPO), joint-project of potential oil and gas energy infrastructure, energy efficiency and energy conservation promotion, new and renewable energy promotion, human resource development in the nuclear sector, power generation and grid development, and a low carbon energy system collaboration (MOFA, 2017). It can be concluded that the Japanese strategy in securing short-term energy supply after the Fukushima Disaster is through intensive and extensive resource diplomacy with the Central Asia region, Russia, and the Middle East using strategic partnerships. Shinzo Abe's annual high-level state visits are to build these strategic partnerships.

Participating in Maintaining Maritime and Gulf Security

Many countries are using sea routes in the distribution of their international energy trade. This distribution passes through the Hormuz Strait, the center of the world energy trade, and the Malacca Strait as the hub before entering the Asia Pacific region. From the geopolitical maritime realm view, Japan needs to be aware of the military disturbance, including piracy and terrorism. Moreover, the Malacca Strait is close to SCS, which is currently full of territorial disputes. The disturbance in the Malacca Strait today is often referred to as the Malacca Dilemma. As a country with a significant dependence on maritime energy transportation routes, Japan needs to be aware of the obstacles known as choke point security.

For example, in June 2019, a Japanese oil tanker, *Kokuka Courageous*, sank because of an attack by a torpedo in the Gulf of Oman. Iran is suspected as the attacker by several countries, especially the US, although there is still uncertainty regarding the attacker. Because of this incident, for the first time in 41 years, Shinzo Abe made a special visit to Iran to solve the problem and mediate Iran's conflict with the US (Suzuki, 2019). The conflict escalation around the Strait of Hormuz prompted Iran to close the strait for international trade. If this happens, Japan will lose 20% of its energy needs. Anticipating the lousy scenario related to the Strait of Hormuz, Japan is considering sending the Japanese Maritime Self-Defence Force (SDF) to investigate the Gulf of Oman and the Strait of Bab el-Mandeb regarding the incident (Suzuki, 2019). The Strait of Hormuz is a crucial point of Japan's energy logistic route. Hence it is not surprising that Tokyo thoughtfully responded to the incident.

Picture.5
Sea Lanes of Communications of Japanese Energy Imports



Source: Chubu Electric Power, 2019

On the maritime security sector, Japan, with the *Jieitai* or the Japan Self Defence Force (JSDF) and the Japanese Coast Guard (JCG), help guarding the SLOC or the sea lines of communication and several other conflict-prone places, which often called chokepoints security in the Asia and Pacific region. Several chokepoints are essential for Japan as the entry route for its oil, such as the Malacca Strait, Singapore Strait, Spratly Island, and Bashi Canal (Widyasari, 2008). JSDF holds a vital role in guarding the SLOC as the sea poses a threat to energy security such as piracy, armed robbery against ships, and sea

lines blocking. An increase in maritime safeguarding is carried out every year by JSDF with assistance from the US military as the main ally. The US itself has military bases in Okinawa and the Seventh Fleet headquartered in Yokosuka, Kanagawa Prefecture, Japan, to maintain international order from Asia Pacific waters. China also poses a threat to Japanese energy security. Nevertheless, this threat is more of a political one than an economy. This threat may worsen if the relationship between China and the US deteriorates.

Japan also paid particular attention to SCS. China's militarisation in SCS is a threat to Japan's energy imports from the Gulf states. As discussed by many academics and maritime security observers, the SCS area is currently full of contestation between China and ASEAN countries, including Indonesia. Indonesia is currently strengthening its political realism due to the violations of sovereignty by China and Vietnam in Natuna (Anggraini et al., 2018; Kantaprawira et al., 2019; Kusumawardhana et al., 2020). The instability surrounding the SCS is very unfavorable towards Japan's energy imports activities. Therefore, Japan has two ways to face this challenge. First, by upgrading the military air bases around the Senkaku Islands and improving the AEGIS system in naval technology. In 2010, the JSDF had four advanced missile destroyers, 30 missile destroyer ships, and 14 conventional submarines with 2,700 tonnes. Japan's efforts to improve maritime defense are inseparable from the cooperation carried out by the Japanese government in international organizations. In addition to the military assistance, Japan is taking a funding-based approach through the ODA to Malaysia and Indonesia to strengthen piracy and terrorism (Raj, 2009). Japan's effort by involving the coastal states such as Malaysia, Singapore, and Indonesia are forms of capacity-building programs aimed to maintain sovereignty and strengthen maritime security.

CONCLUSION

Based on the analysis of this study, Japan's strategy to energy security relies on both domestic and international dimensions. Domestically, Japan has strategy energy plans as their national energy policy rationale in pursuing energy security, creating economic growth with sustainable value, independence, improving life standard, and developing stable energy supplies. Japan tries to create a structured energy supply and demand to support its economy. Therefore, an evenly distributed domestic energy diversification also holds a vital role in this case. On the international scope, Japan emphasizes three strategic efforts, realigns their strategic relations with China, ensures the security of energy supply through diplomacy and commitment to Central Asian countries, Russia, and Saudi Arabia, and strengthens the maritime sector and safety of the gulf with JSDF. Those efforts were to guarantee Japan's energy accessibility via energy import to fulfill domestic needs. Therefore, Japan's primary weapons to achieve its energy security objectives are strengthening the basis of its energy policy, diplomacy, and international cooperation.

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