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Indonesia's Just Energy Transition Partnership (JETP) as a Strategy for Achieving Energy Security

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Abstract

The energy crisis that has hit the world requires countries to shift the use of their energy sources to renewable. As one of the most significant users and needs of coal sources, Indonesia requires careful preparation in the energy transition. One of the programs launched by the International Partnership Group (IPG) countries is the Just Energy Transition Partnership (JETP), which supports and assists countries, especially developing countries, to realize the energy transition. This paper aims to find out how JETP Indonesia's role as a strategy for Indonesia in achieving energy security. We will elaborate on this research topic with the concept of energy security. This concept is generally used to analyze a country's condition with its efforts to secure its energy sector as a very vital sector. Our research uses descriptive qualitative research with secondary data obtained through documentation. We argue that the JETP has helped push Indonesia to achieve its energy transition targets to reduce carbon emissions and minimize the climate crisis through several program schemes and funding provided by the JETP.

Key Words: Energy Security, JETP, Renewable Energy, Energy Transition

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INTRODUCTION

Energy is very important for driving all human activities and the survival of living things on Earth. In meeting the need for energy, fossil fuel energy sources such as petroleum and natural gas are used. The massive use of fossil fuels as non-renewable energy depleted available energy reserves (Muliawati, 2008). According to the International Energy Agency (IEA), in 2019, fossil fuels (coal, oil, and natural gas) accounted for about 84% of the world's primary energy consumption. This shows a high dependence on fossil fuels as the main energy source to power the economy and meet the world's various energy needs (IEA, 2021).

This condition is exacerbated by a series of global events that have occurred in recent years. In 2020, the Covid-19 pandemic caused the domestic political economy of each country to collapse due to declining fuel prices in 2020 (IEA, 2021). As reported by IEA (International Energy Agency), In 2021, there was a 3-fold increase in the price of US natural gas compared to 2020 due to the decline of the fuel commodity with increased demand due to the period before winter in the North.

While the world was still recovering from the global pandemic, on February 24, 2022, Russia invaded Ukraine, which shook the global energy market. This event led to a 20% increase in energy prices worldwide for five consecutive months (Yagi & Managi, 2023). Significant increases in fuel prices have directly contributed to a 90% increase in the average cost of electricity generation worldwide. Coupled with the lingering effects of the global pandemic, the energy crisis has left 70 million unable to pay for electricity. According to the European central bank, the gas sector saw a 180% increase in the first two weeks of the invasion, causing a regional gas supply crisis.

The emerging energy crisis is felt globally due to the interconnected global energy supply chain. The impact of the energy crisis can be seen in the rising prices of several energy sources such as coal, natural gas, and oil, which increased by 2 to 4 times by mid-2022 (IESR, 2023). According to a report titled Fostering Effective Energy Transition 2023 Edition (World Economic Forum, 2023), rising energy prices have caused a cost-of-living crisis in many countries, and have even triggered food inflation. To this end, some countries have responded by subsidizing fossil fuels to the tune of $1 trillion by 2022.

The high rise in natural gas prices has led many countries to increase their use of coal fuel (Yagi & Managi, 2023). However, this shift towards energy use has a

significant negative impact because it causes an increase in carbon emissions (CO_2) which can impact global warming (IEA, 2021). In 2020, fossil fuel combustion was responsible for 36.4 gigatons (Gt), or about 81% of total CO_2 emissions globally. These emissions trap heat in the atmosphere, leading to rising temperatures and adverse climate impacts.

As a result of the ongoing energy crisis, many countries have taken steps to transition towards renewable and environmentally-friendly energy sources. According to the International Energy Agency's (IEA) definition, compared to fossil-based energy, which must wait millions of years to replenish itself, new and renewable energy may be created continually and sustainably. Renewable energy is defined as energy derived from renewable energy sources available for reuse. Renewable energy is also more environmentally benign than non-renewable energy because it might lessen environmental degradation and harm.

The importance of developing renewable energy gradually emerged with The Paris Agreement and the 26th Conference of Parties aimed at limiting global warming. In recent years, significant attention has been paid to developing new renewable energy (Wang et al., 2020). Researchers agree that economic growth that slowly replaces fossil fuels with renewable energy can also improve environmental quality (Lange et al., 2020) and (Shahbaz et al., 2020). From this, it encourages the development of new renewable energy technology because it can balance economic growth and natural sustainability (Dogan & Seker, 2016). Thus, renewable energy is the right choice for mitigating greenhouse gases and creating energy security.

Efforts by countries to reduce dependence on fossil fuels and climate change's impacts have been happening worldwide. One of the countries working on this transition is Indonesia. New renewable energy development is prioritized by the Indonesian government locally and internationally. Renewable energy is a crucial area for Indonesia's future development, as it even became one of the three primary subjects of this year's G20 Presidency. The Indonesian government announced plans to restrict the usage of coal-fired power facilities in a Presidential Regulation (Perpres) released in September 2022 (PERPRES No. 112, 2022). Indonesia is currently planning a long-term strategy to create low carbon emissions and is committed to becoming carbon neutral by 2060 (UNFCC,2021).

Despite Indonesia's commitment to climate change mitigation, the country still struggles to realize it. Indonesia is committed to making renewable energy contribute 23 percent of its energy mix by 2025, (PERPERES No. 79, 2014), but this figure currently stands at only 12 percent (G20 Indonesia, 2022). This is because

Indonesia is the world's largest coal exporter, responsible for 60 percent of Indonesia's electricity generation (Arif, 2023). Erick Thohir, Indonesia's Minister of State-Owned Enterprises, said the planned phase-out of coal power plants over the next three decades requires US$600 billion in capital support (Bloomberg n.d.).

To address these constraints, Indonesia and several countries such as the EU, Japan, Canada, and the United States established a multilateral cooperative relationship called the Just Energy Transition Partnership (JETP) which was inaugurated at the G20 Summit in November 2022. The JETP cooperation was established in 2021 during the COP26 summit between South Africa and some of its international partners. Indonesia is only the second country to accept JETP. Vietnam and India will likely be the next two countries to implement JETP cooperation.

JETP is a system of financing energy transition by developed countries to developing countries is a clear example of multilateral cooperation in the context of international relations. It involves the transfer of funds, technology, knowledge and other resources from more developed countries to developing countries to help them transition to more sustainable and environmentally friendly energy sources. JETP is a funding scheme through cooperation between countries by combining public and private investment funds to assist climate crisis mitigation efforts for developing countries, especially to make the energy transition from fossil fuels. The JETP model aims to support a green economy and the financial requirements of communities that are particularly vulnerable to the effects of the energy transition in addition to stimulating the energy transition.

In particular, JETP Indonesia's cooperation will focus on reducing power sector emissions as Indonesia's energy security strategy through a gradual reduction in coal use. With the help of JETP, Indonesia might gradually wean itself off fossil fuels. As Indonesia places an ever-increasing emphasis on solving climate challenges, the initiative is poised to provide the country with new momentum toward a still-developing but expanding green economy.

This transition through the JEPT scheme is considered to not only result in better climate action. However, it will also help support economic growth, new skilled jobs, reduced pollution, and a better and prosperous future for the people of Indonesia. From this background, researchers are interested in examining more deeply the JETP Cooperation as an effort by the Indonesian government to achieve its energy security.

METHOD

In answering the problems raised, this research will use descriptive qualitative methods. Qualitative method is a research method used to understand a social phenomenon that does not require a quantification process because the phenomenon cannot be measured accurately and precisely (Abdussamad, 2021). Meanwhile, according to Ikbar (2014), descriptive research aims to provide a description or description of the object or phenomenon being studied. The data to be used is secondary data. Secondary data is data whose source does not come from first hand information or data collectors, but through certain parties or documents (Abdussamad, 2021). In collecting this data, the author will use documentation techniques. The author will collect data through journals, articles, websites, and other documents relevant to the topics studied in this research.

In this research, the author uses the concept of energy security, considered the most appropriate concept, to explain the research topic. The concept of energy security itself does not have a standardized definition because it is adjusted to a country's perception. But in general, the issue of energy security has emerged since the 1970s, precisely after the world oil crisis. At that time, there was a cut in oil supply by the Organization of the Petroleum Exporting Countries (OPEC) which caused oil prices to rise dramatically and indicated a world economic crisis (Dyer & Trombetta in Ramadhani, 2018). In addition, energy is vital for all humans in carrying out their activities. This makes energy issues begin to enter the realm of security issues.

According to Michael T. Klare in Sagena & Hasyim Mustamin (2016), Energy security has gained space and attention for decision makers, researchers, and the global community. Energy security has become one of a country's policy priorities in carrying out its domestic and foreign politics. According to the United Nations Development Program (UNDP) in Sagena & Hasyim Mustamin (2016), energy security is a condition where oil reserves or other energy sources are available at affordable prices and in sufficient and adequate quantities. However, this definition is quite narrow in explaining energy security. According to Daniel Yergin in Ramadhani (2018), energy security is not only about the availability of supplies and prices of energy sources, but also about the security of the entire energy supply chain, ranging from oil or gas pipelines, refineries, transportation, and others. More broadly, energy security covers several issues related to security and protection of infrastructure, social issues, the environment, efficiency, demand, governance or public policy, and quantification (Ramadhani, 2018).

Energy security is a situation where energy and electricity sources are available in sufficient quantity, good quality, and affordable prices per the principles and values

of sustainable development (Prambudia et al., 2019). Based on Farid (2017), there are several aspects of energy security which include:

1. There are geopolitical, economic, technical, psychological and environmental threats to a country's energy security.
2. The price element has a direct impact on the country. In this case, the price element can influence the level of fluctuation of.
3. A n energy source that is uncontrollable, resulting in an unstable state of a country.
4. The price of energy significantly impacts the availability of funds and investment capital to explore and develop energy resources. Funds are an important factor in maintaining the demand for energy resources.
5. Maintaining the supply of energy resources through diversification of energy sources.
6. Searching for new energy resources in a country to minimize energy dependence from energy resource-producing countries.

As a strategic resource owned by a country, energy security has now entered as one of the agendas in a country's national security (Mulligan dalam Ramadhani, 2018). This will encourage countries to carry out projects or programs to achieve energy security conditions, namely when the availability of energy access is guaranteed for all levels of society.

RESULT AND DISCUSSION

The Urgency of Indonesia's Energy Transition

Indonesia is similar to other countries that utilize fossils as a primary fuel. With high population and economic growth, increasing domestic energy demand and declining domestic petroleum production have made Indonesia an energy importer with growing volumes (Metta Dharmasaputra, 2014). Along with its growing energy consumption, Indonesia faces various energy security challenges/issues. Indonesia, which is the world's leading exporter of coal, belongs to a group of countries where the contribution of fossil fuels to electricity is more than 80%. Our World in Data notes that 86.95% of Indonesia's total electricity production in 2020 came from fossil fuels.

With a 66% share of electricity generation in 2021, coal-fired power plants are the main contributor to energy sector emissions (around 40%), even 90% of electricity sector emissions. PLN's most recent RUPTL (the green RUPTL) still envisions an

additional 13.8 GW of coal plants over the next decade. According to the same plan, the share of renewable energy will only increase to around 24% by 2030, resulting in an overall increase in power sector (and energy sector) emissions.

This is despite Indonesia ratifying the Paris Agreement through UU No. 16/2016. Indonesia is, therefore, legally required to make a significant contribution to the global effort to combat climate change by ambitious efforts and steps to reduce Greenhouse Gas (GHG) emissions and restrain the increase in world temperature. Global Greenhouse Gas (GHG) Emissions Must Decline By 45% By 2030 Compared To 2010 And Reach Net Zero Emissions By 2050, According To One Of The IPCC Climate Analysis Results. Indonesia is among the top 10 greenhouse gas (GHG) emitters and is still projected to continue increasing its emissions, with the energy sector as the highest GHG contributor by 2030.

If no significant new energy sources are found shortly, by 2046, it is feared that Indonesia will experience an energy deficit. According to the Ministry of Energy and Mineral Resources (ESDM), Indonesia's fossil energy resources are in danger of running out in the future. The increasing demand for energy in the country and the decline in petroleum production have depleted Indonesia's energy resources and require energy supplies from outside (International Trade Administration, 2021). Indonesia's economy will be protected with adequate energy security. To maintain Indonesia's energy security during the energy crisis, an alternative is needed in the form of an energy transition. Not only to maintain Indonesia's trade balance but to be able to keep Indonesia away from the worst possibilities.

Indonesia can no longer rely on a fossil-based economy because fossil reserves in various countries have decreased, including Indonesia. (British Petroleum Company, 2021) In addition, the excessive use of fossil fuels will increase the danger of global climate change. As a member of the United Nations Framework Convention on Climate Change (UNFCCC), Indonesia has agreed to a policy to mitigate climate change by reducing carbon emissions through its commitment to reduce carbon emissions by 29% to 41% by 2030 through international cooperation as outlined in the Paris Agreement. (Ministry of Finance Indonesia., 2019)

Following this international commitment, Indonesia must design a carbon tax policy that effectively reduces carbon emissions. In addition, a carbon tax can be the first step in implementing the transition from fossil energy to new and renewable energy to achieve energy security. The use of new and renewable energy should be the primary concern of the Indonesian government.

Just Energy Transition Partnership (JETP)

The Just Energy Transition Partnership, also known as JETP, is a program that was initially generated through the annual discussions of the 26th Conference of Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) held in Glasglow, UK in 2021 (Andayani et al., 2022). he International Partners Group (IPG) member countries initiated the program, namely the United States, France, Germany, the United Kingdom, and the European Union. The program engaged South Africa as its first partner to encourage the country to decarbonize and assist it in achieving an economic transition to cleaner energy sources. JETP mobilized USD 8.5 million to South Africa to encourage the country to decarbonize for 3 to 5 years (Andayani et al., 2022). This program aims to provide support for countries, especially developing countries, in making an equitable transition through investment plans and funding provided.

In addition to South Africa, JETP collaborates with Indonesia as its partner, which was approved during the G20 Summit on November 15, 2022 (Ministry of Finance Japan, 2022). The Joint Statement was made by Indonesia together with the United States, Canada, Japan, Denmark, the European Union, Germany, France, Norway, Italy, the United Kingdom, and Northern Ireland, where these countries are members of the International Partners Group (IPG). In approving the cooperation, several representatives of each country gave statements related to the Indonesia Just Energy Transition Partnership (INO-JETP) as follows (US Embassy Jakarta, 2022):

Canadian Prime Minister Justin Trudeau stated that Canada would assist Indonesia in realizing its 1.5-degree climate target, its carbon emission target, building renewable energy generation, and realizing energy security. Besides that, Japanese Prime Minister Kishida Fumio stated that Japan supports Indonesia in optimizing its commitment to realize the 1.5-degree target. Japan is also determined to ambitiously coordinate with other partner countries to assist Indonesia in its energy transition, namely shifting coal production and use towards renewable energy.

Ursula von der Leyen, President of the European Union, stated that this INO-JETP cooperation, would help Indonesia to achieve a cleaner and greener future and increase opportunities for Indonesian people through the transformation and transition to renewable energy. French President Emmanuel Macron said that through this partnership, France strongly supports Indonesia to decarbonize and shift energy towards renewable energy. Through INO-JETP, France and other partners will assist Indonesia in developing and creating economic opportunities equitably.

Olaf Scholz, Chancellor of Germany, stated that the INO-JETP partnership can accelerate the achievement of climate targets and a just transition for economic development. JETP is a multilateral partnership program and a lighthouse project for countries to achieve energy transition and sustainable investment. Giorgia Meloni, Prime Minister of Italy, revealed that Italy supports the JETP partnership, which helps countries by providing funding as a form of technical assistance provided to Indonesia to be able to shift the use of fossil energy to renewable energy.

Prime Minister of Georgia, Jonas Gahr Støre, revealed that through the INO-JETP cooperation, Norway would provide support to Indonesia in order to immediately make an energy transition through funding provided by other partners. This partnership will contribute to decarbonization and reduce the impact of the climate crisis. Rishi Sunak, Prime Minister of the UK, also revealed that the UK is proud to partner on INO-JETP, which will impact opportunities for private investors in building greener infrastructure.

In addition to support from the International Partners Group (IPG), the JETP partnership in Indonesia is also supported by Multilateral Development Banks (MDBs) such as Glasgow Financial Alliance for Net Zero (GFANZ), Bank of America, Citi, Deutsche Bank, Macquarie, MUFG, HSBC, and Standard Chartered. The JETP Indonesia partnership has an investment plan that aims to encourage Indonesia to immediately reduce emissions in the power sector by 2030 and realize net zero emissions by 2050. This is done by doubling renewable energy generation to 34% by 2030 and decommissioning coal power plants as early as possible (IESR, 2022)

The JETP Indonesia partnership has several targets to achieve in line with the realization of the 2030 Agenda and The Paris Agreement. JETP Indonesia aims to limit the impacts of climate change by keeping warming to 1.5°C above pre-industrial levels and halving global CO2 emissions by 2030. It also aims to decarbonize the energy system by accelerating power sector emission reductions, improving energy efficiency, and accelerating the use of renewable energy while strengthening efforts to achieve universal, affordable, and reliable energy access. A further target is to achieve a just energy transition for workers and communities, especially those most affected by the energy transition from coal (Ministry of Finance Japan, 2022). In this regard, the JETP will lead Indonesia's energy transition toward equitable and sustainable energy.

JETP is mobilizing USD 20 billion for Indonesia to achieve the target by assisting Indonesia in shifting from fossil fuels to renewable energy (IESR, 2022). The mobilization of funds will be done through two methods. First, 10 billion USD will

be mobilized by the International Partnership Group (IPG). Furthermore, second, mobilization will be carried out by the Working Group of the Glasglow Financial Alliance for Net Zero (GFANZ) in coalition with the Indonesian government and the IPG itself (Andayani et al., 2022). The funds will be used to run several projects that support the 2030 emissions reduction target and the achievement of net zero emissions by 2050. Some projects, such as Coal-Fired Power Plant (CFPP) retirement/flexibility, Renewable Energy (RE) power development, RE supply chain, just transition, and decarbonization, will be carried out.

JETP Indonesia in Achieving Energy Security

According to Andayani et al. (2022), as one of the most significant users of fossil energy, especially coal, Indonesia has committed to The Paris Agreement through the Nationally Determined Contribution (NDC) that Indonesia will seek to reduce greenhouse gas (GHG) emissions independently by 29% and through international assistance by 12% by 2030. In addition, Indonesia also wishes to avoid the global average temperature increase to no more than 1.5C. There are several scenarios of efforts made by Indonesia to achieve this target, namely through the development of renewable energy, energy efficiency, energy conversion, and the application of clean technology.

Indonesia's energy transition towards renewable energy, especially in the electricity sector, is essential. This is because Indonesia's electricity sector has contributed as much as 40% of the total emissions (IESR, 2022). In response to this, Indonesia's Ministry of Energy and Mineral Resources (MEMR) has made a plan regarding the efforts that Indonesia can make to achieve emission reduction targets and reduce the impact of the climate crisis, namely through the natural termination of Steam Power Plants (PLTU) and shifting usage towards renewable energy so that net zero emissions can be realized by 2060. However, implementing these scenarios and plans requires careful preparation, especially regarding funding. At least 28 billion USD per year are needed for Indonesia to achieve the targets expected by Indonesia to make the energy transition and switch to renewable energy and decarbonize, leaving coal in 2060 (Andayani et al., 2022).

The partnership between Indonesia and the JETP is one strategy that Indonesia can utilize to achieve its energy security. Although the funding provided by JETP is insufficient to meet the required target of 28 billion USD, the 10 billion USD can still make a difference for Indonesia to achieve its targets, such as net zero emission in 2060. In addition to the support from IPG, the JETP Indonesia partnership also involves several parties, such as the International Energy Agency (IEA), the State Electricity Company (PLN), and the Climate Policy Initiative, which will provide

technical assistance, namely the development of a roadmap for achieving decarbonization and providing policy recommendations for decarbonization. In addition, the Ministry of Finance of the Republic of Indonesia and GFANZ will also provide assistance related to finance, namely facilitating funding mechanisms and defining Environmental, Social, and Governance (ESG) to minimize adverse effects on welfare, namely with a just transition (Kaimuddin, 2023).

Under the JETP scheme, Indonesia will develop investment plans to achieve new targets and policies to reduce greenhouse gas emissions and provide welfare and justice for affected communities (Ministry of Finance Japan, 2022):

1. It is determining the total emissions of the power sector by 2030, and making efforts to achieve greater emission reductions in the future.
2. It is limiting power sector emissions to 290 megatons of CO2 by 2030.
3. Set a target to achieve net-zero emissions in the power sector by 2050, advancing Indonesia's net-zero power sector emissions target by ten years.
4. Accelerate renewable energy deployment so that renewable energy generation accounts for at least 34% of all electricity generation by 2030.

In addition to focusing on achieving the energy transition and reducing emissions, the Indonesia-JETP partnership also considers the welfare of all people. This is because by limiting the consumption of coal, the dominant energy source in Indonesia, the transition activities will likely negatively impact society and the economy. Therefore, a just transition roadmap is needed for the whole society by creating green jobs, protecting vulnerable groups, and enhancing skills in addressing issues related to the energy transition (IESR, 2022). The Just Energy Partnership (JETP) program will succeed if there is transparency and inclusive dialogue between Indonesia and other stakeholders to achieve a just transition.

CONCLUSIONS

The issue of energy security is one of the inputs into a country's domestic or foreign political agenda. As a country that uses coal as its primary energy source, especially in electricity, Indonesia has committed to achieving energy security. Energy security is an essential substance in Indonesia because it not only focuses on fulfilling energy availability but also on meeting excellent and sustainable energy standards that can minimize the climate crisis in the world. However, in practice, Indonesia still needs to realize it. This is partly due to a country's difficulty in transitioning from the main energy source, namely coal, to renewable sources. In

addition, there is another obstacle in undergoing energy diversification, namely the need for considerable capital preparation.

JETP Indonesia, which was approved in 2022, precisely during the G20 Summit in Bali, has provided a glimmer of hope for Indonesia to realize the energy security order. The support provided by the parties involved in the JETP to Indonesia, one of which is in the form of capital, the making of targets, and programs launched in the JETP, also brings Indonesia closer to realizing its energy security. In addition, this program also involves other essential aspects, namely the welfare of the community, especially those affected by restrictions on the production and consumption of coal as an energy source.

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