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Coal and natural gas energy policy for Indonesian electricity security

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Abstract---Electrical energy is very important for national security, so it is important for every country to ensure the availability of electrical energy. The majority of power plants in Indonesia use coal and natural gas energy. The availability of raw materials for electricity generation in Indonesia is threatened because of the policy of increasing the number of exports of raw materials. This study examines the policy on the availability of coal and natural gas energy as an important instrument in national security. This study uses the concept of energy security based on vital energy system vulnerability, availability, accessibility, affordability and acceptability. Then, this study uses qualitative methods to explore policies in managing primary energy, coal and natural gas for the benefit of electricity in Indonesia. The results of this study found that the availability of coal and the accessibility of natural gas are the biggest vulnerability factors for the State Electricity Company as a provider of electricity in Indonesia, in addition to the aspect of price affordability and environmental regime pressures that are factors for the vulnerability of vital energy systems for electricity in Indonesia. The securitization process to address the vulnerability of primary energy to coal and natural gas is through the politicization of the primary energy issue of coal and natural gas which has created a debate between export and domestic interests. The speech act carried out by the executive and

legislative governments resulted in a DMO securitization policy to ensure energy availability and reserves.

Keywords---energy policy, electricity, securitization.

Introduction

Indonesia is one of the largest countries in the Southeast Asia region with a Gross Domestic Product (GDP) based on current prices in the third quarter of 2017 reaching Rp. 3,502.3 trillion (BPS, 2017). Indonesia is one of the countries with large natural resource ownership. In the 1970-1980s Indonesia's economic growth was strongly supported by the export of petroleum as one of the major exporters in the world. The highest oil production was experienced by Indonesia in 1976 and 1996, which reached 1.6 million barrels per day. Indonesia has proven oil reserves of 3.7 billion barrels and is included in the world's top 20 oil producers (PWC, 2017). As a large middle-income country with fairly rapid economic growth, energy is an important component of the driving force of the economy and development in Indonesia. The need and ability to utilize and manage sustainable energy sources is a must. If the Indonesian economy continues to grow at its current rate, the Ministry of Energy and Mineral Resources (ESDM) estimates that domestic energy demand will also increase by about 7% per year, with electricity demand projected to nearly triple between 2010 and 2030.

The Ministry of Energy and Mineral Resources explained that Indonesia has coal resources of around 120.5 billion tons, proven oil resources of around 3.69 billion barrels, and proven natural gas reserves of around 101.54 trillion cubic, Indonesia ranks 15th in the world and third in the world. in the Asia-Pacific region (after Australia and China) (PWC, 2017). This is estimated to provide Indonesia's potential energy reserves of around 12 years of remaining oil reserves, 39 years of gas, and 146 years of coal based on this 2017 production level (Tharakan, 2015). While it is estimated that the potential of renewable energy sources available in Indonesia is also quite large, where Indonesia has significant potential for hydroelectric power up to 75,000 MW, micro and mini hydro power 1,013 MW, solar 4.80 kWh per square meter per day, biomass 32,654 MW, and wind (3 to 6 meters per second), and has 40% of the world's geothermal reserves of 28,000 MW (Tharakan, 2015).

Indonesia is one of the countries in Southeast Asia with a fairly large demand for energy needs, reaching 35% of the demand for all of Southeast Asia where energy consumption in general in Indonesia showed an increase of 5.9% in 2016 (Southeast Asia Energy Outlook, 2017) . Based on data from the Ministry of Energy and Mineral Resources, electricity consumption per capita reached 994.41 Kilowatt hour (Kwh) until the end of 2017. This number increased by 3.98% compared to 2016. Half of this electrical energy consumption was purchased by household consumers compared to industry. In addition, there is a fact that compared to ASEAN member countries, Indonesia is a country that ranks 6th in the category of easy access to electricity.

If you look at the general data, there are several limitations of electricity production caused by several things such as limited infrastructure for providing/generating electricity and limited availability of primary energy for power generation in Indonesia, which in the current decade is still dominated by coal, natural gas, and oil. has decreased, and there has been an increase in new and renewable energy. Based on 2017 data, the largest domestic coal users are power plants at 81%, while a small portion is for the cement, textile, pulp and metallurgical industries, where the most users are located in Java. Meanwhile, the location of coal production is almost entirely in Kalimantan, namely 93% and the remaining 7% in Sumatra, thus requiring infrastructure in the form of ports, coal storage and transportation facilities.

After 2024, Indonesia will face the possibility of a decrease in its capability to produce electricity which is caused, among others, by several international regulations, which gradually limit the use of "black" fuels that are not environmentally friendly such as coal which will become one of the main obstacles in the exploration and production process. coal and the use of coal as primary energy for electricity in Indonesia. The pressure on environmental conservation on coal mining is one of the obstacles in the exploration and use of primary energy from coal for electricity needs.

The need for electrical energy is a primary need for society, where almost all sectors of people's lives are individuals, business and social organizations, or for the development of the national economy. Households are the largest customer sector that is highly dependent on the availability of electricity, until 2016 electricity sales to households reached 93,634.63 MWh, greater than the industrial sector which reached 68,145.32 MWh (Electricity Statistics in 2016). Based on this, it can be seen that electricity problems are not only a necessity for national economic growth, but are also closely related to the living needs of the Indonesian population.

The number of customers in 2017 reached 68.1 million subscribers, this shows an increase compared to 2016 which was 64.3 million subscribers. Of the total number of customers, the household group is the largest number of customers. The electrification ratio in Indonesia by comparing electrified households to the number of existing households, the electrification ratio level until the end of 2017 reached 95.4%. This shows an increase of 4.2% compared to 2016 where the electrification ratio reached 91.2% (PLN Corporate Communications Document, 2018). Based on these data, there has been a significant increase in the number of electrification ratios in the last 5 years, but this also shows that there are still groups of people who have not enjoyed electricity in Indonesia. In some areas the electrification ratio is still below 80%, even in East Nusa Tenggara and Papua the electrification ratio is still below 60%. This is a homework that is a challenge for the government to meet the needs for electrification which tends to continue to increase.

The supply of primary energy resources that drive these power plants is a crucial issue as important as the availability of electricity infrastructure. The electricity supply to the community needs to be guaranteed both in quantity that is adequate for the needs of the community, and in terms of quality, the price can

be affordable by the community. This is the main task of the State Electricity Company (PLN) which is responsible for the availability of electrical energy in Indonesia. The supply of electricity in quantity and quality to meet the needs of the community is highly dependent on the availability and security of supply of primary energy resources for PLN and the private sector that builds and operates power plants.

The problem of security in the supply of primary energy resources is very systemic, which needs to be seen from various perspectives, both related to the economy (related to price fluctuations in the global market, purchasing power), politics (government policies and international organizations in energy policy) as well as the environment and the environment. social. Availability of supply of primary energy resources is not only related to ownership of natural resources. As we know in the supply of electrical energy in Indonesia, 80-90% of primary energy resources come from fossil fuels which have problems related to: 1) fossil fuel reserves are continuously declining and several countries including Indonesia for certain types of fossil fuels such as crude oil, and or fuel oil already relying on imported supplies; 2) burning fossil fuels causes environmental problems, which are of international concern and Indonesia as part of the international community, needs and must contribute to environmental sustainability policies; 3) ownership of primary resources which are not entirely owned by the state, causing Indonesia to be closely related to primary energy prices in the global market which greatly determines the level of buying and selling value of these primary energy resources. These problems place a country's primary energy security cannot be seen by one factor alone. This encourages the need for the government to be able to manage the problem of the availability of primary energy for the security of primary energy supply for the future to ensure the availability of electricity for the whole community.

Previous researches on energy security were mostly carried out by researchers in International Relations and Global Security around the world, due to the increasing dependence of the world economy on energy availability. Some researchers focus on the policies and strategies of developed and developing countries in ensuring their energy security by using energy as a diplomatic capital and international political commodity (such as Cohen, 2009; Luft, 2009; Stewart, 2009; Howell, 2009; Carl, 2009; Goldwyn, 2009, Pamir, 2009; Kumar, 2010; and Alami et al, 2017). Some of these studies discuss the efforts of countries in the world which naturally and geographically have diverse oil content in securing their domestic energy needs.

The securitization process of the Indonesian government is to fulfill the security of primary electrical energy in Indonesia, with the reference object in this study focused on primary energy sources of coal and gas which can provide a large supply of electrical energy. This research first identifies the existential threat and successful act of securitization based on 4 main indicators derived from several energy security concepts, namely the availability aspect by looking at the level of ownership of geological and technological resources in Indonesia; second, the aspect of affordability by looking at the ability of the Indonesian economic system related to international markets; third, the aspect of accessibility of primary energy resources by looking at geopolitical factors including the attachment of

contracts with foreign actors for exports and imports and; acceptability aspect by looking at the impact of primary energy securitization for electricity on the level of adaptation to socially and environmentally sustainable development such as regulation of coal restrictions and global warming factors.

Method

This study uses qualitative methods, Stake (2010: 13-15) explains that qualitative research emphasizes studies in the form of observations and interpretations of researchers as research subjects. This study aims to understand the process of securitization of primary energy security to meet electricity needs in Indonesia by looking at the vulnerability and evaluating the governance policies of primary energy sources for electricity in Indonesia. The primary data used in this research are energy security policies and governance, particularly regarding electricity in Indonesia, as well as structured interviews with:

1. Ministry of Energy and Mineral Resources
2. Head of Commission VII, House of Representative (DPR RI)
3. PT. PLN (State Electricity Company)
4. PT. Pertamina
5. Foreign private oil and gas companies,
6. and NGOs, as well as non-participant observation in several relevant institutions.

Secondary data of this research was obtained through library research and internet research by using various data and information related to primary energy security securitization efforts for electricity in Indonesia as much as possible from books, journals, magazines, and newspapers.

Discussion

National Electricity Policy

There are not many alternative constructions for energy security in Indonesia. There are several indications of a broader understanding of energy security by including aspects of sustainability and human well-being as factors that need to be considered in national energy security policies. The reference object of national energy security is quite diverse, in this case the availability of electricity for the Indonesian people which is the responsibility of PLN is a source of energy for national security and public welfare. Without electricity, in general, it can threaten national security in terms of traditional security and non-traditional security.

The government's effort to maintain national electrical energy security is to involve the participation of the community to be involved in the development of the electricity sector. Based on Law no. 30 of 2009 concerning Electricity, local governments and the private sector (private business entities, cooperatives, and non-governmental organizations) can participate in the business of providing electricity. This certainly can reduce the burden on the government in providing funds for the development of electricity infrastructure in Indonesia. The greater

involvement of the private sector in electricity development can also be seen from the policy for the construction of a 35000 MW power plant with a smaller portion of the government than the private sector. The government's commitment to provide an additional 35,000 MW, carried out by the Government together with PLN and the private sector, will build 109 power plants, each of which consists of 35 projects by PLN with a total capacity of 10,681 MW and 74 projects by the private sector/Independent Power Producer (IPP) with a total capacity of 25,904 MW. Where in 2015 PLN signed a 10 thousand MW power plant contract as phase I of the total 35 thousand MW (PLN, 2019). In the government's view, the interests of the national economy depend on the availability and adequacy of electricity for the nation, the limited capacity of the government and PT. PLN (Persero) provides development funds for the development of electricity infrastructure, so the role of private investment and other business entities is very necessary, in order to meet the needs of national electricity. Of the 35 thousand MW power plants to be built, more than 1,127 trillion rupiah is needed. Therefore, the involvement of the private sector/IPP that will build 10,681 MW is absolutely necessary (PLN, 2019). To make it easier for the private sector, government support is carried out through various regulations, including: Law Number 12 of 2014 concerning Amendments to Law Number 23 of 2013 concerning State Revenue and Expenditure Budget for Fiscal Year 2014, Minister of Energy and Mineral Resources Regulation 1/2015 concerning Work Same with Provision of Electricity and Joint Utilization of Electric Power Networks, Minister of Energy and Mineral Resources Regulation 3/2015 concerning Procedures for Purchasing Electricity and Benchmark Prices for Purchasing Electricity from Mine Mouth PLTU, Coal PLTU, PLTG/PLTMG, and PLTA by PT. State Electricity Company (Persero) through Direct Election and Direct Appointment (PLN, 2019). Although the government has explicitly assigned PLN to build a 35,000 MW power plant based on the Presidential Regulation of the Republic of Indonesia Number 14 of 2017 concerning the Acceleration of Electricity Infrastructure Development (PIK), in practice PLN can build it independently or in cooperation with the power plant developer which is a business entity. State-owned, Regional-Owned Enterprises, cooperatives, and the private sector in collaboration with PT. PLN (Persero).

The existence of these policies places an important role for the private sector in providing electricity generation business in Indonesia. The domination of the private sector in the business of developing power plants is not a threat because the construction of power plants by the private sector will be preceded by a binding power purchase contract with PLN, so that the private sector cannot unilaterally change the selling price. This national electrical energy security can also be seen from the government's policy that places PLN as the only institution in charge of distributing/distributing electricity to consumers. So that although the power plants in the 35,000 MW program are dominated by the private sector, they cannot directly sell the electricity they produce to consumers, but only to PLN.

In addition, to ensure that the selling price of electricity to consumers is affordable, the government also evaluates the electricity purchase agreement from the power plant developer/IPP. In relation to this provision, the government has set rules that can be used as a reference for the terms of buying and selling electricity from IPP to PLN, which include: Minister of Energy and Mineral

Resources Regulation No. 10 of 2017 concerning the Principles of the Electricity Sales and Purchase Agreement; ESDM Ministerial Regulation No. 11 of 2017 concerning Utilization of Natural Gas for Power Generation; Ministerial Regulation 12/2017 concerning Utilization of New Renewable Energy for the Provision of Electric Power; and the Minister of Energy and Mineral Resources No. 19 of 2017 concerning the Utilization of Coal for Power Generation and Purchase of Excess Electricity. Based on these regulations, it can be said in general that the price of electricity purchased by PT Perusahaan Listrik Negara (Persero) must be lower than the national cost of production, so that it is still possible to sell electricity to consumers in accordance with the basic electricity tariff set by the government.

The 35,000 MW electricity development program launched by the government to secure the national electricity supply includes the development of power plants, transmission networks and substations and distribution networks. The consideration of the development policy is to meet the assumption of an average economic growth of 6.6% per year, with an average electricity demand growth of 8.3% per year and a target electrification ratio of 97% in 2019. This program is part of the development plan electricity for the next 10 years which is expected to have COD (Commercial Operating Date) in 2019 (Ministry of Energy and Mineral Resources, 2016). As of August 2018, the 35,000 MW program has only achieved 7% which is COD/SLO/Commissioning, while the other 50% is still in the construction stage, and 34% has reached a sale and purchase contract with PLN. The rest are still in the planning and procurement stages (PLN, 2019). Based on the data above, it can be seen that the progress of contracting and construction has skyrocketed with a significant number of which most of them are Steam Power Plants, especially coal-fired primary energy. The construction of this power plant requires a construction time of approximately 3-5 years. Currently, for the COD stage or the power plant that has entered the system, it has reached 1,504 MW (PLN, 2019).

This development progress requires guaranteed primary energy supply which is a national policy for national electricity energy security, at least the government has prepared several policies that support the use of coal and natural gas as the main primary energy for existing power plants or in this 35,000 MW power plant development program. Regarding primary energy supply for power plants, especially coal and natural gas, the government sees the need for policies that cover the primary energy producers and primary energy consumers (PLN). The government itself has a policy to start reducing the use of fuel oil which has been deemed inefficient. Meanwhile, the government's efforts to encourage an increase in the use of non-fossil primary energy such as water, biomass, geothermal, and other renewable energies have not shown a significant rate of increase.

In general, the policy for the use of coal refers to Law Number 4 of 2009 concerning Mineral and Coal Mining, while the use of natural gas refers to Law Number 22 of 2001 on Oil and Gas. The two laws basically state that as a non-renewable strategic natural resource, it is a national wealth controlled by the state, with the control being held by the Government and Regional Government. The two laws mandate the management of coal and natural gas as energy sources for domestic needs within the framework of sustainable national development.

The government continues to strive to meet the needs of national electricity supply at affordable prices for the community and continuously available at affordable prices. This requires policies that ensure the availability of affordable primary energy supplies, including through determining the selling price of coal. The state policy to prioritize the fulfillment of coal primary energy needs for PLN is contained in the policy that regulates the determination of the selling price of coal according to the Regulation of the Minister of Energy and Mineral Resources Number 1395 K/30/MEM/2018 concerning the Price of Coal for the Provision of Electricity for the Interest General. The policy of securing primary energy supply for power plants is carried out through two sides, namely from the perspective of PLN, which requires guaranteed supply and price, and from the point of view of primary energy business actors who require certainty of investment and profit, in which they are given the widest opportunity. to supply primary energy needs for power plants according to prices with economic value. However, this government policy has not been able to fully guarantee the supply of primary energy, both coal and natural gas, for PLN.

In addition, another problem related to the security of electrical energy is the sustainability factor of PLN related to the determination of the selling price of electricity (electricity basic tariff) as a product of PLN which is assigned by the government to provide national electrical energy needs. The government sets the basic electricity tariff by considering economic factors that are affordable for the community. Until now, the policy for setting electricity prices, which is under the authority of the government, has not been sufficient to cover the basic costs of PLN's electricity production, so that it causes an increase in the financial burden for PLN. The main factor in PLN's cost of production which is higher than the basic electricity tariff is dominated by the price of primary energy fuel for power generation (coal and natural gas). Meanwhile, the factors that make it difficult to increase the basic electricity tariff to cover the basic costs of production are influenced by the economic capacity of the community and the political will of the government.

Another government policy that is relevant to energy security efforts is the government's commitment to reduce greenhouse gas emissions. The government has ratified the Paris Agreement based on the Ministry of Environment and Forestry (LHK) policy through Minister of Environment and Forestry Regulation with Number P.15/MENLHK/SETJEN/KUM.1/4/2019, which limits the emission quality standards for thermal power plants. This policy is more aimed at power plants that are still in the planning stage, because for power plants that have been built and the construction stage this policy provides looser parameters. This emission quality standard policy will certainly become an obstacle for new power plants, especially those fueled by coal. Because the majority of PLTUs have emission quality standard parameters above those set by the government, in this case the Ministry of Environment and Forestry, fortunately, the parameters set by Ministry of Environment and Forestry are still looser than several other countries which also rely on coal as primary energy for power generation. Thus, it is estimated that only about 27% of PLN's power plants will be affected by this policy on emission quality standards for thermal power plants.

Discourse on Securing Coal and Natural Gas Energy Supply for Electricity

The increasing consumption of electrical energy in Indonesia, especially in the industrial and household sectors, is realized by the Indonesian government to increase the electrification ratio in order to meet the needs of electrical energy in the community. The low electrification in Indonesia is due to limited electrical energy infrastructure, especially in the eastern part of Indonesia and the remote and outermost islands of Indonesia. This increase in energy demand is needed to support the economic growth targeted in the 2014-2019 National Medium Term Development Plan (RPJMN), which can reach 8%. Regardless of whether this projection can be achieved or not, efforts for economic growth require an increase in electrical energy and the increase in electrical energy in Indonesia is still constrained by limited infrastructure.

These considerations became the main background for the Jokowi government in launching a 35.000 Megawatt power plant development program, with various supporting infrastructures. Until 2018 this infrastructure development was still far from the previously planned target, some of the main obstacles faced were related to the budget, so this infrastructure development scheme opened up a bigger role for the private sector by providing an opportunity for IPPs to build power plants with a larger capacity than PLN.

The potential for coal and gas owned by Indonesia is quite large in meeting domestic needs for power generation, this is the main consideration for the government to build electricity infrastructure by relying on primary energy from coal and gas. However, fluctuations in market prices and the dominance of exports from production have limited the supply of primary energy for coal and gas for power plants in Indonesia. To ensure domestic supply, especially coal primary energy, which dominates the need for fuel for power plants in Indonesia. Since 2009 the government has established a Domestic Market Obligation (DMO) to meet the domestic demand for coal. At the beginning of the DMO policy, the government only regulated the number of domestic obligations that had to be fulfilled by companies appointed by the Ministry of Energy and Mineral Resources, namely those with coal quality and specifications that matched domestic needs. The DMO policy since 2009-2017 stipulates that the selling price of coal for domestic needs remains in line with the price of coal in the global market. Not all coal producers produce coal whose specifications are in accordance with domestic needs, where some IUP companies that produce coal quality do not match domestic needs, especially the needs of Steam Power Plants in Indonesia.

In general, the government continues to carry out the discourse on the obligation to supply domestic needs at a benchmark price to ensure the affordability of coal for PLN to supply primary energy for power plants. The determination of a special price for coal is needed by PLN to guarantee the ability to buy coal from producers, amidst the threat of fluctuations in world coal prices. PLN wants the government to set the price for coal through a cost plus margin for domestic generators, this will guarantee PLN's purchasing power and avoid an increase in the cost of production, so that the implementation of a special price for coal for PLN's needs is considered able to reduce electricity prices.

This is what underlies the government's decision to set the selling price of coal for electricity to US\$ 70/ton in 2018. The consideration of the security of primary energy availability for the sustainability of the availability of affordable electrical energy for the community is considered more important than foreign exchange earnings through coal exports. coal, especially when world coal prices are very high. Meanwhile, those who view the availability of coal as an economic commodity see that the determination of the DMO and price benchmarks causes loss of profits for coal producers, and will ultimately have consequences for state revenues from national coal exports. The view that coal should be used as an export commodity causes a surge in production and the number of coal exports, this does not provide added value for domestic interests, especially PLN and industries that use coal a lot, because they are burdened by market prices.

The production target in 2018 reaches 485 million tons, which is the highest production target achievement so far. The government sees an opportunity to earn more foreign exchange, re-opening the production valve by adding 100 million tons, so that the total target reaches 585 million tons in 2018 (Decree of the Minister of Energy and Mineral Resources (Kepmen ESDM) No. 1924 K/30/MEM/2018). It is feared that the policy orientation on export commodities will have an impact on primary energy security, especially for power plants in Indonesia, because the impact of the high selling price of coal and the interest in foreign exchange exports will encourage coal sales abroad rather than domestically. In addition, the increase in production is also feared to cause over production, environmental damage and other social problems.

Coal and Natural Gas Primary Energy Security Policy

Buzan, Weaver and de Wilde emphasize that 'security is about survival', arguing that something becomes a security issue when the presence of an existential threat is 'perceived' as an existential threat to the referent object, so that the specific nature of the threat can be understood to justify the use of measures. necessary and may be extraordinary or 'emergency' to deal with it. They argue that in an effort to securitize a particular issue, it is necessary to take action to 'beyond the established rules of the game' regardless of whether the issue is framed within a political framework or outside the political aspect (Buzan et al., 1998).

The speech actions taken by the government encourage the use of coal and natural gas for economic security in primary energy for electricity in Indonesia, in relation to access to resources, finance, and markets necessary to maintain an acceptable level of state power. This effort is to maintain coal and gas as commodities to increase the country's foreign exchange, without compromising the security of electrical energy. At least there is a view that reflects the government's view, increasing production increases exports to increase the country's foreign exchange. The second perspective is to maintain the availability of coal and natural gas reserves by limiting production to meet domestic needs and then exporting to increase the country's foreign exchange.

As a securitization actor, the government defines the vulnerability of vital energy systems related to primary energy, coal and natural gas for electricity, based on

the availability and accessibility of domestic supplies. Coal and natural gas play an important role in electricity generation in Indonesia because they are the dominant primary energy replacing primary energy from petroleum which is dependent on imports. In addition, the use of demand for coal and natural gas has also increased for domestic industrial needs (processing and refining, fertilizers, cement, textiles and paper). The government also realizes that national resources have limitations where the lifespan of Indonesia's fossil fuel reserves is estimated to last for 69 years for coal (or it could increase to 250 years if the annual production level is equal to the total demand for domestic market obligation/DMO in 2020), and only 20 and 10 years for natural gas and oil (Ministry of Energy and Mineral Resources, 2021).

The government implements policies that regulate and secure the supply of coal and natural gas as primary energy that needs to be secured as part of the national interest. Electrical energy is a vital energy for national security and national economic growth, although electrical energy can be generated from several alternative energy sources, coal and natural gas are the main ones, so the government needs to take different political actions in this case the government has implemented DMO since 2017 In terms of primary energy security for natural gas, the government applies a price limit for power plants, as well as a policy not to export natural gas, to maintain domestic supply. Some of the ongoing exports are part of the contract that was agreed before the policy of reducing natural gas exports was implemented.

The implementation of the coal DMO has not fully received support, especially from coal entrepreneurs, this can be seen from the non-fulfillment of the DMO fulfillment target. In contrast to DMO sales, the value of coal export sales always exceeds the targeted plan. This has led to the need for tighter government control in the implementation of DMO policies, as it is always the focus of discussion in hearings with the legislature. The DMO policy is an energy security effort that represents the state's control over national resources as mandated in Article 33 of the 1945 Constitution of the Republic of Indonesia.

Domestic Market Obligation policies for coal and restrictions on natural gas exports reflect the securitization of primary energy for electricity. Policy makers think in terms of the availability and affordability of primary energy, coal and natural gas, which are very important for the stability and sustainability of national electrical energy and how to address the vulnerability of these supply chains in the short and medium term. Several other alternatives related to energy security, such as increasing the number of new renewable energy mixes, require a large amount of time and investment, so they are not realistic. Securitization carried out by the government by using and securing the supply of coal energy as the most possible and reliable form of primary energy security to meet the stability of electrical energy for the national interest.

Conclusion

Vulnerabilities related to primary energy availability are influenced by government policies in balancing domestic supply needs, and the potential for state financial revenues. However, related to the availability of coal, mining concessions are

dominated by the private sector, where the business permit is granted by the Minister of Energy and Mineral Resources, the Governor or the Regent/Mayor. The many actors involved in coal mining business make it difficult for the government to supervise production and sales. When the disparity in the selling price of domestic coal and exports is very large, the number of exports will increase, this causes the vulnerability of the availability of primary coal energy in Indonesia. The security of primary energy for coal and natural gas tends not to have a large vulnerability in terms of accessibility, especially for primary energy, coal, whose resources are relatively scattered in various parts of Indonesia. Although Indonesia has a large potential of natural gas resources, the limitations of exploration and with sources that tend to be concentrated in several areas make their accessibility more vulnerable than coal. The need for investment and technology in distributing gas-producing wells creates the vulnerability of natural gas in terms of accessibility in the supply chain for electricity in Indonesia. Meanwhile, in terms of the affordability of primary energy, coal and natural gas, the vulnerability of primary energy is relatively low, due to regulations regarding domestic pricing for electricity. However, the discourse to equate domestic prices with international markets, especially in the coal sector, will pose a threat to the affordability of electricity users in Indonesia. While related to the aspect of acceptability, the vulnerability of coal is greater than natural gas, the international regime's pressure to encourage carbon emission reductions can limit the use of coal either as primary energy for electricity or use for other domestic needs, thus threatening the economy of coal commodities for Indonesia. Meanwhile, natural gas is preferred as primary energy for transition from coal because it provides much lower emission levels than coal or oil.

This study also shows that there is a discourse in politicizing the issue of primary energy security, the debate between the economic interests of development that make primary energy a commodity, and the state's obligation to maximize primary energy as a domestic energy driver that ensures energy independence in Indonesia. The view of domestic interests that must be prioritized in ensuring energy security through the formulation of DMO policies that include volume and price, but pressure from economic interests has prompted a DMO discourse that only requires volume but prices follow market regulations. This debate shows that there is an agreement on DMO policy actions as an effort to secure primary energy, coal and natural gas, which must be carried out by the government consistently.

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