Political Review of the Development of New Renewable Energy Sources by European Countries at Tolo Wind Farm, Jeneponto

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Abstract. This research aims to see how the development of New Renewable Energy Sources by European countries at PLTB Tolo, Jeneponto is viewed from a political aspect. This research uses two approaches, Energy Politics to see the model of energy security and security as well as aspects of bilateral and multilateral relations between Indonesia and European countries, and Sustainable Development to see what aspects of sustainability can be contributed by this PLTB to the people who are beneficiaries of the existence of Wind Power Plants that are present around their environment. The results of this study show that European countries have contributed enough to the development of new renewable energy sources, especially in PLTB Tolo, Jeneponto. This happens because of the meeting of two complementary interests between European countries that have experience in developing technology in the field of new renewable energy that meets the rich natural potential in Indonesia. In addition, the significant contribution made by PLTB Tolo to the surrounding community as well as to the sustainable development program launched by the Government of Indonesia.

Keywords: Political Energy, Suistanable Development, New Renewable Energy.

1 Introduction

The development of renewable energy technology in the world is increasing rapidly in an effort to reduce greenhouse gas emissions and reduce dependence on increasingly scarce fossil fuels. One of the renewable energy technologies that is developing and building strong momentum is the Wind Power Plant (PLTB). The utilization of wind power as an environmentally friendly and sustainable energy source has begun to be carried out by many countries around the world, especially in Europe.

One of the wind farms being developed is the Tolo Jeneponto wind farm in Indonesia. It is part of Indonesia's renewable energy development program that aims to reduce dependence on fossil fuels and increase energy sustainability.

PLTB Tolo Jeneponto has an installed capacity of 72 Megawatts (MW) and is expected to produce 308 GWh of energy annually. In its development, the Tolo Jeneponto Wind Farm project involved the participation of countries in Europe, including Germany, Austria

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and the Netherlands. They assisted in providing wind power generation technology and equipment as well as the necessary financial support and financing. In addition, the project also involves cooperation between Indonesian private companies and foreign partners as project implementers.

The influx of foreign investors and the technological and financial support from these European countries certainly have a positive impact on the development of the Tolo Jeneponto Wind Farm. However, there are issues related to the influence of the involvement of European countries in the development of the Tolo Jeneponto Wind Farm, especially related to bilateral relations between Indonesia and these European countries. Several issues such as the domination of technology and resources by foreign parties, as well as the lack of certainty regarding the transfer of technology to Indonesian parties are serious concerns that need to be considered in the development of the Tolo Jeneponto Wind Farm.

This research aims to examine the political aspects associated with the involvement of European countries in the development of PLTB Tolo, Jeneponto and its impact on energy politics in Indonesia.

2 Theoretical Framework

2.1 Energy Politics

In the context of developing renewable energy sources, PLTB Tolo, Jeneponto, we need to look at it in four aspects. First is the concept of energy diplomacy refers to the definition stated in the national energy policy in government regulation No.79 of 2019, national energy security is a situation where the availability of energy sources and access for the wider community to obtain energy at affordable prices can be guaranteed for a long period of time, both under normal or business as usual (BAU) conditions, as well as during a crisis, and its use will not harm environmental sustainability [1]. The formulation of the Energy Diplomacy Concept refers to a grand strategy that can be used as the basis for foreign policy in the energy sector by taking into account the priority of national energy needs that are adjusted to efforts at the global level towards sustainable development. More specifically, through the concept of energy diplomacy, the government is expected to be able to overcome various challenges related to global energy supply.

Second, Tsutomo Toichi (2006) defines energy security as saving a stable energy supply that has become a policy goal of a country. Daniel Yergin defines energy security according to the position and interests of a country, namely the energy security of energy exporting and importing countries. For energy exporting countries, energy security can be interpreted as how to secure their energy supply to ensure financial income so that the sustainability of the country can be guaranteed. For importing countries, Daniel Yergin classifies importing countries into developed and developing countries. For developed countries, energy security can be ensured through energy diversification, trading and investment in energy-

producing regions. Meanwhile, for developing countries, energy security is defined as how to find solutions to address energy changes that can impact the country's economy [2].

Third, political analysis of energy needs to consider the impact of bilateral and multilateral relations. The involvement of European countries in the implementation of the Tolo Wind Farm may affect their relations with Indonesia as well as with other partners in the energy sector. This could include aspects of foreign policy, trade and technical cooperation.

2.2 Sustainable Development

The theme of Sustainable Development is the core of the discussion. There will be two important aspects that need to be looked at in this theme, namely: Energy Independence is the guaranteed availability of Energy by utilizing as much as possible the potential of domestic sources.

Sustainable energy is the sustainable provision of energy that meets the needs of the present without compromising the ability of future generations to meet their needs. The development of New Renewable Energy Sources is closely related to efforts to preserve the environment because the development of EBT is also carried out with the use of alternative fuels, such as biomass. Apart from being environmentally friendly, it is also clean of emissions and cheaper than other fuels, namely gas and oil.

3 Research Methods

Qualitative Research is well suited to explore and understand the complex political dynamics involved in the development of renewable energy sources in a particular region. By using Qualitative Research method, this research can explore in-depth understanding of how European energy politics influence the development of EBT in South Sulawesi, as well as its impact on local politics, environment and bilateral relations.

It is a study conducted by going directly to the field to observe the object being studied. The things that are done there can be in the form of interviews with related parties, as well as documentation of the required data related to the object of research in question.

Library research or what is often also called a literature study is an activity of studying and reviewing literature sources such as books, journals, articles, print media, online media and papers related to the problem under study.

4 Political Review Discussion

4. 1 Involvement of European Countries in Investment and Technology Cooperation

Indonesia has considerable potential for renewable energy, including 450 MW of mini/micro hydro, 50 GW of biomass, 4.80 kWh/m2/day of solar energy, 3-6 m3/second of wind energy and 3 GW of nuclear energy. Currently, the development of renewable energy refers to Presidential Decree No. 5/2006 on National Energy Policy. The Presidential Regulation states that the contribution of renewable energy to the national primary energy mix in 2025 is 17% with a composition of 5% biofuels, 5% geothermal, 5% biomass, nuclear, water, solar and wind power, and 2% liquid coal.

For this reason, the government will take steps to increase the installed capacity of Micro Hydro Power Plants to 2,846 MW by 2025, the installed capacity of Biomass to 180 MW by 2020, the installed capacity of Wind Power Plant (PLT Bayu) to 0.97 GW by 2024. The total investment absorbed in the development of renewable energy until 2025 is projected at 13,197 million USD.

In this context, the author will try to suggest the role and involvement of several European countries in the development of renewable energy sources at the Tolo Jeneponto Wind Farm. As we all know, the majority of European countries have become industrialized countries since the post-World War II, their large industrial needs make the use of energy also congruent with this. As a result, they also experience environmental problems due to the use of fossil fuels that are ahead of developing countries or new industrial countries such as Indonesia. So it is natural that their awareness of the development of New Renewable Energy sources is also more progressive than countries in other regions, including Indonesia.

This is the rationale why the author is conducting this research. The European countries that the author will try to raise are Denmark and Germany, considering that these two countries are among the most progressive countries in encouraging the development of New Renewable energy sources, not only in Europe, but also throughout the world.

Denmark and Indonesia have had diplomatic relations for 69 years. The opening of Indonesia-Denmark diplomatic relations took place in 1950 (Indonesian Embassy in Copehagen, 2017). Bilateral relations between Denmark and Indonesia are running smoothly in the sense that Indonesia and Denmark do not encounter serious problems that interfere with the relations between the two countries such as disputes or conflicts. Both countries maintain relations with each other as sovereign states. In 1950-2013, the relationship tended to be stable and there was no indication of a significant increase in relations, only limited to trade, political relations, and lending funds. Another indication of the lack of improvement in relations between Indonesia and Denmark is the lack of bilateral meetings between the two leaders. In 2013, Denmark and Indonesia established a Memorandum of Understanding (MoU) in the context of bilateral consultations between the two countries.

The beginning of the intensity of relations between Denmark and Indonesia occurred in 2015. The state visit of the Queen of Denmark, Margrethe II and Prince Consort Henrik, was made for the first time to Indonesia on October 21-24, 2015 to coincide with the momentum of 65 years of diplomatic relations between the two countries (Indonesian

Embassy in Copehagen, 2017). This visit was the first in the diplomatic history of Indonesia and Denmark since 1950. This visit was important for both countries because it discussed several issues of cooperation, the establishment of the Joint Declaration "Innovative Partnership for the 21st Century" and the signing of four Memoranda of Understanding (MoU).

There was a development of some cooperation that before 2015 was limited to the Danida program. Danida is a term used by Denmark as a development cooperation, its activities are under the Danish Ministry of Foreign Affairs, where Danida's work areas are fighting poverty and promoting human rights, and economic growth (Ministry of Foreign Affairs of Denmark, 2017). Cooperation between Denmark and Indonesia after 2015 became focused on priority areas of cooperation. The areas of cooperation that are currently prioritized are increasing two-way trade and investment, infrastructure development, maritime, tourism, transportation, renewable energy, agriculture and culture (Indonesian Embassy in Copehagen, 2017).

Denmark and Indonesia signed a Memorandum of Agreement with Indonesia represented by PLN and Denmark represented by the Danish Energy Agency and the Danish Embassy in Indonesia. The Memorandum of Agreement was signed on November 29, 2017. Although then the company appointed as the provider of Turbine blades is the Siemens company from Germany which in 2004 bought the Bonus Energy A/S company from Denmark.

As for Germany, Indonesia has been cooperating with this country for a long time, much earlier than Denmark. This can be seen from the great figures who have received education in Germany such as BJ Habibie who has studied in Germany since the 60s.

In the field of renewable energy development, Germany also contributes significantly in this regard. As in the field research that the author conducted last August, what the author found at PLTB Tolo, was that the windmill machines used at PLTB Tolo were machines made by the Siemens company based in Bremen, Germany. There are about 20 units of windmills installed and produce an installed electrical power of 72 MW.

4. 2 Impact of Wind Farm Development on aspects of Sustainable Development in Tolo Jeneponto

Vena Energy, is the company appointed as the Technical Implementer in the implementation of New Renewable Energy Development at the Tolo Jeneponto Wind Farm. From the aspect of sustainable development, there are several field findings that the author had found. Among them are:

1. The benefits of the Tolo Wind Farm project for the people of Jeneponto, generating 72 M of electricity connected to 7 villages and 2 sub-districts in Jeneponto, or around 149,000 houses connected to the PLN network.

2. The existence of PLTB Tolo also contributes to supporting the government in achieving the target of additional electricity capacity of 35,000 MW in 2019.
3. PLTB Tolo also contributes to reducing Greenhouse Gas Emissions (GHG) by 160,000 tons per year, when compared to Conventional Power Plants such as PLTU, PLTD or other Conventional Power Plants
4. PLTB Tolo also contributes to supporting the government to achieve the target of reducing GHG emissions by 29% in 2030
5. PLTB Tolo also contributes to supporting the government in realizing the renewable energy target of 23% of the total primary energy mix in 2025
6. PLTB Tolo also contributes to the creation of more than 300 jobs for local residents
7. PLTB Tolo also contributes to the construction of about 14 KM of new roads with a width of 5-8 M in villages around the project

From the seven field findings that the author found while conducting the research, it can be seen that the 7 findings above are positive contributions, but there are also other findings that should be used as findings that deserve critical notes because these findings have the potential to make a negative contribution to the surrounding community. These findings include:

1. The Propeller Sound Effect, we all know that the general effect of a wind power plant is that the propeller will emit a sound that is quite disturbing to the surrounding residents when the windmill is operating, the sound produced comes from the flapping wind of the rotating propeller. Although according to Vena Energy as the operator company, they claim that the results of propeller sound modeling show that the noise level arising when the windmill operates is not higher than the noise level of the surrounding environment and is still within the safe limits determined by applicable regulations.
2. Propeller Shadow Effect A spinning propeller will cast a flashing shadow effect when exposed to sunlight. This shadow effect mainly occurs in the morning and evening when the sun is not overhead. At these times, there is a possibility that the shadow effect will fall on residents' homes and will more or less disturb their comfort in their activities. However, the wind farm claims that this shadow effect is not harmful to health. In addition, the windmills have also been positioned in such a way as to produce minimal shadow effects. They conducted a survey, and the results showed that even if the shadow effect falls on people's houses, the shadow will fall at the back of the

house or in the part that has no windows so that it will not interfere with people's activities.

5. Conclusion

European countries have a significant role in the development of Renewable Energy Sources in Indonesia, including the Tolo Wind Power Plant (PLTB), Jeneponto. This is possible because they have had bad experiences related to the use of Conventional Energy from Fossil fuels that are not friendly to the environment, so they are moved to develop new renewable energy sources derived from non-fossil fuels.

On the other hand, Indonesia, which is located in the Equator region, has the potential for diverse and enormous renewable energy sources in terms of potential installed power capacity, but lacks some of the means needed to implement them, one of which is financial capability. It is at this point that these two interests meet and finally the realization of programs to develop new renewable energy sources, one of which is at PLTB Tolo, Jeneponto.

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