



THE ROLE OF CUSTOMS IN SUPPORTING THE DEVELOPMENT OF NEW AND RENEWABLE ENERGY IN INDONESIA

Risqi Nurika Fatha Hidayati^a, Marsanto Adi Nurcahyo^b

^a Polytechnic of State Finance STAN, Indonesia. Email: risqinurika@gmail.com (penulis berkorespondensi)

^b Polytechnic of State Finance STAN, Indonesia. Email: marsantoadin@gmail.com

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ABSTRACT

Perkembangan energi terbarukan di Indonesia mengalami pasang surut akibat hambatan teknologi dan kondisi perekonomian yang kurang memadai. Penelitian ini bertujuan untuk mengetahui peran kepabeanan dalam mendorong pengembangan dan pemanfaatan energi terbarukan serta mengetahui fasilitas kepabeanan yang diberikan untuk mendorong pengembangan dan pemanfaatan energi terbarukan. Dalam penelitian ini akan digunakan metode penelitian kualitatif. Data diperoleh dari wawancara dengan pihak terkait. Bea Cukai mempunyai peran penting dalam pengembangan energi terbarukan. Peran pertama adalah Direktorat Jenderal Bea dan Cukai sebagai regulator. Peran kedua yang dilakukan oleh Direktorat Jenderal Bea dan Cukai adalah menjadi fasilitator. Fasilitas tersebut berupa pengurangan pungutan pajak yaitu pembebasan bea masuk dan tidak dipungut pajak impor. Direktorat Jenderal Bea dan Cukai terbukti berperan dalam pengembangan energi terbarukan.

The development of renewable energy in Indonesia has experienced ups and downs due to technological barriers and inadequate economic conditions. This research has the aim of knowing the role of customs in encouraging the development and utilization of renewable energy and knowing the customs facilities provided to encourage the development and utilization of renewable energy. In this research, a qualitative research method will be used. data is obtained from interviews with related parties. Customs has an important role in the development of renewable energy. The first role is customs as a regulator. The second role performed by customs is to be a facilitator. The facility is in the form of a reduction in tax levies, namely exemption from import duties and not levied import tax. Customs agencies are proven to have a role in renewable energy development.

1. INTRODUCTION

1.1. Background of Study

A significant increase in world oil prices due to the prolonged geopolitical conflict between Russia and Ukraine could put potential pressure on Indonesia's fiscal, monetary, and overall economic conditions (Nizar, 2012). On the fiscal side, the increase in world oil prices increased in energy subsidies. Putri (2022) states that every increase in oil prices of USD 1 per barrel results in an increase in the state budget burden of IDR 4.17 trillion. Indonesia's economic dependence on world oil can also be seen from the national fuel consumption which reaches 1.4 - 1.5 million barrels per day, while Indonesia's oil production capacity can only reach 700,000 barrels per day (Sandi, 2022). The above conditions are the right moment to encourage the development and utilization of new and renewable energy in the country.

The development and utilization of renewable energy is very relevant to Indonesia's projected energy needs which will continue to increase in the next few years. Based on Government Regulation No. 22/2017, the National Energy General Plan (RUEN) projects that Indonesia's final energy needs will increase from 248.4 MTOE in 2025 to 641.5 MTOE in 2050, or an increase of around 158%. In addition, Indonesia's commitment to contribute more quickly to global emission reductions as affirmed at COP 26, requires Indonesia to diversify fossil energy with renewable energy (Kementerian Energi dan Sumber Daya Mineral, 2022).

Table 1 Indonesia's renewable energy potential

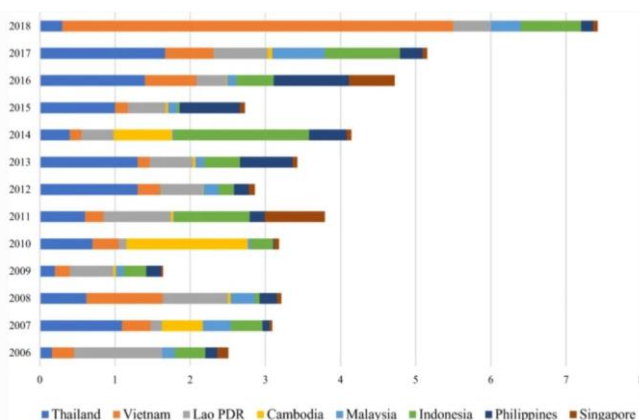
Renewable Energy Commodities	Total Potency (GW)	% Usage
Ocean	17,9	-
Geothermal	23,9	9,6%
Bioenergy	56,9	4,0%
Wind	154,9	0,1%
Hydro	95,0	7,0%
Sun	3.294,4	0,01%
Total	3.643,0	0,3%

Sumber: Dewan Energi Nasional (2022)

The development of renewable energy in Indonesia has experienced ups and downs due to technological barriers and inadequate economic conditions. Table 1 shows that the realization of renewable energy utilization is still relatively low compared to the existing potential. The paradigm regarding renewable energy is still not viewed in-depth and is not balanced with Indonesia's relatively large consumption of energy sources. The Indonesia Clean Energy Outlook 2019 report highlights the development of renewable energy development in Indonesia which is still hampered by the difficulty of renewable energy funding sources which are still considered high-cost low-return and the lack of government support for renewable energy development.

Figure 1 shows that investment growth in renewable energy in Indonesia experienced a negative investment trend from 2017 to 2018. Renewable energy investment in Indonesia amounted to only USD 0.8 billion in 2018, down from USD 1 billion in 2017.

Figure 1 Total Renewable Energy Investment of ASEAN Countries 2006-2018 in billion USD



Source: Vakulchuk et al. (2023)

Prawiro (2019) mentions that government support has an important role in the development of renewable energy as has been done by several countries in the world. In Thailand, the Government provides tax exemptions for renewable energy development. The Government of the People's Republic of China also provides incentives for the renewable energy development industry. This needs to be a concern considering that all countries in the world have renewable energy resources that are relatively equal and equally developable (Institute for Essential Service Reform (IESR), 2019). Each investor has the flexibility to choose which country can provide the most attractive return on investment and the least risk (Singh, 2015).

Now, the Indonesian government's efforts have begun to intensify the utilization and development of renewable energy in the country. In the industrial sector, one of the State-Owned Enterprises (SOEs) is seen doing a business deal with a Chinese construction company for renewable energy development (Purwanti, 2023). The Ministry of Energy and Mineral Resources is also trying to encourage the renewable energy market through Renewable Energy Certificate (REC) certification. REC is a means of recognizing the use of renewable energy for the private sector (Indrawan, 2023). Optimizing the use of renewable energy has also begun to be driven down to the smallest government units. Residents of Krendawahono Village in Central Java get their gas needs for free through a machine that is a program of the Central Java Government (Wibisono, 2023).

Previous research has shown the importance of renewable energy in maintaining energy security through the consumption of renewable energy which has an impact on the economy. Through their research in China, (Lei et al., 2022) suggested that the utilization of renewable energy plays a stronger role in promoting the national economy and encouraging the improvement of the industrial structure compared to coal energy. China itself is one of the countries known as a front-runner in the utilization of renewable energy, followed by Germany and India (Simamora et al., 2020). In addition, renewable energy also has a positive influence on a country's economic development (Zhe et al., 2021), especially through the manufacturing, electricity, transportation, warehousing, and service industries (Lei et al., 2022). Matei's (2017) research conducted on 34 OECD countries also reinforces that there is a two-way positive influence between the growth of Gross Domestic Product (GDP) through the utilization of renewable energy in the long term.

The lack of optimal utilization of new renewable energy can be caused by several obstacles. According to Arsita et al. (2021), Land acquisition problems, expensive investment costs, lack of access to efficient technology, lack of access to electricity transmission and distribution network infrastructure, lack of access to cheap funding, unreasonable selling prices or

economic prices, licensing processes, and cooperation schemes, and difficult international cooperation and support are a series of problems faced in the development of renewable energy.

Therefore, it is highly recommended that the use of renewable energy should be encouraged by domestic policymakers (Liu et al., 2021). The focus of policies to encourage renewable energy can focus on 3 (three) aspects, namely policy aspects, market incentive aspects, and national research and capacity building aspects (Firdaus, 2022).

In contrast to previous research, this article will reveal the role of customs in encouraging renewable energy development in Indonesia. In addition, the author also wants to further examine what customs facilities have been provided to encourage the development and utilization of renewable energy in Indonesia.

This research has the aim of knowing the role of customs in encouraging the development and utilization of renewable energy, and knowing the customs facilities provided to encourage the development and utilization of renewable energy. The author hopes that the results of this study can add insight and knowledge related to the role of customs. In addition, it is also to increase knowledge regarding what customs facilities are provided in encouraging the development and utilization of renewable energy.

2. LITERATURE REVIEW

2.1. Government's Role in Energy Development

The development of new renewable energy has become a major focus in many countries in response to the growing global energy demand and the negative environmental impact of fossil fuels. Governments play a crucial role in facilitating the transition towards the use of renewable energy through policies, regulations, and initiatives that support technology development and investment in the sector.

The government is the driving force in increasing the use of renewable energy. In the renewable energy sector, actions taken by the government will affect energy security, social welfare, energy supply, and climate change mitigation (White et al., 2013). This will also affect other sectors such as social and community welfare.

The government's role in directing an activity by preparing the implementation of development is known as the role of a regulator. The government issues regulations to order the administration of a program. The government as a policy maker must regulate public services (Minocha, 2007). Government regulation can improve the quality of the Company's products and services and ensure a level playing field in business activities.

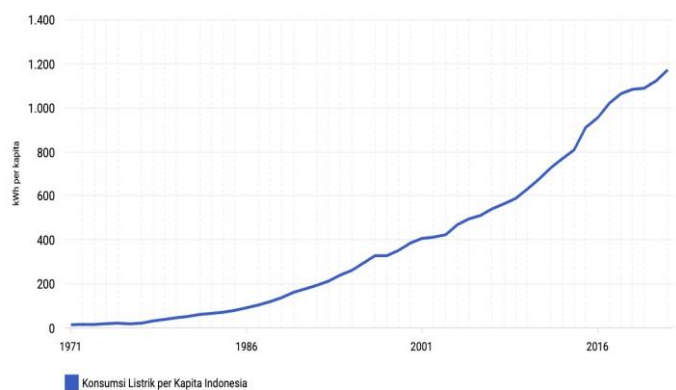
The government has the role of creating an environment that allows industry to operate effectively and efficiently. The government's role is as a facilitator, which is to create conditions conducive to the implementation of development. The government functions as a facilitator by providing incentives to the

industrial world, encouraging innovation, and preparing infrastructure (Wickham, 2006).

2.2. New Renewable Energy Development

The important role of energy in Indonesia's economy and the increasing energy consumption along with the rate of economic growth and population growth make Indonesia need to increase the supply of energy resources. (Boedoyo, 2012). Energy demand will increase by an average of 4.5% per year with the highest scenario of 5.6% per year and reach 2,980 million SBM in 2035 (Sugiyono, 2016).

Figure 2 Indonesia's Electricity Consumption 1971 - 2022



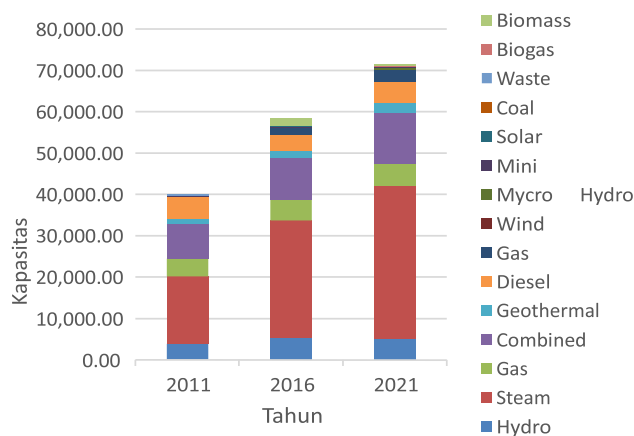
Sumber: (Ahdiat, 2023)

The high electricity demand follows the rapid economic progress in Indonesia over the past five decades. As shown in Figure, electricity consumption in 2022 is 1,173 kWh per capita, which is more than double that in 2012 (728.18 kWh per capita) (Ahdiat, 2023). Thus, the average growth rate of annual electricity consumption was 5.2% in the past decade. Meanwhile, as shown in Figure 3, the installed capacity of power plants increased from 39,915.97 MW in 2011 to 71,436.45 MW in 2021, resulting in an average of 34.32%.

Through Figure 3, coal-fired power plants are dominant with a share of 51.8% among other energy power plants. Indonesia's dependence on fossil fuel energy utilization needs to be reduced gradually considering the adverse effects of fossil energy on the environment and its contribution to the climate change phenomenon that has changed the paradigm of many countries (Setiawan, 2012). According to Sidik (2022), dependence on fossil fuels makes the role of exporting countries very important to maintaining the stability of the domestic energy supply. In addition, energy commodity prices are highly susceptible to fluctuations. Therefore, various efforts need to be made to encourage the utilization of efficient energy use accompanied by the development of alternative energy that is renewable resources

(Elinur et al., 2010) and environmentally friendly (Firdaus, 2022).

Figure 3 Development of Indonesia's Installed Capacity over a Decade



Source: Data from the Ministry of Energy and Mineral Resources

This energy is known as new renewable energy. New renewable energy is divided into 2 (two), namely new energy and renewable energy. New energy is energy developed from the results of research and technological development that cannot be included in the fossil energy group or renewable energy. Nuclear energy, plasma energy (magnetohydrodynamics), and fuel cell energy are some types of new energy (Pusat Studi Hukum dan Energi Pertambangan, 2022).

Meanwhile, renewable energy is a type of energy produced or found in nature that must be processed first using technology to convert energy to produce electrical or thermal energy. Renewable energy is divided into combustible renewables and non-combustible renewables. Electrical energy from water resources, waves or ocean currents (tide), geothermal, wind, and solar (solar cell) are non-combustible renewables. In contrast, biofuels and renewable municipal waste are combustible renewables (Pusat Studi Hukum dan Energi Pertambangan, 2022).

Talking about renewable energy, Indonesia is one of the countries that has a large enough renewable energy potential, diverse and spread throughout the region (Firdaus, 2022). Unfortunately, this potential has not been optimally utilized (Adjikri, 2017). Table 2 illustrates the potential and installed capacity of renewable energy in Indonesia.

Table 2 (Appendix I) shows that the utilization of Indonesia's new renewable energy potential has not reached fifty percent, so there are still many opportunities that can be developed (Lumbangol, 2017). Meanwhile, the development of the installed capacity of new renewable energy in Indonesia for a decade can be seen in Figure 4 (Appendix II). Figure 4 shows that the development of renewable energy installed capacity is still not significantly visible and tends to stagnate.

This should be noted by the government. By the mandate of Article 33 of the 1945 Constitution, the earth and water and the natural resources contained therein are controlled by the state and used for the greatest prosperity of the people. The government must ensure the availability of petroleum, natural gas, and coal energy as well as new renewable energy. This is because the role of energy is very important for increasing economic activity, in line with research (Helmy & Zulham, 2019) which shows that the availability of electricity affects economic growth in Aceh Province.

Ultimately, policies to support the energy transition are not possible without adequate financial resources and long-term investment. This is because the production of new and renewable energy requires a large infrastructure, new technologies that are not cheap, and large social investments (Mas'udi & Winanti, 2022). Hadi et al. (2021) mentioned that to increase investment in the development of new renewable energy, the government must improve the investment climate in Indonesia. In particular, some old rules that are considered obstacles for investors, such as benchmarking renewable energy tariffs against the electricity Cost of Supply (BPP) which provides uncertainty for investors and high local content requirements that burden developers due to substandard local manufacturing capacity and quality (Asian Development Bank, 2020) also considers that foreign investment restrictions are one of the barriers to the development of renewable energy projects in Indonesia. Balanced with the setting of ambitious clean energy targets, the Government should immediately pave the way for the industrial sector by creating investment-friendly regulations (Papathanasiou, 2022).

3. RESEARCH METHODOLOGY

In this research, a qualitative research method will be used. This method was chosen to generate information from the object under study. This research focuses on an in-depth understanding of a phenomenon that occurs.

The data used are primary data and secondary data. Primary data is obtained from interviews with related parties. The data was collected by the researcher while conducting the study. Interviews were conducted with officials at the head office of the Directorate General of Customs. In addition, secondary data was also collected as reinforcement for the primary data obtained. Secondary data can be in the form of reports, survey results, archival records, publications, and so on.

The data analysis method used is case study analysis. The analysis is carried out with the stages of organizing data, describing data, classifying data, interpreting data, and presenting and visualizing data.

4. RESULTS AND FINDINGS

Indonesia has developed policies related to renewable energy, as seen from the inclusion of the renewable energy Bill in the discussion at the House of Representatives (DPR). (Dewan Perwakilan Rakyat Indonesia, 2022) which aims to prepare a comprehensive legal framework device for the development of renewable energy (Suparwoto, n.d.). One of the promising renewable energy sources that the Indonesian government is focusing on is geothermal energy. Indonesia is one of the countries with the largest geothermal potential in the world. (Kementerian Koordinator Bidang Perekonomian, 2023). The Directorate General of State Assets has carried out an assessment of geothermal natural resources which shows that geothermal can reduce the use of fossil energy by USD 3.95 million / day, provide economic benefits to the community of USD 7.73 million, reduce carbon emissions by 11.6 million tons of CO₂ per year, reduce the impact of community environmental pollution by around 31%, and reduce energy transportation costs. (Ayundari, 2022).

The government's focus on geothermal energy development has been visible since 2010 through President Susilo Bambang Yudhoyono's speech at the World Geothermal Congress forum which announced Indonesia's ambitious target to double geothermal electricity production. (Setiawan, 2012). The Government's efforts can be seen in Figure 6 (Appendix III), which shows the development of geothermal energy installed capacity, which shows an upward trend from 2011-2021, although with a stagnant production trend.

However, geothermal energy also has some disadvantages, namely the very high operational costs of Geothermal Power Plants (PLTP) due to the large investment in exploration and production. Geothermal power plant development can also affect soil stability in the surrounding area (Sauni et al., 2022). The insignificant development of geothermal energy is also because geothermal energy has not been able to compete with relatively cheap fossil fuel plants (Direktorat Jenderal Energi Baru Terbarukan dan Konservasi Energi, 2020) Geothermal electricity prices tend not to be competitive compared to electricity prices from other energies (Meilani & Wuryandani, 2010).

Seeing the obstacles and challenges that exist, the Government has several strategies to increase resources and optimize geothermal development through action and collaboration (Kementerian Energi dan Sumber Daya Mineral, 2021). Based on these regulations, one of the roles of the Ministry of Finance in the development of renewable energy is to provide fiscal and non-fiscal incentives, in the form of providing customs facilities, and taxation to funding projects.

The Directorate General of Customs and Excise plays an important role in providing several customs facilities that can be utilized by industry in the development of renewable energy. This is because the

strategy of synchronizing regulations, certainty, and attractive investment schemes, simplifying licensing, and seeking incentives is needed to encourage national energy governance (Direktorat Fasilitas Kepabeanan, 2020).

One of the basic aspects of the formation of the Customs Law is the provision of incentives for trade and industry. The provision of these incentives is expected to benefit the growth of the national economy. The form of customs facilities provided by the Customs Law can generally be divided into two, namely:

- 1) Service Facilities, which are facilities related to services, provide faster, better, and cheaper services.
- 2) Fiscal Facilities, which are facilities related to fiscal matters, in the form of exemption from import duties, relief from import duties, refund of import duties, and suspension of import duties.

Facilities provided for companies engaged in the development of renewable energy are types of fiscal facilities in the form of exemption from import duties and taxes that are not levied for geothermal implementation activities and the development of renewable energy power plants in general. In addition, import duty exemption facilities are also provided related to the import of machinery using the capital investment facility.

Until 2023, DGCE has provided import duty exemption and PDRI exemption facilities for 33 companies engaged in the utilization of renewable energy. The 33 companies provided with facilities consist of companies engaged in the industries of Diesel Power Plant (PLTD), Solar Power Plant (PLTS), Gas Engine Power Plant (PLTMG), Hydroelectric Power Plant (PLTA), Steam Gas Power Plant (PLTGU), Waste Power Plant (PLTSa), Geothermal Power Plant (PLTP), Wind Power Plant (PLTB), Mini hydro Power Plant (PLTM), and Microhydro Power Plant (PLTMH). DGCE data shows that the provision of customs facilities provides import foreign exchange of IDR 62,926,464,256,897.00 for the country.

Other customs facilities provided are in the form of import duty exemptions and tax exemptions in the framework of imports of imported goods regulated through Minister of Finance Regulation No. 218 / PMK.04 / 2019 as amended by Minister of Finance Regulation No. 172 / PMK.04 / 2022 concerning Exemption from Import Duty and/or Tax Exemptions in the Framework of Imports of Imported Goods for Geothermal Implementation Activities. Through the Regulation, the Directorate General of Customs and Excise provides fiscal facilities in the form of import duty exemptions and/or no tax in the framework of imports on imported goods for geothermal implementation activities.

During 2017-2020, DGCE has companies with facilities to construct or develop of power plants that utilize renewable energy with a facility value of

Rp1,352,033,124,971.00 and an import value of USD 958,594,685.00.

Table 5 Facility Granting Data of Minister of Finance Regulation No. 66/PMK.04/2015 during 2017-2020

Year	Number Of Companies	Facility Value (Rp)	Import value (USD)
2017	10	205.059.585.255	159.327.465
2018	16	250.866.216.101	264.641.699
2019	23	394.956.257.631	237.111.947
2020	21	501.151.065.984	297.513.574
Total		1.352.033.124.971	958.594.685

Source: DGCE

There is a Minister of Finance Regulation No. 66/PMK.010/2015 regulating the Exemption of Import Duty on Imports of Capital Goods in the Context of Construction or Development of the Electric Power Generation Industry for the Public Interest. This regulation can be used as a legal basis for providing incentives to encourage the development or generation of new renewable energy electricity.

Table 6 Facility Provision Data of Minister of Finance Regulation No. 218/PMK.04/2019 to Minister of Finance Regulation No. 172/PMK.04/2022 during 2019-2021

Year	Number of Companies	Facility Value (Rp)	Import value (USD)
2019	8	51.684.974.729	26.159.056
2020	9	36.429.904.977	21.232.817
2021	6	11.977.978.612	5.686.422
Total		100.092.858.318	53.078.295

Source: DGCE

During 2019-2021, the facilities provided by DGCE to companies engaged in geothermal energy development amounted to IDR 100,092,858,318.00 with a company import value of USD 53,078,295 as shown in Table 6.

In addition to the above customs facilities, the Government provides import duties on machinery and equipment, goods, and raw materials for production. Import duty exemptions are also granted on raw materials for 2 years. If the company uses locally

produced machinery and equipment of at least 30 percent, then the import duty exemption can be increased by 2 years.

From the explanation of regulations in the development of renewable energy, it can be conveyed that the government has an important role in the development of renewable energy. Customs agencies as part of the government also take part in providing this role.

The first role is customs as a regulator. As public servants, customs agencies make policies related to the renewable energy program. DGCE as part of the Ministry of Finance regulates the existence of facilities in importing goods that support the development of renewable energy. The regulation is Minister of Finance Regulation No. 218 / PMK.04 / 2019 as amended by Minister of Finance Regulation No. 172 / PMK.04 / 2022 concerning Exemption from Import Duty and/or Tax-Free in the Framework of Import on Imported Goods for Geothermal Implementation Activities. The next one is Minister of Finance Regulation No. 66/PMK.010/2015 regulating the Exemption of Import Duty on Imports of Capital Goods in the Context of Construction or Development of the Electric Power Generation Industry for the Public Interest.

The second role performed by customs is to be a facilitator. This is proven by the customs agency providing facilities for the benefit of renewable energy development. The facilities are in the form of Import Duty Exemption and/or Tax-Free in the Framework of Imports on Imports of Goods for Geothermal Implementation Activities and Import Duty Exemption on Imports of Capital Goods in the Framework of Construction or Development of the Electric Power Generation Industry for Public Interest.

5. CONCLUSIONS AND RECOMMENDATION

Customs agencies are proven to have a role in renewable energy development. The role of customs agencies in encouraging renewable energy development is to become regulators and facilitators. The role of a regulator is revealed by making regulations governing the provision of import facilities in the context of renewable energy development. The role of a facilitator is realized through the exemption of import duties and taxes in the context of imports that are not levied related to renewable energy development.

Customs facilities provided in the context of renewable energy development are fiscal facilities. The facility is in the form of a reduction in tax levies, namely exemption from import duties and not levied tax in the context of imports.

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APPENDIX I

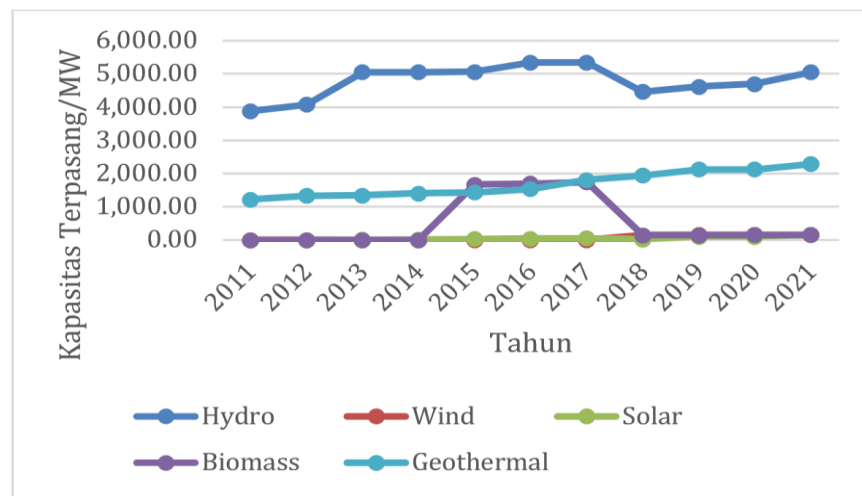
Table 2 Indonesia's Renewable Energy Potential and Installed Capacity

Commodity	Total Potential (GW)	Power Generation Capacity (GW)	% Utilization
Ocean	17,9	-	-
Geothermal	23,9	2,3	9,6%
Bioenergy	56,9	2,3	4,0%
Wind	154,9	0,2	0,1%
Hydro	95,0	6,6	7,0%
Sun	3.294,4	0,2	0,01%
Total	3.643,0	11,6	0,3%

Source: Dewan Energi Nasional (2022)

APPENDIX II

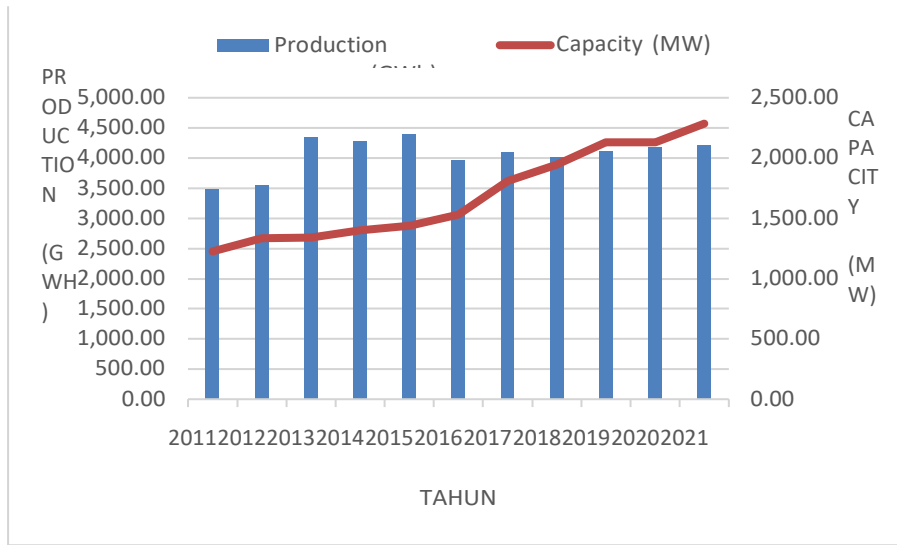
Figure 4 Development of New Renewable Energy Installed Capacity in Indonesia



Source: Data Kementerian ESDM

APPENDIX III

Figure 6 Development of Installed Capacity and Production of Geothermal Energy in Indonesia



Source: Data Kementerian ESDM