

The Role of Law in the Development of Renewable Energy and Energy Conservation

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Abstract: As a participant of the Paris Agreement, Indonesia is obliged to carry out its obligations to reduce emission levels in its territory. An effort carried out by the Government is through the development and utilization of new, renewable energy and energy conservation. However, the said policy has not been implemented optimally. This article aims to analyze the role of law in optimizing policies in the field of new, renewable energy and energy conservation. This article was prepared using normative legal study through statutory and conceptual approach. The results of this research show that the current legal system has not been able to support new, renewable energy and energy conservation policies. One of the problems faced is business licensing, which occurs as a result of problems in every aspect of the legal system. Therefore, the Government needs to establish policies through harmonization of regulations, increase capacity of the licensing system and its supporting elements, as well as increase the role of superiors and supervisors to create a business licensing system to achieve policy targets.

Keywords: Law; Policy; Renewable Energy; Energy Conservation.

1. Introduction

As one of the countries that ratified *the Paris Agreement to the United Nations Framework Convention on Climate Change (Paris Agreement)*, Indonesia has an obligation to participate in various efforts,¹ among them:²

- 1) Limit the rise of global temperatures to below 2° Celcius from pre-industrial levels; and
- 2) Limit the rise of global temperatures to below 1.5 ° Celcius.

In support mentioned efforts, Indonesia submitted Nationally Determined Contributions (NDC)³ which consisted of several periods. Indonesia's NDC target in the first period is to reduce emissions by 29% or 41% through international cooperation from normal business conditions in 2030.⁴ This amount has not changed much in terms of percentage when compared to the Government's target in 2010 which set an emission reduction target of 26% or 41% through international cooperation from normal business conditions in 2020.⁵ Through the NDC, the Government is committed to achieving the goals of the Paris Agreement through various policies, one of which is the energy sector, through the development and use of new, renewable energy and energy conservation (Energi

¹The convention was ratified by Indonesia through Law Number 16 of 2016 concerning Ratification of *the Paris Agreement to the United Nations Framework Convention on Climate Change* (State Gazette of the Republic of Indonesia of 2016 Number 204; Supplement to the State Gazette of the Republic of Indonesia Number 5939).

² Article 2 Section 1 (a) *Paris Agreement*.

³NDC is a document that contains a country's climate commitments and actions that are communicated to the world through *the United Nations Framework Convention on Climate Change*. Sustainable Madani Foundation, Nationally Determined Contribution, <https://komitmeniklim.id/nationally-determined-contribution-ndc/>, (accessed January 9, 2023).

⁴ Explanation of Law Number 16 of 2016 concerning Ratification of *the Paris Agreement to the United Nations Framework Convention on Climate Change*.

⁵Nur Masripatin, *NDC (Nationally Determined Contribution) Implementation Strategy* (Jakarta: Directorate General of Climate Change, Ministry of Environment and Forestry, 2017), 2.

Baru, Terbarukan dan Konservasi Energi (EBTKE))⁶ to support the gradual energy transition policy.⁷ Energy transition is a strategy to transform the energy sector from fossil-based to zero carbon.⁸

There is a clear relationship between the Paris Agreement and Government policies in the field of EBTKE. According to the Central Statistics Agency (BPS), the energy sector currently contributes 584,284,000 tonnes of CO₂e (55.62%) to Indonesia's total emissions in 2020.⁹ Although the Government has set targets through the NDC, the problem is the development and utilize EBTKE in fulfilling these obligations.¹⁰ The factors that are causing this to happen, are the following:¹¹

- 1) The price of fossil energy is still relatively cheaper than renewable energy (EBT);
- 2) The energy produced by EBT is fewer than that of fossil-based energy;
- 3) Lack of investors interest in the EBTKE sector; and
- 4) Inadequate EBTKE supporting infrastructure.

These problems above demonstrate that the development and utilization of EBTKE in Indonesia are not optimal. Therefore, this legal research is conducted to see how the role of law and policy supports the development and utilization of EBTKE. The aim is to analyze the extent to which law can play a role in optimizing policies in the field of EBTKE through statutory regulations. This study is conducted using the theory of justice and the legal system theory by Lawrence M. Friedman as the analytical tool.

2. Method

The methodology used is normative legal research methodology and supported by economic analysis. Methodologically, normative legal research is legal research that views law as a system of norms so that it is *sui generis* and has characteristics that are different from other fields of science because it has a normative, practical and prescriptive nature.¹² Meanwhile, the research approach is a statutory and conceptual approach. The statutory approach is a research approach carried out by analyzing statutory regulations. Meanwhile, the conceptual approach is a research approach carried out using legal principles and teachings developed and explained by experts.¹³

3. Results And Discussion

3.1 Emissions in the Energy Sector and Their Impact on Society

Discussion about emissions is inseparable from the presence of greenhouse gases (GHG) which cause an increase in air temperature of the atmosphere, thus making the earth warmer.¹⁴ Intergovernmental Panel on Climate Change (IPCC) data shows that globally, GHG emissions continue to increase from 1,313,879 thousand tons of CO₂ in 2017 to 1,592,708 thousand tons of CO₂ in 2018 and 1,843,085 thousand tons of CO₂ in 2019. This

⁶ Harris, "Energy Transition Towards Renewable Energy," *Presentation* (Jakarta: Directorate General of New, Renewable Energy and Energy Conservation, Ministry of Energy and Mineral Resources, 2021), 3.

⁷See Secretariat of the Cabinet of the Republic of Indonesia, "President Jokowi: Energy Transition Needs Support and Contribution of Developed Countries," <https://setkab.go.id/presiden-jokowi-transisi-energi-perlu-support-dan-kontribusi-dari-negara-forward/>, (accessed January 9, 2023).

⁸ Pamela Simamora, "Energy Transition: Developments and Prospects in Indonesia," *Exposure* (Jakarta: Institute for Essential Services Reform, 2019), 1.

⁹See Indonesian Central Bureau of Statistics, *Indonesian Environmental Statistics 2022* (Jakarta: Central Bureau of Statistics, 2022).

¹⁰ Regarding this, see Climate Action Tracker, "Indonesia," <https://climateactiontracker.org/countries/indonesia/targets/>, (accessed January 11, 2023).

¹¹See Commission VII of the People's Legislative Assembly of the Republic of Indonesia, *Academic Paper of the Draft Law on New and Renewable Energy* (Jakarta: DPR of the People's Representatives of the Republic of Indonesia, 2021).

¹²Salim HS, Erlies Septiana Nurbani, *Application of Legal Theory in Thesis and Dissertation Research* (Jakarta: Rajawali Press, 2014), 13; Quarter Point Tutik, *Introduction to Law* (Jakarta: Prestasi Pustakarya, 2006), 4; Lany Ramli, "Legal Research Methods," *Legal Research Methods (Part I)*, ed. Valerie JL Kriekhoff, Jakarta, Postgraduate Program, Faculty of Law, University of Indonesia, 2005), 106.

¹³Peter Mahmud Marzuki, *Legal Research* (Jakarta: Kencana, 2011), 93-95.

¹⁴Aristya Ardhitama, Yungsi Ikhwan Siregar, Nofrizal, "Analysis of the Influence of Greenhouse Gas Concentration on Increases in Air Temperature in Pekanbaru City and Padang City," *Journal of Environmental Law* 11, 1 (2017): 36.

number then fell to 1,050,413 thousand tons of CO₂ in 2020.¹⁵ However, these figures is in contrast to the total emissions resulting from the use of fossil-based energy which has continued to increase since 1970,¹⁶ which can be seen through the following figure:

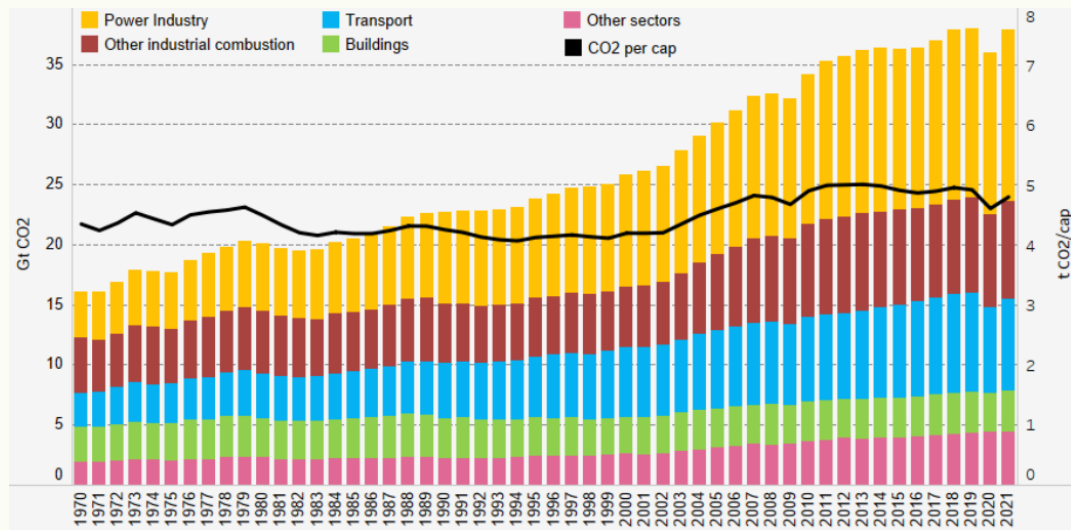


Fig 1: Increase in CO₂ Emissions due to the Use of Fossil Energy Since 1970

Source: Joint Research Center (JRC), 2022

The increase in the number of CO₂ emissions above is generally in line with the increase in the number of CO₂ emissions due to the use of fossil energy in Indonesia from 1990 to 2021. There are at least several sectors that are the main contributors, namely electrical power (power industry), industry (other industrial combustion), buildings and infrastructures, transportation, and other sectors with the following details:¹⁷

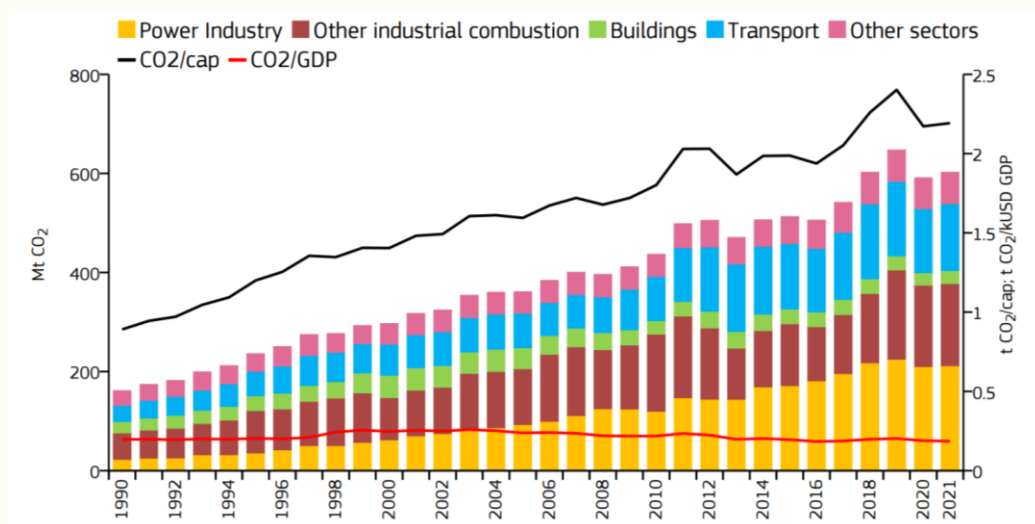


Fig 2: Increase in CO₂ Emissions due to the Use of Fossil Fuel Energy Since 1970

Source: Joint Research Center (JRC), 2022

¹⁵Secretariat General of Data and Information Center for Information Management, Ministry of Environment and Forestry, "Measuring and Reducing Greenhouse Gases," http://perpustakaan.menlhk.go.id/pustaka/home/index.php?page=detail_news&newsid=474#:~:text=If%20tr end%20increase%20gas%20house, chaos%20pattern%20weather%20and%20climate, (accessed January 11, 2023).

¹⁶Monica Crippa, "CO₂ Emissions of All World Countries," JRC/IEA/PBL 2022 Report (Luxembourg: Publication Office of the European Union, 2022), 9.

¹⁷Ibid., p. 127.

Table 1: Amount of CO₂ Emissions due to the Use of Fossil Fuel Energy in Indonesia

Year	CO ₂ Emissions (Mt CO ₂ / Year)	CO ₂ Emissions per Capita (Mt CO ₂ /cap/yr)	CO ₂ emissions per unit of GDP PPP (Mt CO ₂ /kUSD/yr)	Population (million)
2021	602,594	2,192	0.186	274,854
2020	591,319	2,172	0.189	272,223
2005	361,452	1,594	0.238	226,713
1990	161,640	0.891	0.196	181,437

Source: Joint Research Center (JRC), 2022

Table 2: Percentage Increase in Total CO₂ Emissions Due to the Use of Fossil Fuel Energy in Indonesia

Sector	2021 vs 1990	2021 vs 2005	2021 vs 2020
Electricity	+841%	+128%	+1%
Industry	+211%	+47%	+1%
Buildings and Infrastructure	+13%	-38%	+5%
Transportation	+319%	+93%	+4%
Other Sectors	+110%	+45%	+2%
Total	+273%	+67%	+2%

Source: Joint Research Center (JRC), 2022

The increase in the number of emissions due to the widespread use of fossil fuel energy shows the large contribution of the energy sector to climate change in Indonesia. This is understandable because the energy sector is one of the largest contributors to GHG emissions,¹⁸ considering that from an electricity perspective, demand for supply continues to increase.¹⁹ In fact, 86.95% of electricity production in Indonesia in 2020 comes from fossil fuels.²⁰ This condition certainly has made impact on Indonesia's achievement in the environmental quality index which averages only 67.96 in the 2017-2021 period as follows:

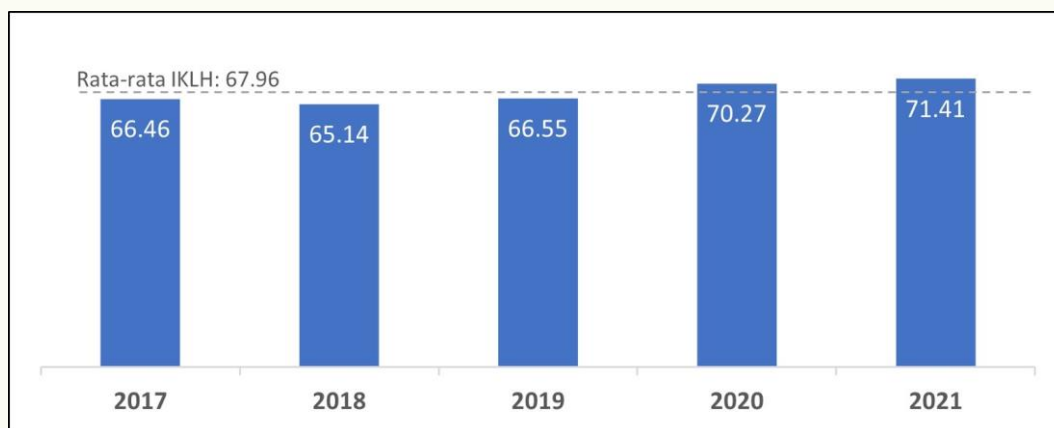


Fig 3: Indonesian Environmental Quality Index

Source: Various sources, Processed

Admittedly, the accumulation of water, air, land and peat ecosystem quality indices shows that Indonesia's current environmental conditions are still in an acceptable level. However, these conditions cannot

¹⁸ See the Central Bureau of Statistics, "Greenhouse Gas Emissions by Type of Sector," <https://www.bps.go.id/statictable/2019/09/24/2072/emisi-gas-rumah-kaca-menurut-tipe-sektor-thousand-ton-co2e-2000-2019.html>, (accessed January 11, 2023).

¹⁹Pamela Simamora, *Op. Cit.*, 6.

²⁰Dzulfiqar Fathur Rahman, "Nearly 87% of Indonesia's electricity will come from fossil fuels in 2020," <https://databoks.katadata.co.id/datapublish/2022/04/12/hampir-87-listrik-ri-berasal-dari-fossil-fuels-in-2020>, (accessed January 11, 2023).

rule out the negative impact of using fossil fuel energy to meet people's energy needs. Results from a research done by the International Institute for Sustainable Development (IISD) in 2012 shows that pollution arising from the use of fossil fuel energy can trigger various dangerous diseases, as follows:²¹

Table 3: Deaths Due to Outdoor Air Pollution in Indonesia Year 2012

Disease	Number of Deaths
Coronary heart disease	16,781
Strokes	36,527
Lung cancer	4,951
Chronic obstructive pulmonary disease	1,000
Acute lower respiratory tract infection	2,534

Source: World Health Organization (WHO)

From the table above, it appears that air pollution that occurred had an impact on the deaths of 61,793 people. This amount is equivalent to USD 36.5 billion (IDR 567 trillion)²² based on the calculation of value of statistical life (VSL),²³ assuming the life of 1 person is equal to USD 592,000.00.²⁴ The total costs do not include the costs of treating several diseases, such as the average cost of hospitalization for stroke patients, which is equivalent to USD 589 (Rp. 9.1 million) per case, whereas the average cost of acute lower respiratory tract infections is USD 1,125, - (Rp. 17.4 million) per person in one year. For inpatients who suffer lung cancer costs about USD 1,179 (Rp. 18.3 million) per year, and the average outpatient costs for asthma are USD 648.00 (Rp 10 million) per year.²⁵

3.2 The Role of Legislation in Supporting the Development and Utilization of New, Renewable Energy and Energy Conservation

Various efforts to develop and utilize EBTKE are not new in Indonesia. Based on research conducted by Hanan Nugroho, efforts have been initiated by the Government since the era of the Joint Business Group (Kelompok Usaha Bersama (KUBE)) or the Five Year Development Plan (Rencana Pembangunan Lima Tahun (REPELITA)). However, this policy did not have clear measures in achieving targets.²⁶

The government confirmed EBTKE as a new policy through Government Regulation Number 79 of 2014 concerning National Energy Policy²⁷ (Peraturan Pemerintah (PP) No. 79 of 2014). This can be signified by the existence of several terms. First, renewable energy sources are energy sources that are produced from sustainable energy resources if managed well.²⁸ Secondly, renewable energy as energy that comes from renewable energy sources.²⁹

The formulation of these terms is then followed by several arrangements, namely:

²¹Lourdes Sanchez, Bernadethe Luan, "Coal Health Costs in Indonesia," *GSI Report May 2018* (Manitoba: The International Institute for Sustainable Development, 2018), 2.

²² Assuming USD 1 = IDR 15,500. See Google Finance, "United States Dollar to Indonesian Rupiah," https://www.google.com/finance/quote/USD-IDR?sa=X&ved=2ahUKEwiUgOfNsr_8AhXm-DgGHdDbDUGmY0JegQIBxAc, (accessed January 11, 2023).

²³VSL is the local exchange rate (*tradeoff*) between the risk of death and money. The *tradeoff* level is a derivation of the concept of choice which aims to measure: (1) the level of *willingness to pay* for risk reduction; and (2) the marginal cost of improving security. Thomas J. Kniesner, W. Kip Viscusi, "The Value of Statistical Life," *Legal Studies Research Paper Series: Working Paper No. 19-15* (Tennessee: Vanderbilt University Law School, 2019), iii.

²⁴ See W. Kip Viscusi, Clayton J. Masterman, "Income Elasticities and Global Values of a Statistical Life," *Journal of Benefit-Cost Analysis*, Vol. 8, No. 2 (2017).

²⁵Lourdes Sanchez, Bernadethe Luan, *Op. Cit.*, 9.

²⁶ Hanan Nugroho, "Indonesia's Energy Transition: Old Promises Not Yet Fulfilled," *Bappenas Working Papers*, Vol. II No. 2, May 2019 (Jakarta: Bappenas, 2019), 213.

²⁷ State Gazette of the Republic of Indonesia of 2014 Number 300; Supplement to the Republic of Indonesia State Gazette 5609.

²⁸Article 1 Number 6 PP No. 79 of 2014.

²⁹ Article 1 Number 7 PP No. 79 of 2014.

- 1) Article 9 letter f number 1 regarding the target for the role of renewable energy in the optimal primary energy mix of at least 23% in 2025 and 31% in 2050 as long as the economy is met.³⁰
- 2) Article 10 Paragraph (1) letter a stating that meeting energy availability for national energy needs can be done by increasing the exploration and potential of renewable energy;³¹
- 3) Article 11 Paragraph (3) excluding the implementation of several national energy development priority principles in prioritizing renewable energy potential to reduce carbon emissions;³²
- 4) Article 12 Paragraph (1) letters a to e stating the use of renewable energy sources for electricity, home industry and transportation as part of the strategy for utilizing national energy resources;³³
- 5) Article 18 Paragraph (2) letter a stating that energy diversification can be implemented through accelerating the supply and utilization of various types of renewable energy sources;³⁴
- 6) Article 20 Paragraph (2) regulating the basic price of renewable energy;³⁵
- 7) Article 20 Paragraph (4) letter c stating that one of the ways for the Government to create an electricity market is by establishing a *feed in tariff mechanism* in determining the selling price of renewable energy;³⁶
- 8) Article 20 Paragraph (5) stating that the renewable energy market includes a minimum quota of electricity, liquid fuels and gas originating from new and renewable energy;
- 9) Article 21 Paragraph (2) letter b stating that subsidies are given if renewable energy is more expensive than the price of energy from fuel oil which is not subsidized;
- 10) Article 22 regulating Government and Regional Government support for the development, exploitation and utilization of renewable energy through fiscal and non-fiscal incentives;³⁷

³⁰Full text of the provisions of Article 9 letter f number 1 PP No. 79 of 2014 reads: "In order to fulfill the Energy Supply and Energy Utilization as referred to in Article 8, it is necessary to achieve the following national energy policy targets: [...] f. achieving an optimal Primary Energy mix: 1. in 2025 the role of New Energy and Renewable Energy will be at least 23% (twenty three percent) and in 2050 at least 31% (thirty one percent) as long as the economy is met;

³¹Full text of the provisions of Article 10 Paragraph (1) letter a PP No. 79 of 2014 reads: "Energy availability for national needs by: a. increasing resource exploration, and/or proven energy reserves, both from and New Energy and Renewable Energy."

³² Full text of the provisions of Article 11 Paragraph (3) PP No. 79 of 2014 reads: "The provisions as referred to in paragraph (2) are excluded for nuclear energy that is utilized with considering the security of the national Energy supply on a large scale, reducing carbon emissions and continuing to prioritize the potential of New Energy and Renewable Energy according to its economic value, and considering it as a last option with strict attention to safety factors."

³³Full text of the provisions of Article 12 Paragraph (1) letters a to e PP No. 79 of 2014 reads: "Utilization of national Energy Resources is carried out by the Government and/or Regional Governments referring to the following strategy: a. utilization of Renewable Energy Sources of the type of energy of water flows and waterfalls, geothermal energy, movement energy and sea layer temperature differences, and wind energy directed to electricity; b. utilization of Renewable Energy Sources of the type of solar Energy directed for electricity, and non-electric Energy for industry, households, and transportation; c. utilization of Renewable Energy Sources of the type of bio-fuel is directed to replace fuel oil, especially for transportation and industry; d. utilization of Renewable Energy Sources of the type of bio-fuel is carried out while maintaining food security; e. utilization of Renewable Energy from the type of biomass and waste is directed to electricity and transportation."

³⁴ The full text of the provisions of Article 18 Paragraph (2) letter a PP No. 79 of 2014 reads: "Energy diversification as referred to in paragraph (1) is carried out at least through: a. accelerating the supply and utilization of various types of New Energy Sources and Renewable Energy Sources."

³⁵ Provisions of Article 20 Paragraph (2) PP No. 79 of 2014 reads: "Renewable Energy Prices are set based on: a. calculation of the price of Renewable Energy with the assumption that it is to compete with the price of Energy from petroleum Energy Sources that applies in a certain period of time, which is calculated by excluding fuel subsidies; or b. calculation of rational Energy prices for the provision of Renewable Energy from local sources, in the context of securing Energy supply in certain areas which are remote locations, facilities and infrastructure have not been developed, are vulnerable to weather disturbances or are located near the border lines of the territory of the Unitary State of the Republic of Indonesia."

³⁶ Full text of the provisions of Article 20 Paragraph (4) letter c PP No. 79 of 2014 reads: "The government creates an electricity market through at least: [...] c. Application of the feed in tariff mechanism in determining the selling price of Renewable Energy."

³⁷ Provisions of Article 22 PP No. 79 of 2014 reads: "(1) The Government and Regional Governments provide fiscal and non-fiscal incentives to encourage the diversification of Energy Sources and the development of Renewable Energy. (2) The Government and Regional Governments provide incentives for the development, exploitation and utilization of Renewable

- 11) Article 23 Paragraph (2) letter d stating that one way to develop and strengthen energy infrastructure and community access to energy is to accelerate the provision of renewable energy supporting infrastructure;³⁸
- 12) Article 24 Paragraph (2) letter b stating that strengthening development of the energy industry is carried out by increasing the development of domestic renewable energy production and utilization equipment industries;³⁹ and
- 13) Article 27 Paragraph (5) letter a stating that strengthening funding can be carried out by the Government and Regional Governments by increasing the role of national banking in financing renewable energy development activities and energy saving programs.⁴⁰

In the process, this policy was then followed up by various statutory regulations, such as the Presidential Regulation Number 22 of 2017 concerning the General National Energy Plan⁴¹ (Peraturan Presiden (Perpres) No. 22 of 2017), the Minister of Energy and Mineral Resources Regulation Number 39 of 2017 concerning Implementation of Physical Energy Utilization Activities New and Renewable Energy and Energy Conservation (Minister of Energy and Mineral Resources Regulation No. 39 of 2017), and Regulation of the Minister of Energy and Mineral Resources Number 50 of 2017 concerning the Utilization of Renewable Energy Sources for Providing Electricity (Minister of Energy and Mineral Resources Regulation No. 50 of 2017). Apart from that, EBTKE is also mentioned in Presidential Regulation Number 18 of 2020 concerning the 2020-2024 National Medium Term Development Plan⁴² (Presidential Decree No. 18 of 2020). The existence of these various policies has an impact on the implementation of a number of laws, among them:

- 1) Law Number 30 of 2007 concerning Energy;⁴³
- 2) Law Number 30 of 2009 concerning Electricity⁴⁴ as amended by Government Regulation in Lieu of Law Number 2 of 2022 concerning Job Creation⁴⁵ (Peraturan Pemerintah Pengganti Undang-undang (Perppu) No. 2 of 2022);
- 3) Law Number 10 of 1997 concerning Nuclear Energy⁴⁶ as amended by Perppu No. 2 of 2022;

Energy, especially for small scale and located in remote areas until their economic value is competitive with conventional Energy. (3) The government provides incentives to energy producers and consumers who carry out energy conservation and energy efficiency obligations and provides disincentives to those who do not carry out energy conservation and energy efficiency obligations. (4) The government provides incentives for private institutions or individuals who develop core technologies in the fields of New Energy and Renewable Energy. (5) The provision of incentives by the Government and Regional Governments is carried out in accordance with the provisions of laws and regulations."

³⁸ The full text of the provisions of Article 23 Paragraph (2) letter d PP No. 79 of 2014 reads: "Development and strengthening of Energy infrastructure and access for the public to Energy as referred to in paragraph (1) is carried out by: [...] d. accelerating the provision of supporting infrastructure for New Energy and Renewable Energy."

³⁹ The full text of the provisions of Article 24 Paragraph (2) letter b PP No. 79 of 2014 reads: "Strengthening the development of the Energy Industry as referred to in paragraph (1) includes: [...] b. increasing the development of the domestic Renewable Energy production and utilization equipment industry."

⁴⁰ The full text of the provisions of Article 27 Paragraph (5) letter a PP No. 79 of 2014 reads: "Strengthening the funding referred to in paragraph (3) is carried out at least by: a. increasing the role of national banking in financing national oil and gas production activities, Renewable Energy development activities, and Energy-saving programs."

⁴¹ State Gazette of the Republic of Indonesia of 2017 Number 43.

⁴² State Gazette of the Republic of Indonesia of 2020 Number 10.

⁴³ State Gazette of the Republic of Indonesia of 2017 Number 96; Supplement to the State Gazette of the Republic of Indonesia Number 4746.

⁴⁴ State Gazette of the Republic of Indonesia of 2009 Number 133; Supplement to the State Gazette of the Republic of Indonesia Number 5052.

⁴⁵ State Gazette of the Republic of Indonesia 2022 Number 238; Supplement to the State Gazette of the Republic of Indonesia Number 6841.

⁴⁶ State Gazette of the Republic of Indonesia of 1997 Number 23; Supplement to the State Gazette of the Republic of Indonesia Number 3676.

- 4) Law Number 4 of 2009 concerning Mineral and Coal Mining⁴⁷ has been amended several times,⁴⁸ most recently by Perppu No. 2 of 2022;
- 5) Law Number 39 of 2014 concerning Plantations⁴⁹ as amended by Perppu No. 2 of 2022;
- 6) Law Number 32 of 2014 concerning Maritime Affairs⁵⁰ as amended by Perppu No. 2 of 2022;
- 7) Law Number 23 of 2014 concerning Regional Government⁵¹ as amended several times⁵², most recently by Perppu No. 2 of 2022;
- 8) Law Number 17 of 2019 concerning Water Resources⁵³ as amended by Perppu No. 2 of 2022;
- 9) Law Number 22 of 2009 concerning Road Traffic and Transportation⁵⁴ as amended by Perppu No. 2 of 2022;
- 10) Law Number 27 of 2007 concerning Management of Coastal Areas and Small Islands⁵⁵ as amended several times,⁵⁶ most recently by Perppu No. 2 of 2022;
- 11) Law Number 41 of 1999 concerning Forestry⁵⁷ as has been amended several times,⁵⁸ most recently by Perppu No. 2 of 2022; And
- 12) Law Number 32 of 2009 concerning Environmental Protection and Management⁵⁹ as amended by Perppu No. 2 of 2022.

The existence of legal support in terms of statutory regulations indicate the Government's great attention to the development of EBTKE in Indonesia. However, current legal developments show that current efforts to optimize EBTKE potential have not been able to fulfill Indonesia's obligations under the Paris Agreement. This is due to the fact that the actual problem comes from the licensing aspect, which has undergone changes following the publication of Government Regulation Number 24 of 2018 concerning Electronically Integrated Business Licensing Services (PP No. 24 of 2018).

⁴⁷ State Gazette of the Republic of Indonesia 2009 Number 4; Supplement to the State Gazette of the Republic of Indonesia Number 4959.

⁴⁸ Previously with Law Number 3 of 2020 concerning Amendments to Law Number 4 of 2009 concerning Mineral and Coal Mining (State Gazette of the Republic of Indonesia of 2020 Number 147; Supplement to the State Gazette of the Republic of Indonesia Number 6525).

⁴⁹ State Gazette of the Republic of Indonesia 2014 Number 308; Supplement to the State Gazette of the Republic of Indonesia Number 5613).

⁵⁰ State Gazette of the Republic of Indonesia of 2014 Number 294; Supplement to the State Gazette of the Republic of Indonesia Number 5603).

⁵¹ State Gazette of the Republic of Indonesia of 2014 Number 244; Supplement to the State Gazette of the Republic of Indonesia Number 5587).

⁵² Previously with Law Number 2 of 2015 concerning Stipulation of Government Regulations in Lieu of Law Number 2 of 2014 concerning Amendments to Law Number 23 of 2014 concerning Regional Government to Become Law (State Gazette of the Republic of Indonesia of 2015 Number 24; Supplementary Sheet Republic of Indonesia Number 5657) and Law Number 9 of 2015 concerning the Second Amendment to Law Number 23 of 2014 concerning Regional Government (State Gazette of the Republic of Indonesia of 2015 Number 58; Supplement to the State Gazette of the Republic of Indonesia Number 5679).

⁵³ State Gazette of the Republic of Indonesia of 2019 Number 190; Supplement to the State Gazette of the Republic of Indonesia Number 6405.

⁵⁴ State Gazette of the Republic of Indonesia of 2009 Number 96; Supplement to the State Gazette of the Republic of Indonesia Number 5025.

⁵⁵ State Gazette of the Republic of Indonesia of 2007 Number 84; Supplement to the State Gazette of the Republic of Indonesia Number 4739.

⁵⁶ Previously with Law Number 1 of 2014 concerning Amendments to Law Number 27 of 2007 concerning Management of Coastal Areas and Small Islands (State Gazette of the Republic of Indonesia of 2014 Number 2; Supplement to State Gazette of the Republic of Indonesia Number 5490).

⁵⁷ State Gazette of the Republic of Indonesia of 1999 Number 167; Supplement to the State Gazette of the Republic of Indonesia Number 3888.

⁵⁸ Previously with Law Number 19 of 2004 concerning Stipulation of Government Regulations in Lieu of Law Number 1 of 2004 concerning Amendments to Law Number 41 of 1999 concerning Forestry into Law (State Gazette of the Republic of Indonesia of 2004 Number 86; Supplement to the State Gazette Republic of Indonesia Number 4412).

⁵⁹ State Gazette of the Republic of Indonesia 2009 Number 140; Supplement to the State Gazette of the Republic of Indonesia Number 5059.

As stated previously, the problems in developing and utilizing EBTKE essentially revolve around problems related to the effectiveness of EBT which cannot yet match fossil fuel energy, the lack of investor interests, and the availability of infrastructure. However, when explored further, these various problems all lead to matters concerning licensing problems. This is because problems related to the effectiveness of EBTKE and supporting infrastructure can be minimized if the Government can attract and gain investor interests. Not only to invest capital in the EBTKE sector, but also in other supporting sectors. However, in order to attract investors, the Government needs to provide various kinds of support, in which one of them being support for licensing, due to the fact that:

- 1) Poor administration of permits/licensing disrupts business certainty;
- 2) The existence of business uncertainty increases business risk;
- 3) Business risk ultimately increases investor costs, hence making lower expectations of the investment.

Currently, permits are held electronically through the online single submission (OSS) system, however, this is different from OSS version 1.0⁶⁰ which is based on PP No. 24 of 2018. Licensing is now implemented through a risk-based OSS system (*OSS Risk Based Approach / OSS RBA*) based on Perppu No. 2 of 2022 and Government Regulation Number 5 of 2021 concerning Implementation of Risk-Based Business Licensing⁶¹ (PP No. 5 of 2021). The presence of OSS RBA can ideally solve licensing problems in Indonesia through the following means:

- 1) Adjustment in the licensing mechanism with the provisions of Article 12 Perppu No. 2 of 2022.⁶²
- 2) Secondly, issuance of business permits in a more effective and simple manner.
- 3) Thirdly, supervision of business activities that is transparent, structured and accountable that is in accordance with statutory provisions.⁶³ However, the implementation of this system in its development creates new problems as well, due to problems with components of the legal system as a whole (legal substance, legal structure and legal culture)⁶⁴ in Indonesia.

From the aspect of legal substance, for example, the implementation of OSS RBA is currently not supported by regulatory harmonization between laws and regulations, both horizontally⁶⁵ and vertically.⁶⁶ Apart from that, the implementation of licensing through the RBA OSS is currently not supported by a clear division of tasks and functions between the Central Government and Regional Governments in administering licensing in the EBTKE sector,⁶⁷ including various problems, among them:⁶⁸

- 1) Current EBTKE arrangements have not been carried out through implementing laws and regulations;

⁶⁰ In November 2019, OSS version 1.0 was replaced with OSS version 1.1 to address various problems and weaknesses in OSS version 1.0. Legalitas.org, "The History of OSS (Online Single Submission)," <https://legalitas.org/tulisan/History-oss-online-single-submission>, (accessed January 11, 2023).

⁶¹ State Gazette of the Republic of Indonesia of 2021 Number 15; Supplement to the State Gazette of the Republic of Indonesia Number 6617.

⁶² Provisions of Article 12 of Perppu no. 2 of 2022 reads: "Further provisions regarding risk-based Business Licensing as intended in Article 7, Article 8, Article 9 and Article 10, as well as supervision procedures as intended in Article 11, are regulated in Government Regulations."

⁶³ Article 3 PP No. 5 of 2021.

⁶⁴ Based on Lawrence M. Friedman's legal system theory. Legal substance is the statutory regulations and laws that exist in society. Meanwhile, legal structures are institutions that play a role in the legal institutionalization process so that the law can live in society. Legal culture is the state of mind and social forces that determine how the law is used, avoided and misused. See Muhamad Erwin, *Philosophy of Law: Critical Reflections on Indonesian Law and Law (in the Dimensions of Ideas and Applications)* (Jakarta: Rajawali Press, 2015), 164; Lawrence M. Friedman, *American Law: an Introduction* (New York: W.W. Norton, 1998), 5; Lawrence M. Friedman, *Legal Systems: A Social Science Perspective*, trans. M. Khozim (Bandung: Nusa Media, 2011), 5 and 8.

⁶⁵ For example, PP No. 5 of 2021 with Government Regulation Number 22 of 2021 concerning Implementation of Environmental Protection and Management (State Gazette of the Republic of Indonesia of 2021 Number 32; Supplement to State Gazette of the Republic of Indonesia Number 6634).

⁶⁶ See the Examiner's Bulletin, "Inconsistency in Regulations Hampering the Issuance of OSS Business Permits," <https://wartapemeriksa.bpk.go.id/?p=37426>, (accessed January 12, 2023).

⁶⁷ Grita Anindarini, Etheldreda ELT Wongkar, Mahawira S. Dillon, "Two Crucial Issues in the New and Renewable Energy Bill," *Policy Brief 2 March 2021* (Jakarta: Yayasan Indonesia CeraH, Indonesian Center for Environmental Law, 2021), 10.

⁶⁸ See *Ibid.*, 11-12.

- 2) Policies view new energy and EBTKE the same way. In fact, terminologically new energy also involves other types of energy that are not included in the NRE category; and
- 3) There is no specific regulatory concept regarding credible and transparent supervision. In fact, this aspect is one of the fundamental weaknesses in the administration of licensing and the implementation of laws and regulations.

In addition to the problem of legal substance as stated above, problems in implementing the OSS RBA to support the EBTKE sector are also visible in the legal structure aspect. Based on research, it appears that the EBTKE licensing mechanism can be pursued through two licensing applications, namely the OSS RBA and the EBTKE Business and Operational Licensing Application and the Geology Ministry of Energy and Mineral Resources (Ministry of Energy and Mineral Resources),⁶⁹ The existence of two applications for such licensing applications shows that the current EBTKE licensing mechanism has not been fully implemented. Although the system from the Ministry of Energy and Mineral Resources application is connected to the OSS RBA, it still causes confusion for investors in applications submissions. Apart from that, the current implementation of OSS RBA still has various problems, among them:

- 1) The OSS RBA application still experiences frequent interruptions and is difficult to access;
- 2) Lack of capacity of licensing organizers due to:
 - a. The applicant still has to coordinate face-to-face with the relevant Ministries and Institutions for several licenses;
 - b. System administrators and institutions related to OSS RBA often do not comprehend problems faced by applicants.
- 3) There is no adequate support system to help applicants who have difficulty using OSS RBA.

Several problems in the legal structure aspect are also supported by various legal culture issues in the form of the attitude of organizing personnel who do not provide solutions, emphasize applicants to always visit the relevant Ministries/Institutions for answers, and tend to pass the applicant's problems on to other personnel or institutions.

Existence of these various problems makes licensing a problem that needs to be resolved so that the development and utilization of EBTKE can be optimized, and to be able to achieve the Government's targets as stated in Presidential Decree no. 18 of 2020, Regulation of the Minister of Environment and Forestry Number 16 of 2020 concerning the Strategic Plan of the Ministry of Environment and Forestry for 2020-2024 (Peraturan Menteri Lingkungan Hidup & Kehutanan (Permen LHK) No. 16 of 2020), and the Strategic Plan of the Directorate General of Electricity of the Ministry of Energy and Mineral Resources for 2020-2024 (Rencana Strategis (Renstra) Directorate General of Gatrik 2020-2024) as follows:

Table 3: Development Targets Related to EBTKE in 2024

No	Target	Variable	Baselines (2019)	Targets (2024)
1	Installed capacity of EBT Generators	Number of EBT Generators installed	10.29 Gw	19.20 Gw
2	Realization of Quality Environment and Forests and Response to Climate Change	Environmental Quality Index	66.55	69.74
3	Increased achievement of emission reduction and intensity of Greenhouse Gas emissions against the Baseline	GHG Emission Reduction Percentage	23.46	27.27

⁶⁹ See Ministry of Energy and Mineral Resources, "EBTKE and Geology Business and Operational Licensing Application," <https://perizinan.esdm.go.id/ebtke/>, (accessed January 12, 2023).

4	Building the Environment, Improving Food Air Quality Index Security and Climate Change	86.57	84.5
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Source: Presidential Decree no. 18 of 2020, Minister of Environment and Forestry No. 16 of 2020, Strategic Planning of the Directorate General of Gatrik 2020-2024

That being said, a policy needs to be implemented to fix licensing problems in the field of EBTKE. In the aspect of legal substances, harmonization of regulations needs to be carried out by involving stakeholders, especially relevant Ministries and Institutions as regulators. Apart from that, amendments to current laws and regulations also need to be made to clarify the direction of Government policy in the field of EBTKE. Not only in the context of EBT as part of new energy, but also a monitoring mechanism. This can be supported by increasing legal certainty in regulations regarding EBTKE which are currently still scattered in various laws and regulations. One of which is through the establishment of a law regarding EBTKE accompanied by relevant supporting regulations. However, it should be noted that these efforts still need to be carried out by paying attention to several statutory regulations governing policy making such as Law Number 12 of 2011 concerning the Formation of Legislative Regulations⁷⁰ as has been amended several times,⁷¹ most recently with Law Number 13 2022 concerning the Second Amendment to Law Number 12 of 2011 concerning the Formation of Legislation⁷² (Undang Undang Pembentukan Peraturan Perundang-undangan (UU PPP)) and Presidential Decree No. 18 of 2020.

Furthermore, in the legal structure aspect, a system integration between the RBA OSS with the EBTKE Business and Operational Licensing Application and the Ministry of Energy and Mineral Resources' Geology needs to be carried out. This is needed to synergize and align with the online single system concept in administering licensing. Apart from that, adjustments to the OSS RBA system need to established a digital-based licensing system that is user friendly. This effort can be done in various ways, among them:

- 1) Increase system capacity so that it can be accessed by many users simultaneously;
- 2) Rearranging the update schedule for OSS RBA to improve the accessibility of the licensing system, especially on working days and hours;
- 3) Increasing the capacity of system administrator personnel to be better able to answer user questions; and
- 4) Changing and improving the capabilities of the OSS system to better enhance assistance of licensing applicants who are experiencing difficulties.

In addition to the various efforts above, a policy also needs to be implemented to address matters of legal culture through the role of superiors in supporting the implementation of the duties of OSS RBA personnel. This does not only apply in the context of the Investment Coordinating Board (Badan Koordinator Penanaman Modal (BKPM)) as the manager of the RBA OSS system,⁷³ but also institutions who handle technical licensing issues. In addition, it is also necessary to improve the internal and external oversight function of licensing personnel in order to minimize various irregularities in the permit application process by applicants. All of this is needed to create a licensing system that can support the development and utilization of EBTKE in Indonesia. This is because, in addition to support the fulfillment of Indonesia's obligations in the Paris Agreement, optimization of the EBTKE sector needs to be carried out to reduce the adverse effects of using fossil-based fuel energy on society, and to

⁷⁰ State Gazette of the Republic of Indonesia of 2011 Number 82; Supplement to the State Gazette of the Republic of Indonesia Number 5234.

⁷¹ Previously with Law Number 15 of 2019 concerning Amendments to Law Number 12 of 2011 concerning the Formation of Legislation (State Gazette of the Republic of Indonesia of 2019 Number 183; Supplement to the State Gazette of the Republic of Indonesia Number 6398).

⁷² State Gazette of the Republic of Indonesia 2022 Number 143; Supplement to the State Gazette of the Republic of Indonesia Number 6801.

⁷³See the Investment Coordinating Board, "Government Optimists Transferring OSS to BKPM," <https://www.bkpm.go.id/id/publikasi/detail/berita/government-optimistic-transfer-oss-ke-bkpm> , (accessed date January 12, 2023).

support the achievement of development targets and various other related policies such as Carbon Economic Value (Nilai Ekonomi Karbon (NEK))⁷⁴ and *Renewable Energy Certificates* (REC).⁷⁵

4. Conclusion

Optimizing the development and utilization of EBTKE needs to be carried out by the Government to support the achievement of several targets. Firstly, Indonesia's obligations need to be fulfilled under the Paris Agreement. Secondly, negative impact of the use of fossil fuel energy on society needs to be reduced. Thirdly, achievement of development targets and various other policies related to EBTKE need to be implemented. However, these efforts cannot be accommodated due to problems regarding permit administration based on Government Regulation in Lieu of Law No. 2 of 2022 and Government Regulation number 5 of 2021.

To overcome problems related to legal substance, harmonization of licensing regulations in the EBTKE sector needs to be carried out. These efforts can be supported by aligning policies and strengthening aspects of legal certainty in regulations regarding EBTKE. In the context of the legal structure, it is necessary to increase the capacity of the RBA OSS system, personnel, and support systems. This can be followed by improving legal culture through increasing the role of supervision in order to create a licensing system that is user friendly and in line with Government policies.

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⁷⁴NEK is the value of each unit of greenhouse gas emissions resulting from human activities and economic activities. NEK is a measure of the value of GHG emissions to encourage *the polluters pay principle* in environmental protection and management. Amanda Megarani, "What is Carbon Economic Value?" <https://www.forestdigest.com/detail/2062/nilai-ekonomi-karbon#:~:text=Nilai%20ekonomi%20karbon%20adalah%20nilai,polluters%2Dpay%2Dprinciple%22> (accessed January 12, 2023).

⁷⁵ REC is an instrument that represents the renewable attribute of every MWh of electricity produced by EBT-based power plants. Its function is as: (1) Instrument for recognition of the use of renewable energy; (2) As a procurement option to fulfill transparent EBT use targets to fulfill transparent EBT use targets; and (3) Encouraging the growth of the national EBT market. PT PLN (Persero), "Renewable Energy Certificate (REC)," <https://layanan.pln.co.id/renewable-energy-certificate/formasi> , (accessed January 12, 2023).

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