



Acceleration of Clean Energy Use Based on the 2015 Paris Agreement

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Abstract: *The adverse effects of climate change are a major threat to human life and the environment. Indonesia's participation in the 2015 Paris Agreement encourages changes in people's lifestyles to become environmentally friendly. Indonesia commits to reducing emissions before 2030. The purpose of this study is to describe energy regulation within the scope of the provisions of national law and international law and to examine Indonesia's efforts to accelerate the use of clean energy based on the 2015 Paris Agreement. The approach used is normative. The data collection technique is through conventional literature searches and online and analyzed with qualitative data analysis because the data will be presented in a narrative-descriptive manner, not in numerical or numerical form. The results of the research show that the regulation of energy within the scope of national legal provisions is generally regulated in the Law of the Republic of Indonesia Number 30 of 2007 concerning Energy. This law contains general problems of energy resources in Indonesia from philosophical, juridical, and sociological aspects. This law has the function of a legal umbrella for other laws and regulations that will regulate energy-related matters. Indonesia's efforts to accelerate the use of clean energy based on the 2015 Paris Agreement, namely by ratifying the 2015 Paris Agreement into Law of the Republic of Indonesia Number 16 of 2016. To accelerate the use of new and renewable energy as clean energy, the Indonesian government issued a Draft Presidential Regulation that regulates the purchase of new and renewable energy. clean energy electricity and several other efforts.*

Keywords: *Clean Energy, Law, Paris Agreement, Indonesia*

1. INTRODUCTION

The 2015 Paris Agreement contains provisions regarding the Nationally Determined Contribution (NDC) which is expected to be implemented in 2020. This agreement is a form of the United Nations framework on climate change which is the latest commitment for



countries in the world.

International cooperation within the framework of the 2015 Paris Agreement would be able to increase the effectiveness of global climate change management. Indonesia's participation in the 2015 Paris Agreement is a manifestation of the implementation of the Nawa Cita which is a priority for the Indonesian government, namely a form of the increasing global role which mandates to increase international cooperation in overcoming global problems that threaten humanity, including climate change.

Climate change is one of the consequences of global warming. The consequences of global warming are global temperatures that tend to increase, ecological disturbances, and social and political impacts (Sulistiyono, 2012). The world is working to achieve zero carbon emissions by 2050 through the energy sector to prevent the adverse effects of climate change. Indonesia commits to reducing emissions before 2030 (Aisya, 2019).

The commitments outlined in ratification law from the Paris Agreement in 2015 shows the seriousness of the Indonesian government in dealing with the issue of change climate the world and through The ratification of the Paris Agreement in 2015 means that Indonesia will also take part in thinking about the future for Indonesia nation and the world by contributing globally in holding speed greenhouse gas emissions to use and scale down the destructive impact of a changing climate that happened in the future in Indonesia.

Indonesia continues to ratify the 2015 Paris Agreement, even though there are practices that so far are not by the 2015 Paris Agreement *Intended Nationally Determined Contribution (INDC)*. The agreement states that each participating country must set emission reduction targets. The target should be increased every 5 years. But in fact, Indonesia's emission levels have been steadily increasing due to deforestation and forest degradation. The government only allocates 40.75% of the budget for the 2015-2019 climate change control program funding framework of the total required funds.

The use of new and renewable energy must be the main concern of the Indonesian government not only as an effort to reduce the use of fossil energy but also to realize clean or environmentally friendly energy (Jaelani, 2017). Renewable energy sources such as solar power, wind power, hydropower, geothermal power, and so on have attracted a lot of attention as an alternative to fossil fuels because toxins and pollutants are not produced by these sources. For this reason, this energy source came to be known as clean energy.

There is a rapid increase in energy use in line with economic growth and population growth (Abduh, 2006). The use of clean energy can bring double benefits, especially for developing countries, the use of clean energy can reduce climate change (Pramudiyono, 2020). Clean energy can also be used continuously without fear of reducing deposits as is the case with conventional energy sources, clean energy also will not reduce natural resources or damage the environment, also causing little effect on health.

The problems discussed in this study are energy regulation within the scope of national legal provisions and international legal provisions, and Indonesia's efforts to accelerate the use of clean energy based on the 2015 Paris Agreement.

2. RESEARCH METHOD

This type of research is library research. Library research is research that is carried out through



library data collection or research carried out to solve a problem that relies on a critical and in-depth study of relevant library materials (Yusuf, 2014). This research includes library research because data sources can be obtained from libraries or other documents in written form, both from journals, books, and other literature.

The approach used in this research is normative. A normative approach is a literature-based approach, which focuses on the analysis of primary legal materials and secondary legal materials (Octorina & Efendi, 2018). This study uses a normative approach because this study aims to provide a detailed and systematic explanation, corrects and clarifies a legal rule that regulates certain legal fields (Octorina & Efendi, 2018).

Sources of data used in this study in the form of secondary data. Secondary data is data obtained from official documents, books related to the object of research, research results in the form of reports, theses, theses, dissertations, and laws and regulations (Bagong, 2007). This study uses secondary data as the main reference because it is already available in the form of writing in books, scientific journals, and other written sources.

This research data collection technique was carried out through conventional literature searches and *online*. Conventional literature searches are carried out by searching for library materials, purchasing books, journals and attending scientific activities (*seminars*) (Marzuki, 2011). Searching *online* is done by *searching* on the internet. This research uses a conventional literature search technique and *online* because it is useful for getting a theoretical basis by reviewing and studying books, laws, regulations, documents, reports, archives, and other research results both printed and electronic related to the object of study.

The data analysis method used in this research is qualitative. Qualitative data analysis is the process of organizing and sorting data into patterns, categories, and basic units of description so that themes can be found that are presented in narrative form (Soekanto, 2008). This study uses qualitative data analysis because the data will be presented in a narrative-descriptive manner, not in numerical or numerical form.

3. DISCUSSION

1. Energy Regulation within the Scope of National Legal Provisions and International Law Provisions

Energy is a resource that can be used to carry out various process activities including fuel, electricity, mechanical energy, and heat (Daryanto, 2007). The definition of energy is contained in the Law of the Republic of Indonesia Number 30 of 2007 concerning Energy, which is stated in Chapter I of General Provisions Article 1 Paragraph (1), namely energy is the ability to do work which can be in the form of heat, light, mechanics, chemistry, and electromagnetics. Normatively, the Law of the Republic of Indonesia Number 30 of 2007 concerning Energy is the only law that specifically regulates energy.

Energy sources are one of the natural resources (Daryanto, 2007). Nature has provided a free and abundant source of energy to be utilized by all living things. However, to support the activities of human life on earth, humans also need to manage and develop the energies that are already available in nature, to meet their life needs. The role of energy is very important for increasing economic activity and national security so that energy management which includes its supply, utilization, and exploitation must be carried out in a fair, sustainable,



optimal, and integrated manner (Azhar & Satriawan, 2018).

Almost all human life depends on energy. Energy is needed for industrial activities, transportation, households, and other things. For this reason, almost all countries in the world need to plan, manage and utilize energy based on the types of energy available. Planning, management, utilization, and supervision of energy, both domestically and imported. The more advanced and large a country is, the more its energy needs increase, both energy sourced from fossils and new and renewable energy sources (Azhar & Satriawan, 2018). The higher the energy demand of a country, ideally the higher the availability.

Entering globalization which began in the 1980s, energy consumption has increased in line with the increasing needs of life, the rapid development of technology and accompanied by the increase in the economic value of various goods and the main thing is the increase in the population. Countries that adopt any economic system that is said to be capitalist, socialist, or mixed will always protect them it is in the interests of their countries to provide sufficient energy supply for their national interests so that any means are carried out for their purposes (to maintain energy availability) for now and for the future (Suteki, 2013).

The national goals stated in the preamble to the 1945 Constitution of the Republic of Indonesia, one of which is to promote public welfare as aspired by the founders of the country, have not been implemented optimally (Atmasasmita, 2010). The formation, regulation, or preparation of norms in-laws and regulations, both in the national legislation program (Prolegnas) to the implementation of a legal product in the energy sector, has not reflected the prioritization of the interests of the people (pro-people) (Wignyosoebroto, 2013). This is exacerbated by the fact that the earth, water, and all the wealth contained therein are controlled by foreign companies, as many as hundreds of foreign companies control around 80 percent of Indonesia's natural wealth in the form of oil, gas, coal mining and others.

politics in the context of realizing energy sovereignty can generally refer to the Law of the Republic of Indonesia Number 30 of 2007 concerning Energy. The consideration of the law contains general problems of energy resources in Indonesia, both from the philosophical, juridical, and sociological aspects. This shows that the general policy of energy sovereignty law (at the national level) is contained in this law. Thus the Energy Law can be used as a reference (has an umbrella function) for other laws and regulations that will regulate energy-related (Hakim, 2020).

The problem of complex energy availability should have been overcome by the Law of the Republic of Indonesia Number 30 of 2007 concerning Energy. The stipulation for considering (the consideration) states that energy resources are natural resources as mandated in Article 33 of the 1945 Constitution of the Republic of Indonesia controlled by the state and used for the greatest prosperity of the people.

The role of energy is very important for increasing economic activity and national security so that energy management which includes its supply, utilization, and exploitation must be implemented in a fair, sustainable, optimal, and integrated manner. It is no less important than the reserves of non-renewable energy resources are limited, so there is a need for diversification of energy resources so that energy availability is guaranteed. This is reinforced by the Law of the Republic of Indonesia Number 3 of 2014 concerning Industry, where there is an obligation to carry out energy management (Supriyanto & Sulistiyono, 2017).

The implementation of energy management in Indonesia is regulated through the Regulation



of the Minister of Energy and Mineral Resources Number 14 of 2012 concerning Energy Management. Users of energy sources and energy users in the regulation who use energy sources or energy sources equal to 6000 tons of oil equivalent per year are required to implement energy management. Energy management is carried out by appointing energy managers, compiling energy conservation programs, conducting periodic audits, implementing recommendations for energy audit results, and reporting on the implementation of energy management annually to the minister, governor, or local regent or mayor (Hakim, 2020).

Law of the Republic of Indonesia Number 30 of 2007 concerning Energy has links with many laws related to the energy and environmental sectors including Law of the Republic of Indonesia Number 30 of 2009 concerning Electricity, Law of the Republic of Indonesia Number 21 of 2014 concerning Geothermal, Law of the Republic of Indonesia Number 10 of 1997 concerning Nuclear Energy, Law of the Republic of Indonesia Number 22 of 2001 concerning Oil and Gas, Law of the Republic of Indonesia Number 4 of 2009 concerning Mineral and Coal, Law of the Republic of Indonesia Number 6 of 1994 concerning Ratification Climate Change Convention, Law of the Republic of Indonesia Number 23 of 2014 concerning Regional Government. The many linkages of laws and regulations in the energy sector often lead to the potential for overlapping, disharmony among existing laws and regulations (Marbun, 2018).

In environmental management, we are dealing with the law as a means of fulfilling our interests. To protect the sustainability and preservation of the environment, a law is needed to regulate the use of the environment by the community. Law is a tool that contains values and concepts regarding justice, truth, and expediency.

Environmental law exists to regulate the management, utilization, and protection of the environment. The goal is that community benefits do not damage nature and can achieve sustainable development. Since the issuance of the Law of the Republic of Indonesia Number 32 of 2009 concerning the Protection and Management of the Environment which replaced the Law of the Republic of Indonesia Number 23 of 1997, the function as the main law is attached to the Law of the Republic of Indonesia Number 32 of 2009. Law of the Republic of Indonesia Number 32 of 2009 is said to bring about fundamental changes in the regulation of environmental management in Indonesia today (Hakim, 2020). If we look further, there are some significant differences in the arrangements between the Law of the Republic of Indonesia Number 23 of 1997 and the Law of the Republic of Indonesia Number 32 of 2009.

The slow development of the law of energy can be seen in the two traditions of different legal systems. The slow development in the tradition of the *Anglosaxon legal system* can be observed through court institutions which are slow and do not develop new principles, which can be developed from various problems that enter the courtroom and can become decisions (Heffron & Ronne, 2018). The slow development of energy law is also caused by the Continental European tradition of the legislature with its legislative function failing to take prompt and appropriate action to support the current energy transition.

In essence, the principle of access to modern energy services is too late and is only being realized in developing countries as important. Access to modern energy services is important to be available in people's lives. Developing countries only realized the importance of public access to modern energy in 1986. Through a World Commission Report on Environment and Development (Brundtland Report) (Heffron & Ronne, 2018).



Regarding the principle of careful, rational, and sustainable use of natural resources, this is very much explained in various forms of existing international agreements and resolutions, such as the Rio Declaration on Environment and Development (1992), Stockholm Declaration (1972), United Nations Framework Convention on Climate Change (UNFCCC), Kyoto Protocol (1997), The Paris Agreement (2015), the goals of the *Sustainable Development Goals* (SDGs) adopted by the United Nations General Assembly (2015), which are a continuation of the Millennium Development Goals (MDGs) (2000) and the *Europe 2020 Strategy*. In essence, all these international agreements and resolutions explain at the same time emphasize that there are limits to the use of natural resources contained in the land, water, or oceans and air. This is closely related to the use of non-renewable energy.

2. Indonesia's Efforts to Accelerate the Use of Clean Energy Based on the 2015 Paris Agreement

The 2015 Paris Agreement describes a new chapter of environmental action that has been followed by four signs, namely setting a clear path for future emissions, recognizing the risks of climate impacts, shifting finance towards a low carbon, sustainable development with a strong foundation (Marbun, 2018).). The slow action from developed and developing countries to reduce greenhouse gas emissions has an impact on increasing temperatures on earth.

In early 2015 the air temperature broke a global record with an average temperature increase of 0.85°C. It is estimated that the temperature on earth has the potential to increase by 4°C if countries do not take action to deal with climate change. Therefore, the 2015 Paris Agreement received the support of 195 countries and 89 countries have ratified, including Indonesia (Marbun, 2018).

The 2015 Paris Agreement aims to reduce the global temperature rate to below 2°C or 1.5°C above pre-industrial levels in this century based on the *Intended Nationally Determined Contributions*. In addition, the 2015 Paris Agreement is directed at increasing the ability to adapt to the negative impacts of climate change towards climate resilience and low-emissions development without threatening food production and preparing funding schemes for low-emissions and climate-resilient development.

The advantage of the 2015 Paris Agreement is that it completely targets to stop the temperature rise taking into account the different circumstances and capabilities of each country. Transparency

(*transparency*) and capacity building (*capacity building*) are two additional elements so that they become the main consideration and the modalities of government action at the local level are more effective and efficient. The 2015 Paris Agreement will effectively enter into force 30 days after ratification by at least 55 countries party to the convention whose total emissions are at least 55 percent of the total global greenhouse gas emissions (Judge, 2017).

Indonesia occupies the third position as a contributor to greenhouse gas emissions after the United States and China. Indonesia's greenhouse gas emissions are estimated to grow by 2% per year and reach 2.80 billion tons in 2020 and 2030 will reach 3.60 billion tons. In addition, Indonesia is in the third position of the largest contributor of carbon dioxide (CO₂) worldwide. As much as 60% to 70% of greenhouse gas emissions result from deforestation and land use experts (Marbun, 2018).

As one of the subjects of international law and a dominant factor in decision-making, Indonesia



took a step forward, namely by ratifying the 2015 Paris Agreement on October 5, 2015. Indonesia's action was to immediately ratify the 2015 Paris Agreement without waiting for other countries to do so. because the government wants to play a role in making decisions related to the implementation of the 2015 Paris Agreement so that Indonesia becomes a key actor in the 2015 Paris Agreement and Indonesia's interests can be realized.

After ratifying the Paris Agreement in 2015, Indonesia is obliged to set the target of *Intended Nationally Determined Contributions*. The proposed *Intended Nationally Determined Contributions* target until 2030 is 29% by focusing on the energy, food, and water resources sectors as well as the islands in Indonesia. The Government of Indonesia is more focused on the energy, waste, and forestry sectors of the two action scenarios *Nationally Determined Contributions*. This is because these sectors contribute the largest *output* of greenhouse gas emissions. To achieve the *Nationally Determined Contributions action target* that has been set, the government has created the Indonesian National Carbon Accounting System or the *Indonesian National Carbon Accounting System* (Marbun, 2018).

Indonesia is one of the largest emitters of greenhouse gases in the world, so its efforts towards decarbonization are of global concern. The UK and Indonesia through the Ministry of Energy and Mineral Resources have also collaborated with the Mentari or Low Carbon Energy Partnership. The British government in this collaboration provides facilities and consultations in the transition to clean energy so that Indonesia's efforts related to climate change and the use of renewable energy are monitored by the British government (Judge, 2017).

Must ensure a global warming mitigation roadmap in the countdown to the twenty-sixth Conference of The Parties, one of which is by encouraging the use of new and renewable energy. The utilization of new and renewable energy as an environmentally friendly energy source will be accelerated by creating new markets for new and renewable energy. The transition from fossil-based energy to new and renewable energy is needed because it is environmentally friendly. The key to optimal utilization of new and renewable energy is more competitive prices.

Currently, the availability of energy in Indonesia is no longer able to support the increasing energy needs. Broadly speaking, this phenomenon occurs due to several factors, including the decline in energy production in Indonesia from year to year, as well as the depletion of Indonesia's reserves of resources. In addition, apart from the availability of renewable resources, until now, Indonesia still focuses on non-renewable energy resources derived from fossils, such as oil, coal, and natural gas, as energy fuels. It is not impossible if this dependence will result in the scarcity of energy sources (Marbun, 2018).

supply of energy in Indonesia is oil, coal, and gas, which are included in the non-renewable energy category, while renewable energy, such as water, geothermal, and biofuels, does not reach 5% per year. This indicates that Indonesia is still lacking in exploiting renewable energies. If viewed from their availability, these renewable energies have great potential to be developed as infrastructure for the country's economic development, because of their unlimited nature.

Another problem is energy consumption in Indonesia, which is increasing every year. Population growth is a factor that affects the level of energy consumption (Karcher & Jochem, 2015), including in Indonesia. The higher the population growth, the higher the energy needs that must be met along with the emergence of various commercial and industrial buildings



(Hakim, 2017).

The new market for new and renewable energy is carried out through the *Renewable Energy Base Industry Development (Rebid)* and *Renewable Energy Base On Economic Development (Rebed)* programs (Saa & Thollander, 2017). This program is designed to accelerate the use of new and renewable energy in industrial areas, special economic zones and to support local economic zones in remote, outermost, and frontier areas.

To accelerate the use of new and renewable energy, the government will issue a Presidential Regulation Draft that regulates the purchase of new and renewable energy electricity by PT. PLN (Persero) also creates new and renewable energy markets through *renewable energy base industry development programs* and *renewable energy based on economic development*. which aims to accelerate the use of new and renewable energy in industrial areas and special economic zones and to support local economic zones in Indonesia's 3T regions, namely remote, outermost, and frontier.

The use of new and renewable energy must be the main concern of the Indonesian government not only as an effort to reduce the use of fossil energy but also to realize clean or environmentally friendly energy. Renewable energy sources such as solar power, wind power, hydropower, geothermal power, and so on have attracted a lot of attention as an alternative to fossil fuels because toxins and pollutants are not produced by these sources (Marbun, 2018). To achieve the common targets under the 2015 Paris Agreement, as recommended by the IEA (International Energy Agency), the pace of global transition to clean energy will need to be four to six times faster than it is today. Meanwhile, the *carbon tracker* calculates that the cessation of coal energy use needs to be tripled by closing one PLTU unit per day until 2040. Potentially Indonesia is in a very good position as a superpower in clean energy. Indonesia has abundant clean energy potential, through solar and wind power. Referring to India's experience, it takes a strong commitment from the Indonesian government to spur the development of clean energy. India today is the country with the fourth-largest PLTB (wind) capacity and has one of the largest solar panel fields in the world, namely PLTS Kamuthi (648 MW capacity) on an area of 10 km².

Indonesia has entered a pilot phase, as it begins its transition to clean and sustainable energy. One of them is by reducing the use of coal and other fossil energy. By growing the clean energy market and maximizing the implementation of bioenergy, accelerate the development of waste-based electricity in twelve cities, biomass utilization and waste as raw material for cofiring existing Steam Power Plants (PLTU), implementation of mandatory B30, as well as *green refinery development programs* and encouraging regional-based geothermal development through the *Flores Geothermal Island program* whose target is to fulfill the basic load of electricity on Flores Island. Optimizing the indirect use of geothermal energy to reduce the risk of exploration by developers, the Government has also made geothermal development through *government drilling* namely exploration activities carried out by the government (Marbun, 2018).

Of course, this effort is not enough, ambitious steps are needed to accelerate the transition to clean energy, especially the ratification of a law on clean energy that will provide a legal umbrella for maximizing the utilization of clean energy potential. It is never too late, with the ambition and strong will of the government along with the business sector and civil society, Indonesia's contribution to reducing the systemic threat of climate change will be the awaited



portfolio at the twenty-sixth *Conference of The Parties* in Glasgow (Marbun, 2018).

The agreement is not the end of the struggle against climate change because what is more important is the world's commitment to its implementation. It is necessary to have a common understanding within the country regarding the results of the 2015 Paris Agreement so that they can be formulated in harmonized policies at the national and sub-national levels to realize Indonesia's contribution in controlling global warming.

4. CONCLUSION

Based on the above discussion, it can be concluded that the regulation of energy within the scope of national legal provisions is generally regulated in the Law of the Republic of Indonesia Number 30 of 2007 concerning Energy. This law contains general problems of energy resources in Indonesia from philosophical, juridical, and sociological aspects. Law of the Republic of Indonesia Number 30 of 2007 concerning Energy has a legal umbrella function for other laws and regulations that will regulate energy-related. Indonesia's efforts to accelerate the use of clean energy based on the 2015 Paris Agreement, namely by ratifying the 2015 Paris Agreement into Law of the Republic of Indonesia Number 16 of 2016. To accelerate the use of new and renewable energy as clean energy, the Indonesian government issued a Draft Presidential Regulation that regulates the purchase of new and renewable energy clean energy electricity and several other efforts.

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