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THE INFLUENCE OF THE PARIS CLIMATE AGREEMENT ON ENERGY AND ENVIRONMENTAL POLICY REFORM IN INDONESIA

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Abstrak. *Climate change is a global challenge that is driving countries to reform their energy and environmental policies, including Indonesia. Before the Paris Climate Agreement was ratified in 2016, Indonesia's policies were sectoral, fragmented, and highly dependent on fossil energy, with minimal attention to reducing carbon emissions. This study aims to analyze the impact of the Paris Climate Agreement on energy and environmental policy changes in Indonesia. The research approach applied is descriptive qualitative with an online literature study method, using sources from scientific journals, books, government documents, and international reports. The research findings indicate that the Paris Climate Agreement acts as a key driver of national policy change towards low-carbon development. Indonesia began to implement new instruments such as Nationally Determined Contributions (NDC), carbon tax, Emissions Trading System (ETS), and set energy transition targets in the 2021-2030 RUPTL. In addition, environmental policies are emphasized through the integration of climate change issues in the RPJMN, RAN-GRK, forest moratorium, and the establishment of the Peat Restoration Agency. Despite significant progress, policy implementation still faces challenges in terms of coordination and resistance from various sectors.*
Keywords: *Paris Agreement, energy policy, climate change, renewable energy, RAN-GRK, energy transition.*

INTRODUCTION

Although Indonesia ratified the Kyoto Protocol in 2004, its climate policies are still voluntary and not fully integrated into national development planning.(Hukum, 2025) The Kyoto Protocol is one of the international systems for climate change. form of the United Nations (UN) under the UNFCCC (United Nations Framework Convention on Climate Change) which is binding for each individual in the protocol. Initiatives such as micro-hydro development, solar energy deployment in remote areas, and the primary forest moratorium established in 2011 demonstrate early awareness of the importance of energy transition and environmental conservation. However, these policies lack a strong regulatory framework and funding, resulting in low implementation and no significant impact on changing the national energy mix. The lack of coordination between ministries

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and the top-down approach further reduced the effectiveness of energy and environmental policies prior to the Paris Agreement. One of the first steps to integrate climate change issues in national development planning is through the National Action Plan for Reducing Greenhouse Gas Emissions (RAN-GRK) which was introduced in 2011 as part of Indonesia's commitment to reduce emissions by 26% independently and up to 41% with international assistance. RAN-GRK is a guidance document for ministries/agencies and local governments in planning low carbon development programs. Although voluntary, the RAN-GRK serves as a crucial basis for directing more climate-oriented sectoral policies, although it lacks significant legal force and sufficient oversight.

In addition to the RAN-GRK, national medium-term development planning documents (RPJMN) have started to include climate issues, especially since the RPJMN 2010-2014 and more structurally in the RPJMN 2015-2019. In the RPJMN, climate change issues have begun to be integrated into the sustainable development framework, although not yet the main focus. This integration aims to align the national development agenda with environmental sustainability through environmentally friendly economic approaches, environmental capacity building, and resilience to climate disasters.

The 2015 Paris Climate Agreement is one of the most important agreements to address the global climate crisis. The agreement commits nearly 200 countries to keeping global temperature rise below 2°C with the goal of limiting it to 1.5 degrees above pre-industrial levels. The Paris Climate Agreement introduces the idea of nationally determined contributions (NDCs) where each country can set voluntary emission reduction targets according to their level of development and economic conditions. (Karim, Ghazali, & Ansari, 2020) Due to climate issues, the Paris Agreement to the United Nations Framework Convention on Climate Change (UNFCCC) was approved on December 12, 2015, to promote a globally low-carbon future.

Indonesia officially ratified the Paris Climate Agreement on October 31, 2016 with Law Number 16 Year 2016. Although the Paris Agreement was ratified globally in December 2015 at the 21st UN Climate Change Conference (COP21) in Paris, each country, including Indonesia, needs to carry out the ratification process domestically to make its commitment legally binding at the national level. The ratification of the Paris Agreement is an important moment in the change of energy and environmental policies in Indonesia. (Mendrofa, Sugandi, Rusli, & Amalia, 2024) Indonesia must demonstrate a firm dedication to global climate goals, including adherence to the Paris Agreement and implementation of an active renewable energy policy. This not only creates an opportunity to secure international funding, but also strengthens Indonesia's standing in the world as a country that takes climate change seriously. The commitments contained in the Nationally Determined Contributions (NDC) document encourage the Indonesian government to deliberately set greenhouse gas emission reduction targets and strengthen the composition of renewable energy in national development planning. In addition, international pressure and incentives in the form of energy transition funding from global institutions and international partners have also accelerated the restructuring of energy

sector regulations. In this context, the impact of the Paris Climate Agreement on changes in Indonesia's energy and environmental policies is also a crucial issue. This research aims to find out how much the Paris Climate Agreement encourages a shift in national policy direction from dependence on fossil energy to a cleaner and more sustainable energy transition.

The ratification of the Paris Agreement in 2015 became a crucial moment in the change of energy and environmental policies in Indonesia. The commitments contained in the Nationally Determined Contributions (NDC) document encourage the Indonesian government to set greenhouse gas emission reduction targets systematically and strengthen the use of renewable energy in national development planning. In addition, international pressure and incentives in the form of energy transition funding from global institutions and international partners also accelerated the process of restructuring energy sector regulations. In this context, the impact of the Paris Climate Agreement on Indonesia's energy and environmental policy reforms is an important issue that needs further research. (Savanna, 2022) To deal with the worsening problem of climate change, action is needed to mitigate the effects that may occur in the future. Therefore, collaboration between countries is needed to formulate policies that can regulate climate change within them. (Yonathan, Mentari, Putri, Shofi, & Maret, 2024) The Paris Agreement aims to promote global collaboration to reduce greenhouse gas emissions and curb the effects of climate change. This contract lays out the commitments, goals, and means of financial support to achieve that goal.

METHODS

This research uses a descriptive qualitative approach that aims to analyze the dynamics of energy and environmental policy changes in Indonesia before and after the approval of the Paris Climate Agreement in 2015. This approach was chosen because the theme emphasizes meaning, process, and context, not numbers or statistical data. The data used in this research is secondary data obtained through the online literature review method. Researchers collected and analyzed scientific journal articles, e-books, and reports from international organizations related to climate change and energy policy.

RESULT

The Effect of the Paris Climate Agreement on Energy Policy Changes in Indonesia

Prior to 2015, energy policy in Indonesia was influenced by the need to accelerate the industrialization process and ensure national energy supply security, with coal as the main source dominating the power sector. The construction of coal-fired power plants (PLTUs) was significantly favored as coal was abundant in the country and provided a more affordable price compared to other energy sources. However, this heavy reliance on fossil energy led to a significant increase in carbon emissions, creating immense pressure from the global community on Indonesia's climate commitments.

At that time, the National Energy General Plan (RUEN) and the Electricity Supply Business Plan (RUPTL) did not fully align emissions reduction issues in policy making, and still made fossil energy the main basis for energy sector development. Support for fossil fuels and tax

incentives given to the coal sector are still very strong, making renewable energy economically uncompetitive. While some geothermal and hydro projects are being developed, their implementation is limited due to the absence of a solid legal framework and optimal fiscal support.

The Paris Agreement, which was adopted internationally in December 2015 and then ratified by Indonesia in 2016, became a key driver in changing the direction of the country's energy and environmental policies. (Rehiara, Setiawidayat, Marini, & Raharjo, 2023) In its Intended Nationally Determined Contributions (INDC) document, Indonesia set an ambitious goal to reduce greenhouse gas emissions by 29% independently and up to 41% with international support by 2030. The commitment sends a strong signal that the Indonesian government is ready to transform its national energy strategy to align with global needs in addressing climate change. It encourages the reorganization of policies and strategies to develop renewable energy more seriously. In addition, the Paris Agreement provides a great opportunity for Indonesia to increase international cooperation, one of which is through the Just Energy Transition Partnership (JETP) program, which promises USD 20 billion in financing to accelerate the energy transition from coal to clean energy. This support also strengthens Indonesia's position in global climate negotiations, while motivating the government to overhaul energy sector regulations and policies to be more sensitive to climate change. This process can be understood through the lens of policy diffusion, where international encouragement promotes the spread of domestic policy learning and the acceptance of best practices from other countries (Mendrofa et al., 2024).

The study conducted by Mendrofa and colleagues. (2024) identified four main mechanisms in Indonesia's energy policy diffusion process in response to the Paris Agreement: learning, competition, imitation and coercion. With the learning mechanism, Indonesia began to actively refer to and study the best practices of other countries in the development of renewable energy and low-carbon technologies. The competition mechanism is seen in Indonesia's efforts to build an attractive policy environment for global investors, so that it can compete with other developing countries in attracting climate investments. Imitation occurs when Indonesia emulates and adapts policy models such as purchase tariffs, energy auction systems, and carbon certification schemes that have proven successful in developed countries. Meanwhile, coercion comes in the form of international pressure and agreed commitments, which require Indonesia to create a solid legal and institutional framework such as the enactment of a renewable energy law and the implementation of a carbon pricing mechanism. The combination of these four mechanisms shows that energy policy reform in Indonesia is not only reactive to global pressure, but also proactive in creating a more sustainable and equitable energy system.

One of the significant changes following the ratification of the Paris Agreement is the development and implementation of new policies and regulations that go deeper and support emission reductions. The passing of Law No. 7 of 2021 on Harmonization of Tax Regulations was the starting point for the implementation of a carbon tax in Indonesia. This policy was further strengthened by the launch of the Emissions Trading System (ETS) in early 2023, which initially focused on the electricity sector, particularly large-capacity power plants (Ghaniyyu & Husnita, 2021). The law regulates two main methods of emission control: a cap-and-tax scheme through a carbon tax, and a cap-and-trade scheme through quota-based emissions trading. The implementation of the ETS shows that Indonesia is starting to adopt a market approach to encourage companies to reduce their emissions. It also provides encouragement to clean energy developers through a more adaptive electricity tariff scheme and a transparent auction system. In contrast, Presidential Regulation No. 112 of 2022 established a moratorium on the construction

of new power plants (except for certain strategic projects) and designed a roadmap for early retirement of aging power plants, as part of the energy sector's decarbonization efforts (Silalahi et al., 2023).

In addition, government policy attention has also been directed at reducing coal's contribution to the national energy mix, through a coal phase-out program targeted for completion before 2050 and the implementation of cofiring technology, which mixes biomass in coal-fired power plants. Despite international support such as from the JETP program, the cofiring scheme has been criticized for increasing deforestation rates and still generating carbon emissions. The government responded to this challenge by designing policies that regulate energy transition more flexibly, through new contracts and electricity market system updates to encourage investment in the renewable energy sector (Savanna, 2024). The revised 2021-2030 RUPTL shows real progress towards this goal, with a target of 52% of new electricity capacity from renewables, including 17 GW of solar, 16 GW of hydro and 5 GW of geothermal. While this goal is considered progressive, implementation still suffers from structural and administrative barriers. As of 2021, the achievement of the renewable energy mix still ranges between 13-14%, far from the 23% target by 2025 (IESR, 2024).

Carbon pricing is one of the most effective tools in encouraging changes in business and industry attitudes towards environmentally friendly practices. The government has introduced an ETS system for large-capacity power plants as a pilot project, and plans to gradually expand its application to the industrial, transportation and building sectors. The imposition of a carbon tax of IDR 30,000 for each ton of CO_2 is the first step in presenting a carbon price signal in the domestic market. While this charge is still considered low globally, its implementation provides a foundation for the development of a more integrated carbon pricing system in the future. The goal is to create a market mechanism capable of effectively reducing emissions, improving energy efficiency, and providing a source of funding for clean energy projects. The main challenge in implementing this policy is resistance from the industrial sector and local politics that still firmly maintain coal's position in the national economy.

The Effect of the Paris Climate Agreement on Environmental Policy Change in Indonesia

Prior to the adoption of the Paris Climate Agreement in 2015, environmental policies in Indonesia were sectoral, uncoordinated and lacked a focus on reducing climate change. Currently, environmental policy is still seen as an add-on to the national development agenda, rather than the main focus for sustainable development. The government emphasizes economic growth by exploiting natural resources, particularly forestry, mining, and palm oil, resulting in widespread environmental damage. Some of the policies implemented by the Indonesian government before adopting the Paris Climate Agreement are:

- (PALENGKAHU, 2023) The President instructed BIG (Geospatial Information Agency) to develop a One Map Policy that aims to integrate all information maps produced by various sectors into one unified map. This policy aims to integrate all geospatial information (maps) from various ministries, agencies, and local governments into one national reference map with uniform standards. This policy emerged as a reaction to land clashes and overlapping licenses, especially in the fields of forestry, plantations, mining, and regional spatial management.
- A moratorium on forest and peatland licenses, a moratorium related to their contribution to ensuring national food and energy supplies. Implementing a moratorium that only focuses on activities in certain sectors could reduce the government's ability to achieve the

Presidential Instruction's objectives, as well as hinder the President's commitment to reduce greenhouse gas emissions.

- Establishment of the Peatland Restoration Agency The Peatland Restoration Agency (BRG) is a non-structural institution under the President of the Republic of Indonesia established under Presidential Regulation No. 1 of 2016. The Peat Restoration Agency focuses on restoring peat ecosystems degraded by fire, drainage and conversion, reducing the threat of recurrent peat fires every summer and supporting the achievement of Indonesia's emissions reduction targets in the context of the Paris Climate Agreement.

The Paris Climate Agreement is a significant step in achieving net zero emission, where the concept of net zero emission means a balance between emissions released and those removed from the earth's atmosphere. The ratification of the 2015 Paris Agreement in Indonesia through Law No. 16 of 2016 is the basis for the importance of national environmental policy transition. As an international agreement that has the force of law, the Paris Climate Agreement requires participating countries, including Indonesia, to establish and implement the specified NDC. Indonesia is committed to reducing emissions with an NDC that includes a 29% reduction in greenhouse gas emissions independently and 41% with international support. The Paris Climate Agreement is driving international pressure and political fervor for Indonesia to change the direction of national development to be more sustainable and low-carbon. This can be observed in:

- Integration of climate issues in RPJMN and RAN-GRK

The integration of climate change issues in Indonesia's national development planning is a crucial step to ensure development sustainability in the face of global environmental challenges. The Government of Indonesia has prioritized climate issues in a structured manner through two main documents, namely the RPJMN (National Medium-Term Development Plan) and RAN-GRK (National Action Plan for Greenhouse Gas Emission Reduction). One of the main pillars is increasing resilience to climate change and environmental protection. In this RPJMN, indicators such as emissions from the energy sector, forest area restored, and percentage of renewable energy are being used as the basis for development assessment. (Qibtiyyah et al., 2016) Meanwhile, the RAN-GRK is a more focused instrument aimed at reducing emissions. The RAN-GRK was established in 2011 under Presidential Regulation No. 61/2011, and serves as a guideline for national mitigation actions in key sectors such as agriculture, energy, forestry, industry and waste. The RAN-GRK targets emission reductions of up to 26% from the Business as Usual (BAU) scenario, or 41% with international support, as part of Indonesia's commitment to the Paris Agreement.

- Commitment to green energy transition and renewable energy

Indonesia is taking concrete steps to strengthen its commitment to clean and environmentally friendly energy. A number of important strategies have been developed to support this overall transition.

a) Towards Net Zero Emissions

The Indonesian government, through President Prabowo Subianto's statement, plans to phase out all coal-fired power plants within the next 15 years - around 2040. In addition, Indonesia aims to achieve net zero emissions before 2050, which is ten years earlier than the previously set target.(Adi, Pawenary, & Prabowo, 2023) The net-zero by 2050 (NZE) scenario is a normative scenario that sets out the steps for the global energy sector to achieve zero emissions by 2050. nuclear energy generation as a possibility in the technological development in the future

electricity generation base load, the factors involved and their influence on economic growth, foreign direct investment, and CO2 emissions in developed and developing countries in the Asia Pacific region.

b) Renewable Energy Development Strategy

In the Electricity Supply Business Plan (RUPTL) for the period 2025-2034, PT PLN targets the construction of 71 gigawatts (GW) of new electricity capacity, of which around 70 percent will be sourced from renewable energy such as solar, hydro, and geothermal. This policy is expected to increase the share of New and Renewable Energy (EBT) from around 12% to around 35% by 2034.

c) Global Cooperation through JETP

The government is also working with international partners through the US$20 billion Fair Energy Transition Partnership (JETP) scheme. In addition, the Asian Development Bank (ADB) also provides assistance in the form of a loan of 500 million US dollars to strengthen the regulation and management of the national energy sector.

d) New Renewable Energy Infrastructure Development

In the next 15 years, the government targets the development of renewable energy infrastructure to reach 75 GW. The details of this development include additional capacity of 17 GW for solar, 16 GW for hydro, 5 GW for geothermal, and 5 GW for wind energy.

- Drafting a new legal framework such as the New and Renewable Energy Bill (EBT).

In order to strengthen the direction of the energy transition, the government is drafting a New and Renewable Energy (EBT) Bill as a clearer and more complete legal foundation. Regulations related to renewable energy are currently scattered in several regulations, such as Law No. 30/2007 on Energy, Government Regulation No. 79/2014 on National Energy Policy, and Presidential Regulation No. 112/2022. Unfortunately, the regulations are still sectoral and not fully connected.

a. Why is RUU EBT needed?

This Bill is expected to become a solid legal foundation to accelerate the utilization of EBT in a comprehensive and planned manner. One of the crucial aspects of this bill is the recognition that renewable energy is a national strategic asset that must be managed in a sustainable and inclusive manner.

b. Policy Basis and Objectives

This bill is designed with basic principles such as sustainability, energy sovereignty, efficiency, community participation, and encouragement of technological innovation. It also provides for the development of an energy transition roadmap, the shift from conventional to green technologies, and the provision of fiscal and non-fiscal incentives.

c. Scope of Regulation in RUU EBT

Some of the main points regulated include:

- State control over EBT resources,
- Energy transition measures which are implemented in stages and planned,
- Planning from short to long term through road map,
- As well as support programs in the form of funding, research, human resources development, and ease in licensing.

d. Implementation Constraints

Although on paper, this bill has an innovative vision, a number of parties still doubt the extent to which this regulation can actually be implemented effectively in the field. The main

problem often lies in the synchronization between institutions and the readiness of supporting infrastructure.

CONCLUSION

The ratification of the Paris Climate Agreement in 2016 was a significant watershed moment in Indonesia's energy and environmental policy challenges. (Ghaniyyu & Husnita, 2021) The Paris Agreement is a continuation and improvement of the Kyoto Protocol on climate change, which basically aims to limit the increase in global warming to below 2°C and continue efforts to reduce the temperature rise to 1.5°C. Prior to the Paris Agreement, policies were fragmented, lacked coordination, and were not strong in terms of regulation or funding, although there were initiatives such as the RAN-GRK and RPJMN that began to link climate issues. However, after Indonesia ratified the Paris Agreement through Law No. 16/2016, there has been increased commitment and more targeted policies towards low-carbon development and sustainable energy. The Indonesian government not only set emission reduction targets in the NDC, but also began to initiate energy policy reforms through the deployment of global policies, such as implementing renewable energy tariff schemes, carbon emissions trading (ETS), and the application of carbon taxes. In the energy sector, a shift is being made from coal to renewable energy through changes to the RUPTL and international collaborations such as the Just Energy Transition Partnership (JETP). Significant transformations are also taking place in the environmental sector, where climate change issues are starting to become a major element in national planning and are followed by institutional strengthening, such as the establishment of the Peat Restoration Agency and the One Map Policy. Furthermore, the drafting of the New and Renewable Energy Bill will provide a legal foundation to accelerate the utilization of renewable energy in a more serious and planned manner. While there has been much progress, major challenges remain, such as resistance from coal-based industries, limited infrastructure, and coordination constraints between agencies. But overall, the Paris Climate Agreement has created a positive impetus as well as a significant opportunity for Indonesia to transform its energy policy from one based on natural resource exploitation to a more environmentally friendly, equitable and sustainable development model. This transformation proves that strong international support, if followed by progressive and well-planned national policies, can steer the country's development to a path more in line with global sustainability.

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