



INDONESIA'S EFFORTS IN ACCELERATING CARBON NEUTRALITY TARGETS POST G20 BALI SUMMIT

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Carbon Neutral; Indonesia National Target; G20 Bali Summit. The G20 is an international cooperation forum consisting of 20 countries with the world's largest economies, responsible for approximately 75% of global greenhouse gas emissions. Due to extensive use of carbon-based fuels, there has been a worrisome rise in global temperatures. The non-binding nature of decision-making within the G20 as an international cooperation forum poses a challenge to accelerating the achievement of Carbon Neutrality targets. This article discusses how G20 summits influence the acceleration of Carbon Neutrality targets and Indonesia's legal steps towards achieving them. The normative legal research method is applied to explain various legal concepts and principles relevant to this article. The research highlights the connection between the G20 and achieving Carbon Neutrality targets, emphasizing strong encouragement for member states, exemplified by the emergence of the Bali Common Principle in Accelerating Clean Energy Transition (Bali COMPACT) and its principles for expediting environmentally friendly energy transitions. The Indonesian government's commitment to transitioning to clean energy is reflected in regulations such as Presidential Regulation No. 112 of 2022 and the discussion of the Renewable Energy Bill (RUU EBT).

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A. Introduction

The focus on renewable energy has risen to prominence globally and in Indonesia, where the international community is united in efforts to achieve goals for a clean and sustainable energy transition. The 2016 Paris Agreement represents a vital cornerstone in the global campaign against climate change, signaling a joint dedication to lowering greenhouse gas emissions and advancing renewable energy technologies. These

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initiatives not only bolster environmental sustainability but also open up fresh economic prospects through investments and advancements in the renewable energy industry.

The G20 is an international cooperation forum consisting of 20 countries with the world's largest economies, responsible for approximately 75% of global greenhouse gas emissions. Being the fourth most populous nation globally, Indonesia plays a crucial role in the energy transition process discussed at the G20 summits. During Indonesia's G20 presidency, concrete steps were taken to achieve the energy transition goals set forth in the 2016 Paris Agreement. Utilizing its leadership within the G20, Indonesia supported the Sustainable Energy for All (SEforAll) initiative.

The foundation of the discussion on renewable energy stems from paragraph 11 in the preamble of the Paris Agreement. *“Acknowledging that climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local Communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity”.*

In 2019, Indonesia introduced regulations to support electric vehicle usage through Presidential Regulation (PERPRES) No. 55 of 2019 on Accelerating the Electric Battery-based Motor Vehicle Program for Road Transportation. Subsequently, in 2022, Indonesia took significant steps towards achieving Net Zero Emissions targets before the G20 summit by issuing Presidential Instruction (INPRES) No. 7 of 2022 on the Use of Electric Battery-based Motor Vehicles as Official Government and Personal Vehicles at Central and Regional Government Agencies (Humas Sekretaris Kabinet, 2023). This instruction served as an initial socialization effort through local governments for the wider Indonesian community to achieve electric vehicle usage goals, building upon Presidential Regulation No. 55 of 2019.

This study aims to examine Indonesia's efforts to accelerate its achievement of zero emissions or carbon neutrality goals by 2030, following the G20 Bali summit. Achieving carbon neutrality is vital for Indonesia as it helps mitigate climate change impacts, enhances the sustainability of natural resources, improves public health, creates economic opportunities, and fulfills global obligations to mitigate climate change impacts. Therefore, it is clear that Indonesia must persist in implementing effective policies and regulations, boosting investments in renewable energy and energy efficiency, and fostering public awareness and education to attain zero emissions or carbon neutrality by 2030 (Agung Pribadi, 2023).

Achieving Carbon Neutrality targets is a crucial goal for Indonesia because it not only mitigates the impact of climate change but also ensures the sustainability of natural resources, improves public health, creates new economic opportunities and fulfills global responsibilities in combating climate change. Therefore, Indonesia needs to continue implementing effective policies and regulations, increasing investment in renewable

energy and energy efficiency, and enhancing public awareness and education to achieve zero emissions or carbon neutrality by 2030. These steps will provide short-term benefits by reducing pollution and improving air quality, as well as ensure long-term economic and environmental sustainability for future generations. Based on the provided background, the main issue addressed in this research is the relationship between the G20 summit and the acceleration of Carbon Neutrality targets, as well as Indonesia's legal efforts to expedite the achievement of these targets. This study will explore how Indonesia's participation in the G20 summit influences policies and strategies to achieve carbon neutrality targets, and analyze the impact of legal initiatives implemented by Indonesia in this context.

B. Method

The research methodology employed in this legal study is a structured form of doctrinal (normative) legal research, chosen for its suitability in analyzing the coherence, meaning, and application of existing legal rules and principles. Guided primarily by a statutory approach that anchors the analysis in a hierarchy of binding instruments, the research is further framed by a conceptual approach to ensure the consistent use of key legal constructs. Data is gathered through documentary research of categorized legal materials: primary sources, such as the binding texts of the Paris Agreement (2015) and relevant national statutes including but not limited to Statutes but also related technical regulations, form the authoritative core of the analysis; secondary sources, including scholarly journals and textbooks, provide critical interpretation and context. The analytical process employs established legal reasoning techniques, including syllogistic application of rules and systematic interpretation of provisions through textual, contextual, and teleological methods. The argument will first describe the relevant international and national legal frameworks before systematically analyzing their alignment, identifying any gaps or conflicts, and synthesizing these findings to critically evaluate the regulatory landscape and answer the research questions. This method ensures a systematic, transparent, and academically rigorous examination of the law.

C. Result & Discussion

1. The Relationship Between the G20 Summit and Accelerating the Target of Carbon Neutrality

The G20 Energy Transition began under Indonesia's G20 Presidency on December 1, 2021, and will culminate at the G20 Summit in November 2022. Its aim is to accelerate the shift towards environmentally friendly energy and achieve carbon neutrality by 2030. G20 Energy Ministers have agreed to expedite this transition as part of global efforts towards sustainable development goals, with the G20 serving as a primary forum to influence global environmental policies (Angela Solikova, 2020).

The G20 discussions on environmental matters are based on the 2016 Paris Agreement, an international treaty that most G20 member countries supported in 2015. The main goal is to cap the global temperature rise to below 2 degrees Celsius from pre-industrial levels, striving for a decrease of 1.5 degrees Celsius. Under this agreement, participating nations pledge to decrease greenhouse gas emissions and offer financial and technological aid to developing nations to assist them in adapting to climate change impacts.

Amid global challenges in 2023, Indonesia's Ministry of Energy and Mineral Resources has outlined critical objectives to address climate change and advance energy sustainability. These include enhancing the efficiency of power generation and implementing a carbon trading mechanism to efficiently control and diminish greenhouse gas emissions. Indonesia has ambitiously set a target to achieve carbon neutrality by 2060, aligning with global pledges to substantially reduce greenhouse gas emissions. By 2030, Indonesia aims to cut emissions by 29%, underscoring its proactive stance on environmental stewardship and dedication to global initiatives combating climate change.

The introduction of a carbon trading mechanism is expected to play a significant role in these efforts, providing a market-based approach to incentivize emission reductions across various sectors. Enhancing the efficiency of power generation will help lower the overall carbon footprint, making energy consumption more sustainable and reducing reliance on fossil fuels. These initiatives highlight Indonesia's dedication to integrating sustainable practices into its energy policies and its determination to be a responsible global community member. Through these efforts, Indonesia aims to meet its national targets and support the international mission to create a more sustainable and resilient planet for future generations (Intergovernmental Panel on Climate Change (IPCC), 2018).

The Bali Common Principle in Accelerating Clean Energy Transition (Bali COMPACT), resulting from the G20 Summit in Bali, encompasses nine principles to expedite the transition towards environmentally friendly energy, including achieving carbon neutrality (Korniawan, 2023). These nine principles encompass bolstering trust and transparency in national planning, execution, and assessment; improving the resilience, stability, and affordability of energy markets; and ensuring secure, sustainable, and dependable energy supply, infrastructure, and systems. The G20's commitment to transitioning to environmentally friendly energy and achieving carbon neutrality is crucial for Indonesia and the world as it will help reduce carbon emissions and mitigate the impacts of climate change (Korniawan, 2023).

Following the agreement on Bali COMPACT, the Indonesian government and G20 members are pursuing various follow-up actions from this agreement. The G20 Leaders Declaration mentions commitments from members to achieve Sustainable Development Goal 7 related to clean and renewable energy by seeking solutions to achieve stability, transparency, and climate goals through strengthening energy. The Indonesia

governments supply chains and energy security. It also mentions the commitment of G20 members to these clean energy targets by increasing the implementation of environmentally friendly and renewable power generation. Since G20 is not an international organization, it does not have an authority to create a treaty nor legal binding instruments; on the other hand, G20 does only a forum of cooperation that could facilitate cooperation between the members. It was very unfortunate Indonesia was unable to gain support from other member countries for financing its proposed projects. The G20 is a pure a forum of cooperation different from The World Trade Organization where the latter could create a binding legal instruments among the member.

The Indonesian government's commitment to advancing renewable energy is evident in Presidential Regulation No. 112 of 2022, which focuses on accelerating the development of renewable energy for electricity supply. This regulation specifically addresses the phased decommissioning of steam power plants (PLTU). Other measures taken in other forms include international cooperation, which is a key step taken by G20 Bali to implement agreements made during the Summit. These steps include Joint Financing, Global Infrastructure Development, Fund Mobilization, Support for Developing Countries, and Joint Commitments.

The implementation of the G20 Bali Summit agreement on energy transition and Carbon Neutrality is a multifaceted endeavor that hinges on the development of a robust framework supported by strong international collaboration. This agreement underscores the collective commitment of G20 member countries to address climate change through sustainable energy practices. Concrete steps have already been initiated to fulfill these commitments, including policies aimed at enhancing renewable energy adoption and fostering technological innovation in clean energy sectors. However, realizing these ambitious goals in their entirety will necessitate sustained cooperation among G20 nations, leveraging the expertise and resources of the private sector, and fostering partnerships with international organizations dedicated to climate action.

In the long term, the successful achievement of these objectives will depend on cohesive efforts to implement and monitor progress within the agreed-upon framework. This entails continuous dialogue and sharing of best practices among G20 countries, along with effective mechanisms for financial and technological support where needed. Moreover, fostering an environment conducive to innovation and investment in clean energy technologies will be crucial for accelerating the transition towards Carbon Neutrality. By fostering inclusive and collaborative approaches, the G20 can play a pivotal role in driving global efforts to combat climate change and secure a sustainable future for generations to come.

The G20 has shown dedication to environmental issues; however, substantial challenges persist. One of the main challenges is the disparity among member countries in their environmental policy approaches. Additionally, pressure from certain industrial sectors can influence the policy decisions of member countries regarding Carbon Neutrality targets. Indonesia has set a target to achieve carbon neutrality by around mid-

century, taking into account current scientific developments and varying national conditions. Additionally, the Indonesian government has set targets to reduce emissions by 31.89% through domestic efforts and up to 43.20% with international support by 2030. In line with these goals, Indonesia ratified the Paris Agreement under Law Number 16 of 2016 and integrated climate resilience measures into its Enhanced Nationally Determined Contributions (ENDC) (Fransiska Nangoy, 2021).

The G20 has placed significant emphasis on transitioning to sustainable energy as a critical agenda item under its leadership. This includes accelerating the energy transition and striving towards global sustainable development goals, such as achieving carbon neutrality by 2030. Concrete actions taken by the G20 include prioritizing the phase-out of coal-fired power plants. The Summit has reinforced collective commitments to adopting sustainable energy practices. In Indonesia, the Ministry of Energy and Mineral Resources underscores the importance of shifting towards environmentally friendly energy sources. This initiative encompasses enhancing energy resilience and advancing technological developments conducive to sustainable energy solutions (Fransiska Nangoy, 2021).

In the context of environmental initiatives, the G20 Summit has taken deeper and more comprehensive steps. They have agreed to regularly and transparently report their greenhouse gas emissions, not just to monitor progress in emission reduction but also to enhance accountability and build international trust in environmental protection efforts. Additionally, the G20 Summit actively promotes the development of clean energy as a strategic measure to reduce dependence on fossil fuels, which significantly contribute to global warming. They invest not only in renewable energies like solar and wind power but also focus on improving energy efficiency across all economic sectors and promoting innovative green technologies.

Furthermore, the G20 Summit identifies challenges in confronting climate change and urges countries to implement concrete solutions. They support the development of climate-resilient infrastructure, such as stronger flood management systems and more sustainable urban planning. The G20 also backs the restoration of degraded ecosystems to enhance environmental resilience and mitigate the impacts of natural disasters. Through these initiatives, the G20 plays a pivotal role in leading global efforts to achieve sustainable development and safeguard the environment for future generations.

2. Efforts of the Indonesian Government in The Legal Field to Accelerate the Achievement of Carbon Neutrality Targets

The Indonesian government is actively taking legal measures to accelerate the achievement of Carbon Neutrality targets. One significant step is strengthening the regulatory framework that supports investment in renewable energy and energy efficiency. This includes developing policies that promote the use of green technologies

and facilitate access to resources for sustainable projects. Additionally, the government is updating environmental policies that regulate emission reductions and empower communities in efforts to mitigate the impacts of climate change. These measures aim not only to fulfill Indonesia's global commitments on climate change but also to secure a sustainable environmental future for future generations.

Through these efforts, Indonesia aims not only to achieve environmental sustainability but also to strengthen its position as a regional leader in mitigating and adapting to global climate change. By enhancing legal frameworks and updating policies, Indonesia seeks to foster a conducive environment for green investments and innovative solutions in combating climate challenges. These initiatives are pivotal in ensuring that Indonesia plays a proactive role in global efforts towards a low-carbon and resilient future, promoting economic growth alongside environmental stewardship.

Indonesia has set a target to achieve carbon neutrality by 2060 or earlier (IEA, 2022). To achieve this target, the government has established several policies and regulations, including:

1. **Nationwide Determined Contribution (NDC):** *"In September 2022, Indonesia updated its NDC, increasing unconditional targets from 29% to 32% under a business-as-usual scenario (BAU), and conditional targets from 41% to 43% under BAU, including emissions from land use, land use change, and forestry (LULUCF). (Climate Action Tracker, 2024).*
2. **Energy Sector Roadmap towards Achieving Net Zero Emissions:** *"his roadmap provides a comprehensive analysis covering key areas such as community-centered transitions, gradual reduction of coal use, investment needs and financing, and critical minerals. It also sets ambitious pathways enabling Indonesia to achieve net zero emissions by 2050 (Muyasyaroh, 2024).*
3. **Carbon Pricing:** *"The government has developed comprehensive regulations on a Carbon Pricing Scheme (NEK) that can be implemented through carbon trading (Muyasyaroh, 2024).*
4. **Accelerating Renewable Energy Use:** *"The government aims to accelerate the use of renewable energy so that renewable energy generation comprises at least 34% of total electricity generation by 2030, roughly doubling its current share over the decade (Muyasyaroh, 2024).*

These policies and regulations demonstrate the government's commitment to achieving net zero emissions and transitioning towards a low-carbon economy. As mentioned previously, Indonesia has taken various legal measures aimed at accelerating the achievement of Carbon Neutrality targets as part of its commitment to addressing climate change. This is particularly urgent due to Indonesia's highest carbon emissions originating from the energy sector. The energy sector's impact on the environment necessitates structural efforts beginning with the establishment of legal frameworks that will underpin various policies.

Legislative steps and regulations implemented encompass several aspects reflecting a serious commitment to emission mitigation efforts and environmental protection. First, Indonesia has implemented emission reduction policies and environmental protection in the Environmental Protection and Management Law No. 32 of 2009, which mandates responsibilities for all parties, including the government, to take actions for environmental protection and preservation.

Furthermore, Indonesia has issued a number of environmental laws aimed at strengthening environmental protection and climate change mitigation. Some of these policies include:

1. Law No. 32 of 2009 on Environmental Protection and Management : Analyzing the provisions of Law No. 32 of 2009 on Environmental Protection and Management, it can be said that Indonesia strives to preserve environmental functions and prevent pollution and/or environmental damage. Issues related to carbon emissions are categorized as environmental pollution, especially emissions originating from the energy sector, which are linked to environmental degradation. This law provides a legal framework for the government to regulate and oversee efforts in mitigating and adapting to environmental impacts, including addressing carbon emissions as part of overall environmental protection efforts.
2. Presidential Regulation No. 112 of 2022 on Accelerating the Development of Renewable Energy for Electricity Supply ; Presidential Regulation No. 112 of 2022 on Accelerating the Development of Renewable Energy for Electricity Supply serves as a legal basis demonstrating Indonesia's commitment to achieving net zero emissions and transitioning towards a low-carbon economy. Given that Indonesia has the highest carbon emissions in the energy sector, achieving net zero emissions requires legal measures for energy management in Indonesia. Effective energy management is crucial to increasing the use of renewable energy in the national energy mix. Through this Presidential Regulation, the government has set targets for renewable energy use in the national energy mix, such as 23% by 2025 and 31% by 2030. This aligns with Indonesia's participation in the G20 Summit, where efforts are made to achieve net zero emissions through the Presidential Regulation enacted in 2022. This initiative is consistent with G20 environmental initiatives like Clean Energy Development, aimed at reducing dependence on fossil fuels through investments in renewable energy, energy efficiency improvements, and promoting green technologies.
3. Government Regulation (PP) No. 79 of 2019 on Air Pollution Control : Government Regulation No. 79 of 2019 on Air Pollution Control serves as a legal basis for implementing air pollution control measures in Indonesia. Air pollution issues, including carbon emission pollution from various sources such as the energy sector, industries, and motor vehicle use, are addressed through this

regulation. It establishes standards for air quality and emission standards, which include monitoring, reporting, and enforcement of legal measures against non-compliant entities.

4. Minister of Environment and Forestry Regulation (PermenLHK) No. P.20/MENLHK/SETJEN/KUM.1/8/2020 on Air Pollution Control : Minister of Environment and Forestry Regulation (PermenLHK) No. P.20/MENLHK/SETJEN/KUM.1/8/2020 on Air Pollution Control is another legal regulation with objectives similar to Government Regulation No. 79 of 2019 on Air Pollution Control. It serves as a legal basis for policies related to air pollution control, aligning with the Ministry's responsibilities in formulating policies for pollution control, environmental damage mitigation, and climate change impact management.
5. Presidential Regulation (PERPRES) No. 55 of 2019 on Acceleration of Battery Electric Vehicle (Battery Electric Vehicle) Programs for Road Transportation: Presidential Regulation No. 55 of 2019 on Acceleration of Battery Electric Vehicle (Battery Electric Vehicle) Programs for Road Transportation serves as a legal basis for policies aimed at addressing environmental issues. It specifically targets reducing air pollution related to carbon emissions from motor vehicle use. This policy accelerates the Battery Electric Vehicle (BEV) program for road transportation, aligning with Indonesia's role in the G20 Summit by contributing to efforts aimed at achieving net zero emissions since 2019. This initiative supports G20 environmental goals focusing on clean energy development to reduce dependence on fossil fuels.
6. Draft Law on New and Renewable Energy (EBT Bill) : The Draft Law on New and Renewable Energy (EBT Bill) is currently in progress in Indonesia, underscoring the nation's commitment to fostering renewable energy and new energy sources. This legislation aims to oversee the management and regulation of energy sources, facilitate the transition towards renewable energy, and establish a clear roadmap for the sustainable development of renewable energy sources. By promoting policies that support renewable energy adoption and outlining frameworks for sustainable energy management, Indonesia aims to enhance its energy security, reduce dependency on fossil fuels, and mitigate environmental impacts associated with conventional energy sources. This legislative effort signifies a strategic move towards achieving long-term sustainability goals while positioning Indonesia as a regional leader in renewable energy innovation and implementation. The policies and regulations implemented by the Indonesian government demonstrate a strong commitment to achieving net-zero emissions targets and steering the economy towards low-carbon pathways. These measures not only reflect a serious determination to reduce emission impacts and protect the environment but also underscore the importance of strong legal frameworks as the foundation for various strategic policies. With a focus on

developing renewable energy, controlling air pollution, and promoting green technologies, the Indonesian government is not only striving to reduce its carbon footprint but also mobilizing support for a transformation towards a sustainable economy.

These steps illustrate Indonesia's seriousness in addressing global environmental challenges while ensuring that national development is not only sustainable but also considers environmental balance. By adopting comprehensive regulations and implementing measured policies, Indonesia is not only actively contributing to maintaining the sustainability of our planet but also serving as an example to other nations in tackling the climate crisis. In this context, Indonesia's commitment to implementing carbon neutrality strategies is not only a domestic effort but also a significant global contribution to safeguarding the future of our shared Earth.

Indonesia's dedication is evident through initiatives such as the adoption of renewable energy sources and forest conservation programs, which aim to mitigate greenhouse gas emissions and preserve biodiversity. By promoting sustainable practices across various sectors, Indonesia is fostering a green economy that prioritizes both environmental stewardship and economic growth. These efforts underscore Indonesia's role as a proactive leader in environmental conservation on the global stage, setting a precedent for responsible development that prioritizes the well-being of future generations.

D. Conclusion

The G20 has intensified its focus on environmental issues, especially following the signing of the Paris Agreement in 2015. The G20 Summit in Bali resulted in the Bali Common Principles in Accelerating Clean Energy Transition (Bali COMPACT), which outlines principles for achieving carbon neutrality. The Indonesian government has taken concrete steps, such as increasing the development of renewable energy and enacting Presidential Regulation No. 112 of 2022 on Accelerating the Development of Renewable Energy. However, challenges remain, including disparities among member countries and pressures from the industrial sector. The G20 has also taken actions to transparently report emissions, develop clean energy, and implement climate change adaptation measures. The Indonesian government has set a target to achieve carbon neutrality by 2060 or sooner. Despite ongoing challenges, the G20 has demonstrated commitment to environmental issues and taken concrete steps towards achieving carbon neutrality.

The Indonesian government has shown its commitment to this target by issuing various regulations aimed at directing the transition to clean energy, including Law No. 32 of 2009 on Environmental Protection and Management, Presidential Regulation No. 112 of 2022 on Accelerating the Development of Renewable Energy for Electricity Supply, Government Regulation (PP) No. 79 of 2019 on Air Pollution Control, Minister of Environment and Forestry Regulation (PermenLHK) No.

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