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INDONESIA'S CLIMATE DIPLOMACY IN ADDRESSING GLOBAL CLIMATE CHANGE (2015–2023)

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Abstract

This study aims to analyze Indonesia's climate diplomacy in an effort to address global climate change from 2015 to 2023. The method used is a literature study and document analysis from various sources, including government reports, scientific journals, and policy documents related to climate diplomacy. The results of the study show that Indonesia has committed to reducing greenhouse gas emissions through the Enhanced Nationally Determined Contribution (NDC), with a target of reducing emissions by 31.89% independently and 43.20% with international assistance. Indonesia's climate diplomacy integrates domestic and global interests, and involves various initiatives such as the REDD+ scheme and the Climate Village (ProKlim) program that encourages community participation. Although there has been progress in mitigation and adaptation, challenges such as the conflict between economic development and environmental conservation remain obstacles. The conclusion of this study confirms that Indonesia's climate diplomacy not only contributes to reducing emissions, but also has the potential to be a model for other countries in facing the challenges of global climate change. With an inclusive approach and strong commitment, Indonesia can create a new narrative on climate justice and sustainability at the international level.

Keywords: Climate Diplomacy, Mitigation, Adaptation, and Climate Change.

How to Cite

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INTRODUCTION

Global climate change is a 21st-century phenomenon that affects environmental, economic, and social aspects on a global scale. Since signing the Paris Agreement in 2015, Indonesia has committed to reducing greenhouse gas (GHG) emissions. As part of its Enhanced Nationally Determined Contribution (NDC), Indonesia aims to reduce GHG emissions by 31.89% through domestic efforts and up to 43.20% with international support, an enhancement from the previous target of 29% and 41%, respectively. These enhancements align with Indonesia's long-term strategy for low-carbon development and climate resilience, to achieve these targets by 2050 and reach net-zero emissions by 2060 (Soraya, 2023).

Indonesia's climate diplomacy integrates both domestic and global interests to address climate change through various approaches. A key approach is the implementation of the REDD+ scheme, through which Indonesia has gained international recognition, receiving result-based payments amounting to USD 279.8 million by 2023 making it one of the top recipients of this initiative (KLHK, 2023). This achievement demonstrates that Indonesia's mitigation actions can serve as a model for other nations. Furthermore, Indonesia has updated its NDC to align its emission reduction targets with the global warming scenario of 1.5°C. In global forums, such as the G20 Summit in Bali, Indonesia has taken a leadership role in promoting discussions on energy transition and the green economy, creating investment opportunities that support both environmental and economic sustainability (Afandi, 2022)

At the regional level, Indonesia leverages its leadership in ASEAN to initiate climate policies such as the ASEAN Joint Statement on Climate Change and to strengthen community-based climate actions. This approach indicates that Indonesia is not only focused on formal diplomacy but also actively promotes public participation through programs such as the Climate Village Program (ProKlim), which reached 7,264 locations by 2023 (KLHK, 2024).

LITERATURE REVIEW

According to David Held (as cited in Sayyidati, 2017), climate diplomacy is a diplomatic activity focused on addressing global environmental problems by emphasizing cross-border cooperation. This form of diplomacy also seeks to resolve the imbalance of responsibilities between developed and developing countries in efforts to mitigate and adapt to climate change.

Hovi et al. (2016) argue that the success of climate diplomacy depends on political will, civil society engagement, and the technical capacity of states. In the Indonesian context, participation in international forums such as the UNFCCC Conference of the Parties (COP) and the G20 Summit illustrates how the country leverages climate diplomacy to promote agendas on energy transition and carbon emission reduction. A study on leadership in global climate governance highlights the crucial role of developed countries in spearheading mitigation and adaptation efforts, as well as providing financial and technological support to developing nations. This support is intended to ensure that all countries can actively participate in addressing the climate crisis (Subiyanto, 2024). Climate diplomacy collaboration involves cooperation among various actors

governments, international organizations, private entities, and civil society to achieve shared objectives in combating climate change.

Indonesia's climate diplomacy focuses on two main pillars: mitigation and adaptation. In terms of mitigation, Indonesia is committed to reducing greenhouse gas emissions through a series of strategic policies. One major step includes strengthening the REDD+ program, which serves as an instrument for international cooperation particularly with Norway and other partners in efforts to curb deforestation (Ikhitiarin et al., 2023). Additionally, Indonesia is developing the clean energy sector through the Just Energy Transition Partnership (JETP), launched at COP27. This initiative aims to accelerate the decarbonization of the coal-based power sector while also creating massive opportunities for renewable energy investments (JETP Indonesia, 2023).

In addition to mitigation, adaptation remains a crucial pillar of Indonesia's climate diplomacy. Consequently, the country has promoted the integration of adaptation into development planning, such as in the National Medium-Term Development Plan (RPJMN) and the Long-Term Strategy for Low Carbon and Climate Resilience (LTS-LCCR 2050) (Bappenas, 2019). At the international level, Indonesia has also actively accessed financial assistance from the Green Climate Fund (GCF) to support community-based adaptation projects (IPCC, 2022). Klein et al. (2017) emphasize that the success of mitigation and adaptation depends on sound national policies and effective international coordination. Developing countries such as Indonesia face challenges in balancing mitigation and adaptation strategies due to financial and technological limitations.

METHOD

The author employs a literature-based document analysis approach, utilizing a variety of scholarly sources and policy documents related to Indonesia's climate diplomacy. These include government reports, academic journals, reference books, as well as analyses from international sources such as the UNFCCC. This method provides an overview of the policies, strategies, and contributions of Indonesia's climate diplomacy in both global and regional contexts. In this study, Indonesia's climate diplomacy strategies are analyzed through the lens of mitigation and adaptation, in order to understand how national policies and international cooperation contribute to reducing the impacts of climate change and strengthening national resilience. To obtain comprehensive and accurate data, the author refers to literature sources such as peer-reviewed journals, academic books, reports from the Ministry of Environment and Forestry (KLHK), and scholarly publications that focus on Indonesia's climate diplomacy from 2015 to 2023. In addition, reports from the UNFCCC Conference of the Parties (COP) are used to establish the theoretical framework and empirical analysis. Official documents and policy instruments such as the Nationally Determined Contributions (NDC), the Long-Term Strategy for Low Carbon and Climate Resilience (LTS-LCCR), as well as REDD+ and ProKlim program documents from the Ministry of Environment and Forestry are also analyzed.

RESULTS AND DISCUSSION

Indonesia's Climate Diplomacy in Support of Mitigation Efforts

Indonesia has implemented climate diplomacy in international forums, such as the UNFCCC COP and the G20 Summit, through various concrete actions to promote energy transition and reduce carbon emissions. The following are key initiatives undertaken:

Implementation of the Paris Agreement (2015)

The Paris Agreement is a globally endorsed accord to address climate change, concluded at the COP21 in Paris in 2015. Indonesia ratified this agreement through Law No. 16 of 2016, affirming its commitment to reducing greenhouse gas (GHG) emissions and achieving sustainable development. Since then, Indonesia has consistently worked to implement policies and strategies aligned with its Nationally Determined Contributions (NDC) (Siraj, 2019).

Nationally Determined Contributions (NDC) Commitment (2016)

As part of the Paris Agreement, Indonesia submitted its initial NDC in 2016, pledging to reduce GHG emissions by 29% through domestic efforts and up to 41% with international support by 2030. This commitment was enhanced in 2022, with targets raised to 31.89% (domestic) and 43.20% (international assistance), reflecting an increase in mitigation ambition. Five priority sectors were identified: energy, transportation and industry, waste, agriculture, and forestry and land use (Wandira, 2022).

National Strategies and Policies

To implement its commitments under the Paris Agreement, Indonesia has adopted several national strategies: NDC Operational Plan: Outlines strategies to achieve emission reduction targets, including energy transition, critical land rehabilitation, and reduced deforestation. Law No. 7 of 2021 on Tax Regulation Harmonization: Introduces a carbon tax initially targeting coal-fired power plants and later expanded to other sectors. FOLU Net Sink 2030: Aims to make the forestry and land use sector a net carbon sink by 2030. National Energy General Plan (RUEN): Promotes renewable energy development and reduces fossil fuel consumption to achieve Net Zero Emissions (NZE) by 2060 (Tampubolon, 2020). Further efforts to strengthen mitigation include: Enhanced GHG Emission Reduction Targets: Raised to 31.89% domestically and 43.20% with international collaboration, submitted to the UNFCCC in 2022. Development of New and Renewable Energy (NRE): By 2024, GHG emissions in the energy sector had been reduced by 147.61 $MtCO_2eq$, mainly through NRE development (74.73 $MtCO_2eq$) and energy efficiency (30.25 $MtCO_2eq$). However, the renewable energy share in the national mix remains at 13.9%, below the RUEN target of 19.5% (ESDM, 2024). Carbon Capture Technologies (CCS and CCUS): Indonesia fully supports the development of Carbon Capture and Storage (CCS) and Carbon Capture, Utilization, and Storage (CCUS), technologies that can reduce up to 10% of global emissions by 2050. The government has introduced policies to promote CCS/CCUS beyond the oil and gas sector (Then, 2024).

Indonesia's Leadership in ASEAN Climate Diplomacy (2015–2023)
Indonesia contributed to the ASEAN Joint Statement on Climate Change submitted at COP, supported the 2015 Paris Agreement, and emphasized climate finance and energy transition at COP26 (2021) and COP28 (2023). Indonesia also supported the establishment of the ASEAN Centre for Climate Change (ACCC) in 2021. During its 2023 ASEAN Chairmanship, Indonesia proposed three key strategies: (1) ASEAN Joint Statement at COP28 on climate finance and technology transfer; (2) ASEAN Community-Based Climate Action (CBCA) for mitigation and adaptation; and (3) ASEAN Coordinating Centre for Transboundary Haze Pollution (ACCTHAP) to address cross-border haze. Moreover, Indonesia engaged in international partnerships with Japan, the EU, and the US for climate finance and energy transition projects in Southeast Asia. It also joined the Just Energy Transition Partnership (JETP) to accelerate coal phase-out and support clean energy transition (Lukmadi & Sitabuana, 2022).

Participation in International Forums (2015–2023)
At the G20 Summit 2022 in Bali, Indonesia led discussions on a USD 20 billion climate finance package through JETP for energy sector decarbonization (MoF, 2022). Key actions include: National Action Plan for GHG Emission Reduction (RAN-GRK): Imposed a moratorium on primary forest and peatland clearance. Renewable energy development: Set a target of 23% share in the energy mix by 2025. JETP Partnership: Supports energy transition (Hulu, Nau, & Seba, 2024). UNFCCC COP Conferences: Reaffirmed NDC targets and advocated for effective climate finance. At COP29 (Azerbaijan, 2024), Indonesia contributed to the *Baku Climate Unity Pact*, emphasizing the need for USD 100 billion annually for developing countries and promoting low-carbon development initiatives (KLHK, 2024). G20 Forum: As the only ASEAN member in the G20, Indonesia influences global policies on energy transition and green economy (MoF, 2016). Bilateral and Multilateral Cooperation: *Bilateral* Indonesia–Norway: REDD+ Agreement with Norway pledging USD 156 million (MoEF, 2020). Indonesia–Canada: Comprehensive Economic Partnership Agreement (CEPA) scheduled for 2026 (Fajar, 2024). *Multilateral:* COP29 participation in the New Collective Quantified Goal (NCQG) and establishment of the Indonesia Pavilion as a platform for climate diplomacy (ESDM, 2024).

Implementation of Indonesia's Mitigation Actions on Climate Change
According to Presidential Regulation No. 46 of 2008, climate change mitigation refers to efforts to control and prevent the impact of climate change through activities that can reduce GHG emissions or enhance their absorption from various emission sources (Haumahu et al., 2023). Indonesia has undertaken a range of mitigation actions, including:

Implementation of REDD+ in 2016
The implementation of REDD+ (Reducing Emissions from Deforestation and Forest Degradation) serves as Indonesia's climate change mitigation strategy as well as a key instrument in its global climate diplomacy. As the country with the third-largest tropical forest area in the world, Indonesia has played an active role in this scheme to gain

international incentives for reducing emissions in the forestry sector (Wicaksono & Yurista, 2013). Indonesia's commitment to REDD+ began at the 13th UNFCCC Conference of the Parties (COP13) in Bali in 2007 and was further strengthened by the signing of a Letter of Intent (LoI) with Norway in 2010, which pledged up to USD 1 billion in funding (Satwika, 2020).

In 2013, Indonesia established the REDD+ Management Agency, which was later integrated into the Ministry of Environment and Forestry (MoEF) in 2015. The MoEF has developed various supporting systems such as the National Registry System on Climate Change (SRN-PPI) and the Indicative Map for the Suspension of New Licenses (PIPIB) to support the implementation of REDD+.

In 2019, Indonesia reported a verified emission reduction of 11.23 million tons of CO_2 equivalent, which triggered the disbursement of USD 56 million from Norway in 2020 (MoEF, 2020). As of 2023, the total REDD+ incentives received by Indonesia had reached USD 279.8 million, making it one of the largest recipients of this scheme globally (World Bank, 2021). Despite these significant achievements, the implementation of REDD+ in Indonesia faces serious challenges, including weak law enforcement against illegal logging, land tenure conflicts between indigenous communities and industrial concessions, and limitations in the distribution of benefits to local communities. A report by CIFOR (2020) indicates that benefit sharing under REDD+ has not yet been optimized to effectively reach communities directly impacted by forest conservation efforts.

Moratorium on Primary Forest and Peatland Concessions (2016)

The policy of imposing a moratorium on new licenses for natural primary forests and peatlands in Indonesia represents a significant step in climate change mitigation, biodiversity protection, and deforestation control. Initially enacted in 2011, the moratorium was extended several times through Presidential Instruction No. 6/2013, No. 5/2015, and No. 6/2017. In 2019, President Joko Widodo made the moratorium permanent through Presidential Instruction No. 5/2019. Under this policy, the government suspended the issuance of new permits for forestry, plantation, mining, and other land-use activities in areas of primary forest and peatland that had not previously been licensed. However, the effectiveness of this moratorium has been subject to various evaluations. On one hand, studies suggest that the policy has succeeded in reducing deforestation rates in certain regions (Austin, 2014). On the other hand, critics argue that the moratorium is largely administrative in nature, as it only prohibits the issuance of new permits, while existing permits remain valid and have not been comprehensively reviewed. Additionally, the moratorium does not cover secondary forests, which account for a significant portion of actual deforestation.

National Energy General Plan (RUEN) 2017

The Government of Indonesia issued Presidential Regulation No. 22 of 2017 concerning the National Energy General Plan (RUEN). One of the key components of RUEN is the target to increase the share of new and renewable energy (NRE) to 23% of total national primary energy consumption by 2025, and 31% by 2050. This reflects Indonesia's strong

commitment to reducing greenhouse gas (GHG) emissions while simultaneously enhancing national energy security (Pahlevi, Thamrin, Ahmad, & Nugroho, 2024).

In the context of climate change mitigation, achieving these targets will directly contribute to Indonesia's Nationally Determined Contribution (NDC), particularly in the energy sector, which is the second-largest contributor to national emissions after the forestry sector. However, various reports indicate that the 23% target by 2025 faces significant challenges, including slow development of NRE infrastructure, continued reliance on coal within the PLN electricity mix, as well as investment and fiscal policy constraints. According to a 2023 report by IESR, by the end of 2022 the contribution of NRE to the primary energy mix had only reached approximately 12.3%. This situation calls for accelerated regulatory reforms, improvements in fiscal incentives, and the integration of energy transition strategies into national and sub-national development planning agendas.

Strengthening Renewable Energy and Energy Efficiency Programs in 2020

In 2020, the Government of Indonesia reinforced its commitment to reducing greenhouse gas (GHG) emissions in the energy sector by advancing the development of new and renewable energy (NRE) and enhancing energy efficiency, as part of the country's transition toward a low-carbon energy system. This step is critical, as the energy sector contributes approximately 34% of national GHG emissions. The policy is also aligned with Indonesia's goal to achieve Net Zero Emissions by 2060 (Anugraheni, Pramuditha, Asmoro, & Hanifah, 2023).

In terms of renewable energy, the government accelerated the implementation of various power generation projects based on non-fossil energy sources such as hydropower, solar, bioenergy, and geothermal. One of the major achievements in 2020 was the increase in the installed capacity of NRE, which reached 10,467 MW—or approximately 15% of the total national power generation capacity (Ministry of Energy and Mineral Resources, 2020). The Ministry also promoted energy-saving technologies in the industrial, building, and transportation sectors. The Energy Management Program for Industry and Buildings (PEEP) was expanded, successfully reaching over 500 industries and public facilities by 2020.

Establishment of the FOLU Net Sink 2030 Target and CCS/CCUS Strategies (2021)

The Forest and Other Land Use (FOLU) Net Sink is a condition in which the forestry and land use sector collectively absorbs more carbon dioxide (CO_2) from the atmosphere than it emits, making it a net carbon sink. The establishment of the FOLU Net Sink 2030 target is outlined in Indonesia's Long-Term Strategy for Low Carbon and Climate Resilience (LTS-LCCR), formulated to fulfill its commitments under the Paris Agreement and its Nationally Determined Contribution (NDC). This plan aims to reduce emissions from the FOLU sector, curb deforestation rates, and maximize the ecosystem functions of forests as carbon sinks (MoEF, 2021).

In addition, Indonesia is developing strategies for the implementation of Carbon Capture and Storage (CCS) and Carbon Capture, Utilization, and Storage (CCUS) technologies to reduce emissions from the energy and industrial sectors. CCS and CCUS are technologies designed to capture CO_2 generated from the combustion of fossil fuels

and either store it underground or repurpose it for industrial processes. Indonesia has initiated pilot projects focusing on the development of CCS/CCUS potential in industrial zones, particularly in Sumatra and Kalimantan (Suryani, 2024). In 2021, through the Ministry of Energy and Mineral Resources (MEMR), Indonesia prioritized research and development of CCS and CCUS technologies, alongside plans for the construction of supporting infrastructure, including underground CO_2 storage units (Putri, Sasongko, & Yoesgiantoro, 2024).

Implementation of Carbon Tax in 2022 (Enforcement of Law No. 7/2021)

In 2022, Indonesia began implementing a carbon tax policy. This initiative is governed by Law No. 7 of 2021 on the Harmonization of Tax Regulations (HPP Law), specifically Article 13, which provides the legal basis for imposing taxes on carbon emissions that harm the environment (Suryani, 2022). The carbon tax aims to internalize the external costs of greenhouse gas (GHG) emissions while supporting Indonesia's efforts to achieve its Nationally Determined Contribution (NDC) targets.

This policy aligns with the "polluter pays" principle, under which those responsible for pollution are held accountable for its impacts. The implementation of the carbon tax is expected to serve as a fiscal tool to reduce GHG emissions and stimulate investment in clean technologies (Pratama & Mumpuni, 2025). The carbon tax was planned to be rolled out in phases, beginning on July 1, 2022. Initially, the tax was imposed on coal-fired power plants (PLTUs) at a starting rate of IDR 30 per kilogram of CO_2 equivalent. By 2025, the carbon tax is expected to extend to other sectors in tandem with the development of national carbon market infrastructure and mechanisms (Suryani, 2022).

Realization of 13.9% Renewable Energy Mix and Expansion of Electric Vehicles in 2023

In 2023, Indonesia marked two notable milestones in its climate change mitigation efforts: an increased share of renewable energy in the national energy mix and a significant expansion in the adoption of electric vehicles. According to the Ministry of Energy and Mineral Resources (MEMR), the contribution of renewable energy to the country's primary energy mix reached 13.1% by the end of 2023, equivalent to 238.1 million barrels of oil equivalent. This figure represented an improvement from the previous year, yet it remained below the national target of 17.9% for 2023 and the overarching goal of 23% by 2025.

To bridge this gap, the Indonesian government outlined a comprehensive strategy. The plan includes the construction of 10.6 gigawatts (GW) of renewable power plants by 2025, implementation of rooftop solar PV programs with a target of 3.6 GW, conversion of diesel-powered electricity generators to renewable sources, expansion of the mandatory B35 biodiesel program targeting 13.9 million kiloliters, and the integration of biomass co-firing in coal-fired power plants with a target of 10.2 million tons by 2025. Simultaneously, the electric vehicle (EV) sector experienced a rapid surge. In 2023, the number of EVs increased by 179% compared to the previous year, reaching 116,438 registered units. This growth was driven by supportive government policies, including a mix of financial and non-financial incentives, as well as the accelerated

development of public EV charging infrastructure. The expansion of charging stations (SPKLU) was particularly significant, enabling broader operational feasibility for EV users across the country and reinforcing Indonesia's transition toward a low-carbon transportation system.

Indonesia's Adaptation to Climate Change

Adaptation to climate change refers to the capacity to adjust to its impacts, with the aim of reducing potential risks, taking advantage of possible positive effects, and managing or rectifying the consequences that arise (Perdinan, 2014). In the context of Indonesia, climate adaptation is a critical component of the nation's broader climate resilience framework. It involves the formulation and implementation of policies and practices that not only prevent or minimize environmental and socioeconomic vulnerabilities but also enhance the country's ability to respond effectively to extreme weather events, sea-level rise, and shifting agricultural patterns caused by climate variability. Adaptation measures may include strengthening infrastructure resilience, promoting climate-resilient agricultural systems, ensuring water resource sustainability, and engaging communities in risk reduction strategies. Through these efforts, Indonesia seeks to safeguard its ecosystems and livelihoods against the escalating threats posed by climate change.

Battery Electric Vehicle (BEV) Program in Indonesia

Indonesia has embarked on a transformative journey toward a cleaner and more sustainable transport system by accelerating the development of Battery Electric Vehicles (BEVs). This initiative aligns with the nation's broader commitments to climate mitigation, particularly in achieving its enhanced Nationally Determined Contributions (NDCs) and its Net Zero Emission (NZE) target by 2060. By 2030, the Indonesian government aims to deploy approximately 13 million electric motorcycles and 2 million electric cars, representing a significant shift in national mobility and energy consumption patterns (CNBC, 2021).

1. Fiscal and Non-Fiscal Incentives to Stimulate Market Demand

To support this transition, Indonesia has introduced a comprehensive policy framework combining both fiscal and non-fiscal incentives. The Ministry of Finance reported that tax-based incentives now account for approximately 32% of the purchase price of electric vehicles (EVs) and 18% for electric motorcycles. These include tax holidays of up to 20 years for manufacturers, super tax deductions of up to 300% for research and development activities, and exemptions from Value-Added Tax (VAT) on the import and procurement of EV-related machinery and production equipment. Electric motorcycles receive targeted subsidies, particularly for low-income groups such as MSME operators who are beneficiaries of KUR (People's Business Credit), BPUM (Micro Business Productive Assistance), wage subsidy recipients, and subsidized electricity customers. In addition, converted electric motorcycles (from conventional engines) face no recipient restrictions. However, all manufacturers must comply with a minimum 40% domestic component requirement (TKDN), ensuring that the policy simultaneously supports the growth of domestic industry (Suartika, 2023). Moreover,

regional tax incentives play a vital role in improving the cost competitiveness of EVs. These include a 90% reduction in the Vehicle Ownership Transfer Fee (BBNKB) and Motor Vehicle Tax (PKB). The luxury goods tax (PPnBM) has also been reduced to 0% for domestically manufactured EVs, compared to 15% for conventional vehicles. For imported EVs, the government has waived import duties for vehicles brought in under CKD (completely knocked down) and IKD (incompletely knocked down) schemes, particularly those coming from countries with which Indonesia has bilateral and regional trade agreements, such as South Korea and China.

2. Scaling Up Charging and Battery Infrastructure

Infrastructure development remains a critical pillar of Indonesia's EV roadmap. By April 2024, a total of 1,566 public EV charging stations (*Stasiun Pengisian Kendaraan Listrik Umum*, or SPKLU) and 1,772 battery swapping stations had been established. The government's long-term goal is to expand this infrastructure dramatically targeting 48,118 SPKLU and 196,179 battery swapping stations nationwide by 2030.

Recognizing the importance of ease of investment and regulatory clarity, the Ministry of Energy and Mineral Resources (MEMR) has simplified licensing requirements through Regulation No. 5 of 2021. Investors can now obtain SPKLU permits with only proof of land ownership or lease agreements, eliminating the need for recommendations from local governments. This regulatory streamlining is expected to increase private sector participation and speed up infrastructure rollout (MEMR, 2021).

3. Building a Domestic Battery Ecosystem Anchored in Indonesia's Mineral Wealt

Indonesia's ambition to become a global EV and battery hub is underpinned by its vast mineral reserves, particularly nickel the most critical raw material in lithium-ion batteries. To leverage this potential, the government has initiated the development of a fully integrated battery industry, from upstream mining to downstream battery cell production and recycling.

By early 2024, nine companies were actively engaged in processing nickel ore into battery-grade materials such as nickel sulfate and cobalt sulfate. Of these, four facilities are already operational, three are under construction, and two are in the feasibility study phase. Additionally, a flagship battery manufacturing plant in Karawang has begun producing electric vehicle batteries for four-wheeled vehicles. Indonesia's strategy also includes expanding the precursor, cathode, and anode manufacturing base, as well as establishing national capacities for battery recycling and second-life battery applications (Santoso et al., 2023). This integrated industrial policy not only supports domestic supply chains but also positions Indonesia competitively in the global EV market. Moreover, this approach aligns with the principles of a just and inclusive energy transition by creating new jobs, promoting technology transfer, and generating value-added downstream industries.

4. Environmental and Strategic Implications

The BEV development program is closely tied to Indonesia's broader sustainability agenda. By promoting the electrification of transport, the government aims to reduce the country's dependency on fossil fuels, decrease urban air pollution, and substantially cut

emissions from one of the highest-emitting sectors—transportation. From a strategic standpoint, reducing reliance on oil imports and increasing renewable energy usage through vehicle electrification also enhances national energy security. The policy further reinforces Indonesia's role in global climate governance, positioning the country as a leader among emerging economies in decarbonizing the transport sector.

Achievements in Climate Diplomacy, Mitigation, and Adaptation (2015–2023)
Between 2015 and 2023, Indonesia has made substantial progress in implementing its climate diplomacy agenda alongside mitigation and adaptation efforts. These efforts have resulted in notable achievements across various strategic sectors:

1. Forestry and Land Use Sector

Indonesia has demonstrated a strong commitment to reducing emissions from deforestation and forest degradation, in alignment with the Paris Agreement and its Nationally Determined Contributions (NDCs). One key achievement is the consistent decline in forest and land fire incidents—from 1.64 million hectares in 2019 to 1.16 million hectares in 2023. This success was driven by improved fire monitoring systems, stricter law enforcement, and multi-stakeholder collaboration (MoEF, 2024). Under the REDD+ scheme, Indonesia has received USD 279.8 million in performance-based payments by 2023, placing it among the top recipients globally (Angelsen, 2017). The launch of the FOLU Net Sink 2030 strategy further underscores Indonesia's ambition to make the forestry and land-use sector a net carbon sink by 2030, targeting the rehabilitation of 600,000 hectares of forest annually and the restoration of 2 million hectares of peatland (World Bank Group, 2023).

2. Energy Sector

Following early-stage infrastructure development between 2020–2021, the government expanded fiscal incentives in 2022. By 2023, electric vehicle (EV) ownership in Indonesia rose to approximately 78,000 units—up from just 1,900 units in 2020 (MEMR, 2024). This transition is projected to reduce energy consumption by 29.79 million barrels of oil equivalent (MBOE) and lower emissions by 7.23 million tons of CO_2 by 2030. Indonesia also became the first ASEAN country to adopt a carbon tax, legislated through Law No. 7 of 2021. The tax was initially applied to coal-fired power plants in April 2022 at a rate of IDR 30 per kg CO_2eq and was supported by green investment incentives (MoF, 2024). Additionally, carbon capture technologies have gained momentum, including the launch of a pilot Carbon Capture and Storage (CCS) project in Gundih, Central Java, in 2021. By 2022–2023, further CCS facilities were announced in Tangguh and Abadi gas fields, alongside regulatory development for CCS in non-oil and gas sectors (Then, 2024).

3. Agriculture Sector

Through the Climate Smart Agriculture (CSA) program, which integrates productivity enhancement, adaptation, and emission reduction, the Ministry of Agriculture

implemented CSA practices in over 100 priority districts by 2020. These practices included the use of climate-resilient crop varieties, water conservation techniques, and the substitution of chemical fertilizers with organic alternatives (Yulianti, 2023). Wetland agriculture also saw innovation through the Alternate Wetting and Drying (AWD) method, reducing irrigation water use and methane emissions. By 2022, AWD had been applied to over 50,000 hectares of rice fields, contributing to a 3% reduction in agricultural emissions compared to 2015 levels (MoEF, 2023). Furthermore, since 2018, Indonesia has accelerated the promotion of organic farming and agroforestry. By 2023, 1 million hectares were converted to organic agriculture, while social forestry programs integrated with agroforestry covered more than 4.8 million hectares. Adaptation efforts have also been bolstered through the establishment of an Agricultural Drought Early Warning System, implemented in ten drought-prone provinces by 2022, helping reduce crop failure rates by up to 20% (Surmaini, 2016).

5. Waste Management and Community-Based Environmental Initiatives

A major milestone in waste management has been the expansion of community-based Waste Banks. From 5,244 units in 2015, the number grew to over 13,000 by the end of 2023, significantly reducing the volume of waste directed to landfills by 7–10% in major cities such as Yogyakarta, Surabaya, and Denpasar (EKON, 2015). The Climate Village Program (ProKlim) has also played a pivotal role in driving grassroots-level adaptation and mitigation efforts. From just 400 registered sites in 2016, ProKlim expanded to 7,264 sites by 2023 across all Indonesian provinces. The program promotes household-based waste management, energy and water conservation, and land rehabilitation (Hasbullah & Assyahri, 2024). Internationally, Indonesia committed to reducing marine plastic waste by 70% by 2025, as announced at the 2017 World Ocean Summit in Bali. As of 2023, Indonesia had already reduced marine plastic waste by approximately 35% from 2017 levels (Coordinating Ministry for Maritime Affairs, 2023).

6. Marine Ecosystems and Adaptation

In 2020, the government launched the Integrated Mangrove Rehabilitation Program, targeting the restoration of 600,000 hectares by 2024. By the end of 2023, approximately 440,000 hectares had been rehabilitated, making Indonesia a global leader in mangrove restoration (House of Representatives, 2021). Peatland restoration also progressed, with 1.9 million hectares rehabilitated by 2023, significantly reducing peat fires and carbon emissions (Bappenas, 2022). At the global level, Indonesia has championed Blue Carbon diplomacy—the protection of marine and coastal ecosystems as carbon sinks. At COP26 in Glasgow (2021), Indonesia officially introduced its Blue Carbon strategy. Marine conservation areas expanded from 17 million hectares in 2015 to over 28.4 million hectares by 2023, approaching the national target of 32.5 million hectares by 2030 (Ministry of Marine Affairs and Fisheries, 2025).

7. **Regional and International Diplomacy**

At the regional level, Indonesia spearheaded the ASEAN Joint Statement on Climate Change submitted to the UNFCCC COP26 in Glasgow (2021), demonstrating ASEAN's

collective commitment to climate action. During the 2023 ASEAN Summit in Labuan Bajo, Indonesia led efforts to establish the ASEAN Centre for Climate Change (ACCC) in Brunei Darussalam. Internationally, Indonesia secured a landmark achievement through the launch of the Just Energy Transition Partnership (JETP) at the 2022 G20 Summit in Bali, securing USD 20 billion in funding commitments from partners including the United States, Japan, and the European Union. JETP aims to accelerate the decarbonization of Indonesia's power sector and bring forward the peak emissions timeline to before 2030 (EKON, 2025). This initiative is considered one of the largest energy transition partnerships for developing countries (Hermawan & Prabhawati, 2024). Indonesia also actively participated in successive UNFCCC COPs—COP25 in Madrid (2019), COP26 in Glasgow (2021), and COP27 in Sharm El-Sheikh (2022)—consistently reaffirming its Net Zero Emission goal for 2060 and supporting South–South Cooperation to share adaptation technologies and best practices (Lukmadi & Sitabuana, 2022).

CONCLUSION

Indonesia has demonstrated a strong commitment to addressing climate change through climate diplomacy integrated with mitigation and adaptation policies. Since signing the Paris Agreement, the country has enhanced its greenhouse gas (GHG) emission reduction targets through its Enhanced Nationally Determined Contribution (NDC) and implemented strategic policies such as the REDD+ program and the National Energy General Plan (RUEN). Its success in securing international incentives such as USD 279.8 million from the REDD+ scheme—and its active participation in international forums like the COP and G20 illustrate Indonesia's leadership role in climate diplomacy. On the adaptation front, initiatives such as the development of electric vehicles and mangrove ecosystem rehabilitation have contributed significantly to climate resilience. While challenges persist, Indonesia's efforts in mitigation and adaptation provide a potential model for other countries. With sustained commitment, Indonesia holds the potential to achieve its net zero emission vision by 2060.

REFERENCES

Afandi, F. A. (2022). PEMANFAATAN PRESIDENSI INDONESIA DALAM G20 UNTUK PEMBANGUNAN EKONOMI HIJAU DAN DEKARBONISASI INDONESIA 2060. *Jurnal Analisis Kebijakan*, 86-95.

Angelsen, A. (2017). *Reducing Emissions from Deforestation and Forest Degradation (REDD+): An Overview.* Bogor: CIFOR.

Anugraheni, B. D., Pramuditha, G., Asmoro, P. V., & Hanifah, U. (2023). Akselerasi Net Zero Emissions Dengan Implementasi Energi Baru Terbarukan (EBT) Sebagai Bentuk Upaya Sustainable Development Goals (SDGs). *SEMINAR NASIONAL & CALL FOR PAPER HUBISINTEK*.

Austin. (2014). Indonesia's forest moratorium: impacts and next steps. *Forest Policy and economics*.

Bappenas. (2019). *Low Carbon Development: A Paradigm Shift Towards a Green Economy in Indonesia.* Jakarta: Bappenas.

Bappenas. (2022). *Strategi Nasional Pengelolaan Lahan Basah: Ekosistem Gambut dan Mangrove.* Jakarta: Bappenas.

Barus, E. B., & Wijaya, S. (2021). Penerapan Pajak Karbon di Swedia dan Finlandia Serta Perbandingannya Dengan Indonesia. *Jurnal Pajak Indonesia*, 256-279.

CIFOR. (2020). *The Politics of REDD+ Benefit Sharing: Insights from Indonesia.* Jakarta: CIFOR.

CNBC. (2021). *PPnBM 0%, Begini Target Penggunaan Mobil Listrik RI.* Jakarta: CNBC Indonesia.

DPR RI. (2021). *Tantangan Rehabilitasi Hutan Mangrove.* Jakarta: DPR RI.

EKON. (2015). *KAJIAN KEBIJAKAN DAN STRATEGI NASIONAL PERCEPATAN PENGELOLAAN PERSAMPAHAN.* Jakarta: EKON.

EKON. (2025). *Perkuat Komitmen Percepatan Implementasi Just Energy Transition Partnership (JETP), Pemerintah Bentuk Satgas Transisi Energi dan Ekonomi Hijau.* Jakarta: EKON.

ESDM. (2020). *Statistik EBTKE 2020.* Jakarta: ESDM.

ESDM. (2021). *Percepat Pembangunan Infrastruktur SPKLU, Pemerintah Berikan Insentif dan Kemudahan Perizinan.* Jakarta: ESDM.

ESDM. (2024). *Laporan Kinerja Kementerian Energi dan Sumber Daya Mineral 2024.* Jakarta: ESDM.

ESDM. (2024). *Laporan Kinerja Sekretariat Jenderal.* Jakarta: ESDM.

ESDM. (2024). *Menteri ESDM Ungkap Strategi Penuhi Target Bauran Energi dari EBT.* Jakarta: ESDM.

ESDM, K. (2024). *Strategi Percepatan Pemanfaatan Kendaraan Listrik di Indonesia.* Jakarta: ESDM.

Fajar. (2024). *Kerjasama Indonesia-Norwegia Melalui Skema Reducing Emission From Deforestation and Degradation (REDD+) di Kalimantan Tengah.* Jakarta: Universitas Satya Negara Indonesia.

Hasbullah, R., & Assyahri, W. (2024). Tinjauan Implementasi Program Kampung Iklim. *JPAMS : Journal of Public Administration and Management Studies*, 1-11.

Haumahu, S., Uneputty, P. A., Handoko, L., Kesaulya, I., & Tuapattinaja, M. A. (2023). Sosialisasi Dampak Perubahan Iklim terhadap Eksistensi Sumberdaya Perikanan Pulau-pulau Kecil Bagi Masyarakat Nelayan Maluku Tengah. *Open Community Service Journal*.

Hermawan, L. T., & Prabhawati, A. (2024). Implementasi Just Energy Transition Partnership Indonesia. *JEBT: Jurnal Energi Baru & Terbarukan*, 28-38.

Hulu, H. B., Nau, N. U., & Seba, R. O. (2024). Analisis Efektivitas Paris Agreement Terhadap Indonesia Sebagai Anggota G20 Dalam Menangani Climate Change. *Jurnal Niara*, 280-298.

Ikhitiarin, A. D., Agustin, V. M., Nethan, A., Yuel, M. V., Wiratma, H. D., & Subandi, Y. (2023). DINAMIKA KERJA SAMA INDONESIA – NORWEGIA DI BIDANG LINGKUNGAN HIDUP MELALUI PROGRAM REDUCING EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION (REDD+) TAHUN 2017-2021. *Junal Ilmiah Dinamika Sosial*.

Institute for Essential Services Reform. (2023). *Indonesia Energy Transition Outlook 2023.* IESR.

IPCC. (2022). *Climate Change 2022: Impacts, Adaptation and Vulnerability.* Jakarta: IPCC.

JETP Indonesia. (2023). *JETP Comprehensive Investment and Policy Plan.* Jakarta: JETP INDONESIA.

Jon Hovi, G. B. (2016). The Paris Agreement: Short-Term and Long-Term Effectiveness. *Politics and Governance*, 209-218.

Kemenkeu. (2016). *Anggota G20.* Jakarta: Kemenkeu.

Kemenkeu. (2022). *Laporan KTT G20 di Bali.* Jakarta: Kemenkeu RI.

Kemenkeu. (2023). *Dorong Pemanfaatan KBLBB, Pemerintah Luncurkan Program Insentif Fiskal.* Jakarta: Kemenkeu.

Kemenkeu. (2024). *Menuju Implementasi Pajak Karbon.* Jakarta: Kemenkeu.
Kemenko Marves. (2023). *Di Hadapan Negara AIS, Kemenko Marves: Indonesia Berhasil Kurangi Sekitar 36% Kebocoran Sampah Laut.* Jakarta: Kemenko Marves.
Kementerian Kelautan dan Perikanan. (2025). *KKP Berhasil Tambah Lagi 2 Kawasan Konservasi Laut.* Jakarta: Kementerian Kelautan dan Perikanan.
Klein, R. J. (2017). Integrating mitigation and adaptation into climate and development policy: three research questions. *Environmental Science & Policy*, 579-588.
KLHK. (2023). *Laporan Inventarisasi Gas Rumah Kaca Nasional Tahun 2023.* Jakarta: KLHK.
KLHK. (2023). *Optimalisasi Dana REDD+.* Jakarta: Ditjen PPI KLHK.
KLHK. (2024). *Bulan Maret 2024- Kanal Komunikasi.* Jakarta: KLHK RI.
KLHK. (2024). *Kemajuan Aksi Perubahan Iklim Indonesia.* Jakarta: KLHK RI.
KLHK. (2024). *Prioritas Diplomasi Delegasi Indonesia Pada Konferensi Tingkat Tinggi PBB Mengenai Perubahan Iklim Yang Ke-29 (COP-29) UNFCCC Tahun 2024.* Jakarta: KLHK.
KLHK. (2025). *Agroforestry Perhutanan Sosial Untuk Mendukung Ketahanan Pangan.* Jakarta: KLHK.
Lukmadi, F. K., & Sitabuana, T. H. (2022). COP26: PERAN INDONESIA DALAM DINAMIKA CLIMATE ACTION TERHADAP POROS PENANGGULANGAN PERUBAHAN IKLIM DI INDONESIA. *Jurnal Serina Untar*, 257-262.
MENLHK. (2020). *Kemitraan Indoneisa-Norwegia Memberikan Manfaat Lokal dan Dampak Global.* Jakarta: MENLHK.
MENLHK. (2021). *Rencana Operasional Indonesia FOLU Net Sink 2030.* Jakarta: MENLHK.
Pahlevi, R., Thamrin, S., Ahmad, I., & Nugroho, F. B. (2024). Masa Depan Pemanfaatan Batubara sebagai Sumber Energi. *JEBT: Jurnal Energi Baru & Terbarukan*, 50-60.
Perdinan. (2014). PERUBAHAN IKLIM DAN DEMOKRASI: KETERSEDIAAN DAN AKSES INFORMASI IKLIM, PERANAN PEMERINTAH, DAN PARTISIPASI MASYARAKAT DALAM MENDUKUNG IMPLEMENTASI ADAPTASI PERUBAHAN IKLIM DI INDONESIA. *Hukum Lingkungan*, 110-132.
Pratama, L. A., & Mumpuni, N. W. (2025). ANALISIS PENGATURAN PAJAK KARBON DI INDONESIA DITINJAU DARI PRINSIP PENCEMAR MEMBAYAR (POLLUTER PAYS PRINCIPLE) : STUDI KOMPARATIF DENGAN NEGARA SINGAPURA ANALYSIS OF CARBON TAX SETTINGS IN INDONESIA REVIEWED FROM THE (POLLUTER PAYS PRINCIPLE) : COMPARATI. *Jurnal Hukum Lex Generalis*, 1-29.
Putri, A. D., Sasongko, N. A., & Yoesgiantoro, D. (2024). Carbon Capture Storage dan Carbon Capture Utilization Storage (CCS/CCUS) sebagai Solusi Transisi Energi Fosil di Indonesia. *PENDIPA Journal of Science Education*, 191-203.
Rijal, N. K. (2020). The Role of Global Civil Society at The Local Level in Climate Changes Mitigation: A Case Study of Earth Hour's Activity in Malang. *Global: Jurnal Politic International*, 191-220.
Santoso, R. B., Moenardy, D. F., Muttaqin, R., & Saputera, D. (2023). Pilihan Rasional Indonesia dalam Kebijakan Larangan Ekspor Bijih Nikel. *Indonesian Perspective*, 154-179.
Satwika, W. F. (2020). Komitmen Indonesia dalam Mematuhi Perjanjian Kerjasama REDD+ Indonesia-Norwegiaterhadap Upaya Penanganan Deforestasi dan Degradasi Hutan di Indonesia. *Journal of International Relations*, 288-298.
Sayyidati, A. (2017). Isu Pemanasan Global Dalam Pergeseran Paradigma Keamanan Pada Studi Hubungan Internasional. *Jurnal Hubungan Internasional*.
Seftina Kuswardini, S. P. (2022). Diplomasi Perubahan Iklim Indonesia Pada Masa Pandemi Covid-19. *Jurnal Dinamika Global*, 274-294.
Siraj, H. (2019). Indonesian Policy in Ratifying The 2015 Paris Agreement. *Global: Jurnal Politik Internasional*, 70-100.

Soraya, A. D. (2023). Kebijakan Investasi Hijau dalam Perundang-Undangan Indonesia Sebagai Upaya Penurunan Emisi Grk Nasional Menuju E-NDC 2030. *UNES Law Review*, 5321-5333.

Suartika, I. P. (2023). *Percepat Pengembangan Industri Kendaraan Listrik Guna Mendorong Transformasi Ekonomi Hijau (Green Economy) Yang Berkelanjutan.* Jakarta: Lemhanas.

Subiyanto, A. (2024). Diplomasi Iklim: Upaya Menyelamatkan Bumi dari Krisis Iklim? *PENDIPA Journal of Science and Education*, 27-34.

Surmaini, E. (2016). Pemantauan dan Peringatan Dini Kekeringan di Indonesia. *Jurnal Sumberdaya Lahan*, 37-50.

Suryani, A. S. (2022). Persiapan Implementasi Pajak Karbon di Indonesia. *Kajian Singkat Terhadap Isu Aktual dan Strategis*, 19-24.

Suryani, A. S. (2024). Potensi dan Tantangan Implementasi Carbon Capture and Storage di Indonesia. *Kajian Singkat Terhadap Isu Aktual dan Strategis*.

Tampubolon, A. (2020). *RUEN.* Jakarta: IESR.

Then, P. P. (2024). Implementasi Hasil Konferensi Perubahan Iklim ke-26 (COP26) Terhadap Pengembangan Sektor Pertambangan dan Kebijakan Lingkungan di Indonesia. *UPH Journal of International Relations*, 21-40.

Wandira, F. &. (2022). Diplomasi Lingkungan Hidup Indonesia: Isu Mitigasi Perubahan Iklim. *JPPI*, 540.

Wicaksono, D. A., & Yurista, A. P. (2013). Konservasi Hutan Partisipatif Melalui REDD+(Studi Kasus Kalimantan Tengah Sebagai Provinsi Percontohan REDD+). *Jurnal Wilayah dan Lingkungan*, 189-200.

World Bank. (2021). *Enhancing Forest Carbon Partnership in Southeast Asia.* Waashington DC: World Bank.

World Bank Group. (2023). *Laporan Iklim dan Pembangunan Negara Indonesia 2023.* Washington: World Bank Group.

Yulianti, K. &. (2023). Upaya Indonesia Menjaga Keamanan Pangan (Food Security) Melalui Paris Agreement of Climate Change. *Indonesian Perspective*, 263-285.