

Indonesia–US Partnership for Sustainable Renewable Energy (2022–2024): Promoting Sustainable Development and Green Economy

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ABSTRACT

This research aims to analyze Indonesia and The United States cooperations in sustainable renewable energy at 2022-2024 for promoting and supporting sustainable development and green economy. To ensure the comprehensive analysis, this research will utilize two concepts as the foundation. These concepts contain the green economy concept and the sustainable development concept. Green economy concept by Jose A. Puppim which is defined as the growth in the economy should be driven by investment that reduces carbon emissions, enhances energy and prevents the loss of biodiversity and ecosystem. The secondary concept is sustainable development by Sergey and Michal which is defined as increasing responsibility for achieving a balance between current and future needs. This research is a qualitative descriptive method to identify the steps, implementation, and outcomes of the cooperation. Authors use secondary data from official bilateral agreement, government reports, news, journals, and secondary sources from credible institutions. US-Indonesia partnership priority capacity building, technology transfer, and direct investment to support the sustainability of the energy and the environment. In 2023, the United States and Indonesia created an agreement in collaboration in sustainability energy and minerals. This agreement was marked with signing a Memorandum of Understanding that also supported the Energy Resources Governance Initiative (ERGI) and Clean Energy Demand Initiative (CEDI). The partnership between Indonesia and the US reflects a strategic cooperation to reach sustainable energy and to implement the green economy.

Keywords: *Partnership, Renewable Energy, Green Economy, Sustainable Development, Clean Energy*

INTRODUCTION

Indonesia, as a rapidly developing country with a growing economy and increasing energy demands, finds itself at a critical juncture. It is confronted with a dilemma: to prioritize economic growth or to safeguard environmental sustainability. In the global context, Indonesia is recognized as a significant contributor to carbon emissions. To address this challenge, the government has implemented a series of strategic measures, establishing ambitious targets for the transition to renewable energy sources. The government of Indonesia has demonstrated a definitive commitment to reducing its carbon footprint by accelerating the development and utilization of renewable energy sources. A critical component of the strategy is the objective of attaining a 23% share of renewable energy in the nation's total energy consumption by the year 2024. In a significant development, Indonesia has established ambitious long-term targets to achieve Net Zero Emissions (NZE) by the year 2060 (Hermawan & Prabhawati, 2024).

The 2022-2024 Indonesia-United States Partnership for Renewable Energy (IRES) is a significant initiative that emerged in response to the pressing need for Indonesia to transition from fossil fuels to renewable and sustainable energy sources. During this period, both nations have demonstrated a commitment to promoting sustainable and equitable economic growth as part of a broader global strategy to address the challenges posed by the post-pandemic environment and to facilitate the post-pandemic economic recovery. This partnership is predicated on the high level of greenhouse gas emissions in Indonesia, which are primarily derived from the combustion of fossil fuels, as well as Indonesia's aspiration to reduce these emissions substantially and achieve the Net Zero Emissions (NZE) target.

The partnership that has been established is predicated on the recognition that a significant proportion of Indonesia's greenhouse gas emissions are attributable to the combustion of fossil fuels. Indonesia has set an ambitious target of reducing its emissions substantially by the year 2060, in line with the Net Zero Emissions (NZE) objective. Notwithstanding, the transition to a sustainable energy source is confronted with substantial impediments, primarily due to the scarcity of domestic resources and the necessity for large-scale investments. Therefore, it is imperative to establish collaborative relationships with the United States and other international partners. The provision of financial support and the transfer of technology are imperative for the efficient and equitable study of renewable energy sources.

This partnership is also an integral part of the broader global initiative, known as the Just Energy Transition Partnership (JETP). The Joint Statement on the Principles for a Transitional Framework (JETP) was formally initiated during the 2022 G20 Leaders' Summit in Bali. This initiative has allocated substantial financial resources, amounting to over \$20 billion, to Indonesia, with the objective of facilitating a just and sustainable transition to a renewable energy infrastructure. The financial resources in question are of a diverse provenance, including various countries with which the nation has established cooperative relationships, namely the United States, Japan, Canada, and the European Union. The financial resources in question are allocated through the mechanisms of grants, loan agreements with favorable terms, and investments from private entities. The primary objective of this endeavor is the study of solar energy, the enhancement of energy efficiency, and the development of environmentally sustainable technologies. These initiatives are not solely intended to reduce reliance on fossil fuels; they are also designed to promote inclusive and competitive economic growth that is environmentally sustainable.

Initiatives of international scope, such as the Joint Program on Renewable Energy Partnership between Indonesia and the United States (2022-2024), serve as foundational elements in the transition to a renewable energy infrastructure. The objective of this collaboration is twofold: first, to accelerate the process of energy extraction, and second, to reduce the consumption of fossil fuels. This partnership is not merely an exchange of technology and an increase in capacity; it also involves the allocation of substantial financial resources to support the development of renewable energy systems in Indonesia that are both efficient and equitable.

Despite its considerable potential, Indonesia is confronted with significant challenges in its transition to renewable energy. One of the most significant challenges pertains to financial considerations. A considerable number of renewable energy projects encounter difficulties in securing adequate funding due to the prevailing perception among investors and financial institutions that these projects possess a high degree of risk. The ambiguity surrounding regulatory frameworks has exacerbated the situation, as it has led to a decline in the appeal and complexity of these projects in obtaining bank approval (bankable). Moreover, the pervasive dominance of PT PLN, which operates as a monopoly within the electricity sector, poses a significant challenge. The presence of a system of monopolization has been identified as a significant impediment, as it has been demonstrated to impede the process of integrating renewable energy projects into the national electrical grid. Consequently, the rate of energy dissipation is reduced (Lestari, 2021).

The partnership between Indonesia and the United States in the field of renewable energy from 2022 to 2024 has been demonstrated to be of significant strategic importance in addressing the various challenges associated with the transition to renewable energy sources. This cooperative endeavor is not merely limited to the pursuit of net energy savings and the mitigation of reliance on fossil fuels; it also offers concrete solutions through the transfer of technology, financial support, and enhancement of human and institutional capacity.

The utilization of advanced technologies from the United States presents a significant opportunity for Indonesia to foster inclusive, sustainable, and competitive economic growth. The Just Energy Transition Partnership (JETP) is a collaborative effort between the two nations to promote equitable and environmentally sustainable development. The initiative aims to enhance national competitiveness and improve the quality of life for the population.

In light of the aforementioned background, the following question is identified as the focal point of this study: The following research problem will serve as a foundation for a more in-depth examination of the mechanisms, achievements, and challenges encountered during the implementation of the joint work between Indonesia and the United States in the field of renewable energy. This joint work also promotes the green economy and sustainable development from 2022 to 2024. The objective is twofold: first, to establish a strategy that will achieve the desired goals in the context of sustainable development and climate change mitigation; and second, to implement that strategy.

METHODS

This study employs a qualitative descriptive approach with the objective of providing a comprehensive and detailed account of the partnership between Indonesia and the United States in the field of sustainable energy research from 2022 to 2024. This approach is characterized by its emphasis on the disclosure of factual information, the presentation of actual conditions, and the systematic execution of processes. This systematic approach is designed to facilitate a comprehensive understanding of the subject under investigation. In the context of the

partnership concerning renewable energy, the qualitative descriptive method is an appropriate tool for examining the extent to which the aforementioned tasks are carried out and the impact of these tasks on the sustainable development of the project in a comprehensive manner.

The data utilized in this study is secondary in nature and was obtained through a documentation study. The primary sources of data encompass literature reviews, scientific journals, and official reports from relevant government agencies and international organizations. The data collection process entailed a comprehensive review and compilation of documents pertaining to the shared objectives between Indonesia and the United States concerning energy conservation. This approach ensured the reliability and scientific validity of the obtained information, obviating the necessity for in-person observation or interviews.

The qualitative descriptive method is well-suited for the evaluation of international policies and programs, including those focused on the development of renewable energy, as it is adept at producing data that is both rich and contextual. According to (Creswell, 2009), the purpose of qualitative descriptive research is to facilitate researchers in comprehending the essence and the sociocultural context of a given phenomenon. In addition, this approach can serve as a foundation for decision-makers to formulate effective strategies that support the transition to a green energy future.

RESULT AND DISCUSSION

US-Indonesia Cooperations in Renewable Energy

The cooperation between Indonesia and the United States in renewable energy from 2022 to 2024 aims to promote a clean and renewable energy transition while supporting economic development. This cooperation includes funding, investments, policy framework suggestions, knowledge sharing, and technical assistance. On February 2nd, 2022, Indonesia, through the Directorate General of Electricity, held an online webinar in collaboration with the United States Agency for International Development and the Hawai'i Natural Energy Institute (HNEI) to promote Indonesia's energy transformation from non-renewable energy to renewable energy through knowledge sharing and learning from Hawaii which already successfully transformed non-renewable energy to renewable energy. Hawaii successfully utilized wind and solar energy. Indonesia could implement the same strategy in certain regions that still use fossil fuels or still rely on gas. Indonesia believes the energy transformation will not merely protect the environment or reduce emissions, but additionally, will reduce the cost of supply (Transformasi Energi, Indonesia Belajar dari Kisah Sukses Hawaii, 2022).

On August 3rd, 2022, a memorandum of understanding (MoU) was signed by Indonesia's national electricity power utility company, PT PLN Persero, as Indonesia's representative, with the United States Agency for International Development (USAID) to expand the partnership between Indonesia and the United States in the electricity sector transition to sustainable energy with the utilization of renewable energy and advancing systems. This Partnership is under the auspices of

the Ministry of Energy and Mineral Resources. Through this agreement, USAID will assist Indonesia further in developing viable frameworks to implement decarbonization in the electricity sector, such as identifying potential incentives to increase investments in renewable energy in Indonesia to support the Indonesian government in achieving Net Zero Emissions by 2060 or earlier, which aligns with the Paris Agreement. Moreover, this MoU contributes to the objectives of the United States and Indonesia bilateral working group, USAID 2022-2030 Climate Strategy, and clean EDGE Asia. As part of the planned activities on the MoU, Indonesia and the United States plan to increase knowledge sharing, accelerate clean energy transitions, and provide expertise and technical assistance for policymakers in achieving Indonesia's development through advanced electricity services expansion to support sustainable development and inclusive economic growth, while contributing to protecting the environment and reducing carbon emissions (U.S. Embassy Jakarta, 2022).

On March 16th, 2023, Indonesia, through the Ministry of Energy and Mineral Resources, and the United States signed the MoU of Indonesia-United States Clean Energy Working Group to mark the establishment of the Clean Energy Development Working Group in Indonesia. This agreement promotes a bilateral partnership between Indonesia and the United States in clean and renewable energy that includes various fields such as cybersecurity, bioethanol, geothermal, smart city technology, Small Modular Reactor technology, and Carbon Capture Utilization and Storage (CCUS). Indonesia uses the Clean Energy Development Working Group to support electrification development goals in Indonesia, with an initial focus on achieving 23% of its energy mix from renewable energy by 2025 and achieving Net Zero Emissions by 2060 or earlier. In alignment with the MoU, Indonesia invited United States businesses to collaborate through investment and help to improve the energy transition technology in Indonesia (Ministry of Energy and Mineral Resources, 2023).

From November 10th to 13th, 2024, the President of Indonesia, Prabowo Subianto, visited the United States to enhance economic partnership. During the meeting between Prabowo Subianto and U.S. corporate leaders, he encouraged them to invest in Indonesia, particularly in several key sectors, including the renewable energy sector. He made the statement after attending a meeting with the United States-Indonesia Society (USINDO). USINDO is a non-governmental organization established to enhance the United States' understanding of Indonesia and vice versa, and to strengthen the two countries' relations and their people. The meeting was held on Monday, the second day of his visit, and was attended by 25 representatives from both the United States and Indonesia. The attendees include several leaders of major U.S. companies such as Caterpillar, Citi, Boeing, BP America, S&P Global, ExxonMobil, and Freeport McMoRan. On that occasion, the Indonesian Ministry of Investment, Rosan Roeslani, explained that several companies showed their interest in investing in Indonesia's renewable energy development (Wisnubroto, 2024). On May 22nd, 2024, U.S. International Development Finance Corporation (DFC) Deputy Chief Executive Officer (DCEO), Nisha Biswal, announced a new commitment with a total investment amount of 126 million USD to PT Medco Cahaya Geothermal, one of the electricity companies in

Indonesia. This investment aims to support energy security in Indonesia and achieve the green economy development goals with the United States (Jakarta, 2024).

Green Economy Under the Partnership Frameworks

The partnerships between Indonesia and the United States in renewable energy play a pivotal role in promoting a green economy initiative. According to Jose A. Puppim, the green economy is the growth in the economy that should be driven by investment that reduces carbon emissions, enhances energy, and prevents the loss of biodiversity and ecosystems (Oliveira, 2012). The transition to renewable energy will be essential to protect the environment and to achieve energy independence, which will additionally enable countries to get affordable and sustainable energy supplies. Moreover, the stable energy production and productivity will support the growth and development of the economy. The increased investment in renewable energy in Indonesia, including the investment from the United States through its partnership with Indonesia, supports the increase in job creation. In 2024, renewable energy projects in Indonesia, which are also supported by foreign investments, including from the United States, have successfully led to approximately 13,200 new job creations in Indonesia (Muliawati, 2024). The energy independence through renewable energy is an important tool to achieve energy security, as it reduces the dependency on expensive fossil fuels and the environmental degradation that often requires substantial funding for its management (Virgilijus Dirma, 2024). The partnership between Indonesia and the United States through the MoU signed by PT PLN and USAID on August 3rd, 2022, and the MoU of the Indonesia-United States Clean Energy Working Group supports the green economy implementation, which helps the advancement of energy for industry that leads to economic growth while contributing to reducing emissions. The investments from U.S companies for renewable energy projects in Indonesia through the United States and Indonesia partnership align with the definition of green economy, where the investment is not merely for the development in industry and business, but additionally to protect the environment through reducing emissions and enhancing sustainable energy.

Sustainable Development Concept in the Partnership

The Partnership between the US and Indonesia also reflects the concept of sustainable development. According to (Zhironkin & Cehlár, 2022), Green economy transition is only possible when both production and consumption and all of the industries apply sustainable development. The sustainable development concept demands responsibility from multisectoral stakeholders to achieve a prosperous future. Balancing between current and build sustainable for the future needs of resources, Energy, and economic growth.

SDGs have 17 main goals to prevent various threats to life and realize a sustainable environment (Morton, Pencheon, & Squires, 2017). Through this cooperation, Indonesia reflects efforts to achieve Sustainable Development Goals (SDGs). Especially for the 7th, 8th, 9th, and 13th goals. The collaboration that author mentioned in the previous subsection, such as online webinar that held on February 2022 with Hawai'i Natural Energy Institute (HNEI) to promote Indonesian

transforming energy. By facilitating knowledge and technology transfer to aims lower cost of energy supply in Indonesia. 126 Million USD investment to PT Medco Cahaya Geothermal also support SDG 7 (Affordable and Clean Energy) and green economy development in Indonesia. The effort to achieve the SDG 8 (Decent work and economic growth) by promoting energy transition and sustainable economic growth through new job creation. This cooperation also aims net zero emissions.

The transition from non-renewable energy to renewable energy in several sectors advances innovation in the industrial and infrastructure sector. Innovation takes a crucial part in modernizing the industrial sector in Indonesia. This transition is in line with SDG 9, Which is focus on industries, innovations, and infrastructure. All established partnerships aim for Net Zero Emissions by 2060. The clean energy framework contributes to protecting the environment and enhancing sustainable energy. By promoting zero emission energy, the collaboration assists Indonesia to combat climate change in accordance with SDG 13 (climate action).

CONCLUSION

All cooperation under the auspices of the Indonesian and US governments illustrates Indonesia's goal of achieving the SDGs. The cooperation that has been established can be seen as Indonesia's effort to fulfill SDGs 7, 8, 9, and 13. Several collaborations between Indonesia and the US through USAID demonstrate this connection. The collaboration between PLN and the US is one of the more concrete forms of cooperation under the framework of collaboration between the US and the Ministry of Energy and Mineral Resources. The transfer of modern knowledge and technology supports the creation of industrial innovation and infrastructure that opens up many new job opportunities for the community. This collaboration also enables the creation of a cleaner and more sustainable natural environment by focusing on Net Zero Emissions, which is targeted to be achieved by 2060. Additionally these collaborations also promote a green economy where the economic growth efforts are accompanied by the considerations of environmental protection. The advancements in technology and investments in renewable energy projects by the collaborations between the United States and Indonesia led to job creations and promoting economic growth while contributing in reducing emissions and protecting environmental sustainability. For deepened the analysis, further research can adopt more extensive and explorative quantitative methodology through in-depth interviews directly with the key informants such as people who engage in USAID, Indonesian Governments, U.S companies, and Indonesia companies which accepted the investments from the United States to gain primer data that may difficult to access in public. By understanding the perception and perspectives of the decision-makers, the research can adopt a more holistic approach to define specifically and in depth regarding the collaboration between the United States and Indonesia in renewable energy to promote green economy and sustainable development and its concrete impacts for both countries.

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