

# *Indonesia-UK Cooperation in Promoting Carbon Markets and Just Energy Transition*

Diyah Pitaloka Rizki <sup>1</sup>, Rasel Mochamad Efendi<sup>2</sup>

<sup>12</sup>International Relations, Al Ghifari University, Bandung, Indonesia.

\*Email:

<sup>12</sup>[diyahpitaloka801@gmail.com](mailto:diyahpitaloka801@gmail.com), [efendirasel@gmail.com](mailto:efendirasel@gmail.com)

## **Abstract**

Cooperation between countries is crucial in addressing the serious problem of climate change. This study aims to explain how Indonesia and the United Kingdom work together to support carbon markets and a just energy transition. The method employed is a qualitative approach, utilizing case studies and document analysis, supported by institutional liberalism theory and international cooperation, to understand how both countries cooperate. The results show that the cooperation helped improve Indonesia's carbon emission recording system through SPEI, gave financial support through the UK PACT program, and shared knowledge about renewable energy. Indonesia also had the chance to strengthen its policies on clean energy and reduce greenhouse gas emissions. The UK encouraged Indonesia to make the energy transition in a way that also supports social justice and sustainable development. This cooperation offers benefits to both countries, despite some challenges, including technical readiness and differing domestic policies. Overall, this cooperation brings positive impacts for Indonesia, such as better access to funding, new technology, and a stronger role in international climate diplomacy.

**Keywords:** Indonesia, United Kingdom, Institutional Liberalism, International Cooperations, and Renewable Energy.

## **Introduction**

Climate change has become a crucial problem that many countries need to solve together. Since the industrial era, human activities, especially burning fossil fuels, have caused the Earth's temperature to rise by about 1.1°C. This has led to rising sea levels, more extreme weather, and difficulties in food production (United Nations Indonesia, 2022). Indonesia, which has the third largest tropical forest in the world, and abundant renewable energy resources (Wibowo, 2025), plays an important role in reducing the impacts of climate change. However, there are big challenges, such as still relying on coal for 40% of its energy use and policies that are not well integrated, making it hard to shift to a greener economy (Rohma, 2024).

Many studies show that international cooperation is very important to face these problems. For example, building trust between developed and developing countries is key to managing renewable energy well (Anuar & Dewayanti, 2021). However, specific research on cooperation between Indonesia and the UK, especially regarding carbon markets and a just energy transition, is still limited (Arkantryo et al., 2023).

This study tries to fill several gaps. First, theoretically, there are not many studies linking climate cooperation between Indonesia and the UK with institutional liberalism theory, which explains how countries depend on and cooperate (Axelrod & Keohane, 1985; Keohane, 2012; Keohane & Nye, 1996). Second, from a data perspective, there hasn't been a deep evaluation of how programs like UK PACT

(Partnering for Accelerated Climate Transitions) and SPEI (Indonesia's Greenhouse Gas Emission Reduction Certificate) help Indonesia improve its technical capacity, even though experiences in Morocco show the importance of inclusive funding and policies (El Hafdaoui et al., 2025). Third, from a policy view, issues like coordination between agencies and social justice in the energy transition process need to be discussed further to find good solutions (Krogmann, 2025).

This study focuses on several main questions: How does the cooperation between Indonesia and the UK in the carbon market and just energy transition reflect the principles of mutually beneficial cooperation according to institutional liberalism theory? What are the real effects of the UK PACT and SPEI programs in strengthening Indonesia's capabilities? And finally, how can problems like fragmented policies and social justice be addressed through this cooperation?

The goal of this research is to examine bilateral cooperation from the perspective of institutional liberalism and the concept of interdependence between countries. It also aims to evaluate how effective funding and technology transfer programs like UK PACT are, by comparing experiences in Morocco and Malaysia. Furthermore, this study aims to provide evidence-based policy recommendations that improve coordination between agencies and promote fairness in the energy transition.

This research is expected to broaden the understanding of how institutional liberalism theory applies to climate cooperation between developed and developing countries. Practically, it aims to offer recommendations for improving programs like UK PACT, learning from Morocco's success in renewable energy development. Additionally, the study can help shape fairer policies regarding access to technology and funding, as shown in studies on cooperation with China.

## **Methods**

This study uses a qualitative approach with an intrinsic case study design to examine the cooperation between Indonesia and the United Kingdom in the carbon market and energy transition. The case study design was chosen because it allows for an in-depth analysis of the context, mechanisms, and dynamics of this bilateral cooperation. The research focuses on two main aspects: institutions, which include related policies and programs, and key actors such as the relevant ministries in both countries (Mali, 2023).

Data were collected from various complementary sources. First, policy documents consisting of national regulations and official reports from government agencies and cooperation programs. Second, academic literature from reputable international journals discussing themes of climate and energy cooperation. Third, information from trusted media outlets covering the implementation of related projects.

Data analysis was conducted using thematic analysis. In the initial stage, the researcher identified key patterns such as funding support, technology transfer, and policy challenges. Then, these themes were grouped based on institutional liberalism theory as the main analytical framework (Keohane, 2012). The analysis results were verified by comparing data from various sources through triangulation. To ensure validity and reliability, the research findings were compared with similar studies conducted in other countries, and the coding process was carried out independently by two researchers with a high level of agreement, thereby improving the accuracy of the analysis.

However, this study has limitations, such as limited access to some confidential cooperation documents and potential bias due to focusing on sources in Indonesian and English, which may overlook local perspectives in regional languages.

## Result and Discussion

### Effectiveness of International Cooperation

International cooperation in addressing climate change requires a strong institutional framework to ensure its effectiveness and sustainability. According to institutional liberalism theory proposed by Keohane (2012), institutions act as platforms that help reduce uncertainty, regulate the behavior of states, and facilitate long-term cooperation. In the context of cooperation between Indonesia and the United Kingdom, this effectiveness can be observed through several key aspects.

First, strengthening the carbon market institution is a major focus. The SPEI program (Indonesia's Greenhouse Gas Emission Reduction Certificate), supported by the UK, has helped Indonesia develop a more accurate MRV system (Measurement, Reporting, Verification). This system forms an essential foundation for creating a transparent carbon market (Ministry of Environment of the Republic of Indonesia, 2025). A comparative study by Anuar and Dewayanti (2021) shows that trust between cooperating partners, such as that built within the SPEI program, is a key factor in successful climate governance.

Second, the cooperation does not only focus on emission reduction but also considers social justice through the principle of a just energy transition. As implemented in Morocco (El Hafdaoui et al., 2025), the energy transition process needs to be accompanied by retraining workers in the fossil energy sector and protecting vulnerable communities. Indonesia adopts this principle through the UK PACT program (Partnering for Accelerated Climate Transitions), which provides funding for renewable energy projects in remote areas while involving local communities in the planning and implementation of these projects (Arkantryo et al., 2023).

Third, the theory of complex interdependence by Keohane and Nye (1996) explains how Indonesia and the UK depend on each other to achieve shared climate targets. The UK provides technology and funding, while Indonesia offers great potential for emission reductions, especially through forest management and renewable energy development. However, various challenges such as the ongoing technological capacity gap and less-than-optimal domestic policy coordination must be addressed (Rohma, 2024; Zhao et al., 2011). One approach is through innovative financing, such as blended finance schemes combining public and private sector investments (Wang et al., 2025), as well as strengthening regulations by refining Indonesia Presidential Regulation No. 98 of 2021 regarding the Economic Value of Carbon (Wibowo, 2025).

When compared to cooperation in other countries, such as Malaysia and the European Union or Morocco and Germany, the Indonesia-UK partnership shows some differences. Technology transfer in this cooperation is still limited to projects like UK PACT, whereas in Malaysia-EU it tends to be more evenly distributed through regional schemes, and in Morocco-Germany it is supported by highly advanced direct investments. In terms of funding, Indonesia-UK cooperation receives around £2.8 million over the next three years (Ministry of Environment of the Republic of Indonesia, 2025), while Malaysia-EU and Morocco-Germany obtain different amounts depending on their program scales. Regarding social justice, Indonesia is only beginning to integrate this principle, whereas Morocco makes it a top priority.

Critically, the success of this cooperation is evident from the creation of a strong legal framework through Indonesia Presidential Regulation No. 98 of 2021 and increased technical capacity in Indonesia. However, challenges remain, including the dominance of the UK in setting the cooperation agenda, which shows that the institutional liberalism approach sometimes overlooks power imbalances between developed and developing countries (Krogmann, 2025).

To overcome these challenges, it is recommended to increase funding allocation by adopting the model applied in Morocco, which involves more multilateral partners such as the World Bank and the Asian Development Bank. Additionally, the involvement of local actors, such as indigenous communities and micro, small, and medium enterprises, should be strengthened to ensure that energy transition projects proceed fairly and sustainably (United Nations Indonesia, 2022).

## **Promotion of the Carbon Market**

The promotion of the carbon market can be understood through the framework of institutional liberalism proposed by Keohane (2012). The carbon market functions as an institution that facilitates cooperation between countries through market-based mechanisms, allowing nations to meet emission reduction targets flexibly via carbon credit trading. In addition, this system creates economic incentives that encourage the transition to cleaner energy, as explained by Axelrod and Keohane (1985). In the context of Indonesia-UK cooperation, there are complementary interests; the UK has experience managing the UK Emissions Trading Scheme (UK ETS), while Indonesia offers significant potential for emission reductions in the forestry and energy sectors (Wibowo, 2025). These two countries also exhibit complex interdependence, where the UK requires carbon credits to achieve its net-zero target, and Indonesia needs funding and technology to develop its domestic carbon market (Keohane & Nye, 1996).

The UK's role in developing Indonesia's carbon market is evident through technical support provided via the SPEI program (Indonesia's Greenhouse Gas Emission Reduction Certificate). This program helps Indonesia build a Measurement, Reporting, and Verification (MRV) system that meets international standards. However, comparative studies show that technical support alone is not enough without active participation from the private sector, as seen in Malaysia's experience (Anuar & Dewayanti, 2021). Additionally, financial support is provided through the UK PACT program (Partnering for Accelerated Climate Transitions), which funds training and the development of a digital carbon trading platform. Nevertheless, this funding remains limited and has not yet reached a full national scale (Arkantrio et al., 2023).

In terms of achievements, Indonesia's carbon market has shown significant progress following cooperation with the UK. This success is supported by the adoption of Indonesia's Presidential Regulation No. 98 of 2021 on the Economic Value of Carbon, which serves as a legal foundation for the carbon market in Indonesia, as well as tax incentives that encourage private sector participation (Wang et al., 2025). However, challenges remain, such as overlapping regulations between the Ministry of Environment and Forestry and the Ministry of Energy and Mineral Resources (Rohma, 2024), as well as Indonesia's dependence on imported MRV (Measurement, Reporting, Verification) technology, which limits technological independence (Zhao et al., 2011).

To address these challenges, it is recommended to expand funding by adopting a blended finance model, as implemented in Morocco, where public and private investments, along with multilateral bank support, are involved simultaneously (El Hafdaoui et al., 2025). Strengthening local capacity is also crucial, for example, through collaboration between universities and industry to develop domestically produced MRV technology. Incentives for the private sector should be expanded by improving tax incentive schemes and easing permitting processes to increase investment interest (Wibowo, 2025).

Overall, the cooperation between Indonesia and the UK has achieved tangible progress in strengthening the carbon market, particularly through the development of the MRV system and the funding provided by the UK PACT program. However, to achieve a broader national impact, challenges such as policy coordination and technological dependence must be addressed promptly. Lessons from Malaysia and Morocco show that the sustainability of the carbon market heavily relies on the integration of local actors and innovative financing involving multiple stakeholders.

## **Renewable Energy Transition**

The cooperation between Indonesia and the UK in supporting a renewable energy transition is crucial for achieving emission reduction targets and developing clean energy. Through the lens of institutional liberalism as proposed by Keohane (2012), international institutions serve as connectors that facilitate collaboration between countries in managing resources and technology effectively. The concept of complex interdependence also emphasizes that Indonesia and the UK are mutually dependent, with the UK

providing funding and technology, while Indonesia has significant potential for renewable energy development (Keohane & Nye, 1996).

The transition from fossil fuels to renewable energy is a critical step for Indonesia to meet its Paris Agreement commitments and its net-zero emissions target by 2060. Cooperation with the UK in renewable energy transition focuses not only on emission reductions but also on ensuring that the process is fair and inclusive for all communities (Ministry of Environment of the Republic of Indonesia, 2025). In practice, the UK PACT (Partnering for Accelerated Climate Transitions) program serves as the backbone of Indonesia's energy transition by providing substantial funding for renewable energy projects such as solar and hydro power plants, as well as technical training for smart grid system development (UK PACT, 2024; Ministry of Environment and Forestry of the Republic of Indonesia, 2025).

As a pioneer in renewable energy, the UK provides various forms of support to Indonesia, including funding through the UK PACT program, which backs clean energy projects such as solar and wind power plants and energy efficiency initiatives in the industrial sector (Florentina et al., 2024). Furthermore, the UK shares technology and expertise in integrating renewable energy into the national grid, including energy storage solutions and smart grid systems. This collaboration also helps Indonesia strengthen its energy transition policies, for example by accelerating the phase-out of coal-fired power plants and developing renewable energy in line with Indonesia Presidential Regulation No. 112 of 2022 (Rohma, 2024).

However, Indonesia still faces high dependence on imported technology for renewable energy components, and program implementation at the regional level is not yet optimal, which slows down the overall transition (El Hafdaoui et al., 2025; Rohma, 2024). There are also social challenges, such as the need for reskilling workers in the fossil fuel sector to ensure they are not left behind in the energy economy shift.

To address these issues, efforts are needed to strengthen local capacity through technician training and the development of domestic renewable energy component industries, as well as aligning policies between the central and regional governments to make them more effective and inclusive (Wibowo, 2025). Lessons from the hybrid financing model in Morocco and renewable energy governance in Malaysia can also provide important guidance for improving Indonesia's energy transition strategy (Anuar & Dewayanti, 2021; El Hafdaoui et al., 2025).

The Indonesia-UK cooperation in renewable energy transition has accelerated renewable energy adoption and strengthened national policies. Moving forward, this collaboration is expected to continue until the 2060 target, focusing on expanding projects to remote areas in Eastern Indonesia and increasing the proportion of local components used in each new renewable energy project. In this way, Indonesia's renewable energy transition can progress faster, become more independent, and remain socially equitable, supporting environmentally friendly and inclusive development goals. This collaboration serves as an example of how developed and developing countries can jointly address global challenges in a fair and just manner.

### **Implementation and Challenges**

The cooperation between Indonesia and the UK in the energy transition has shown significant progress, especially in implementing programs that support the development of renewable energy and strengthening the capacity of local human resources. One of the main programs is UK PACT (Partnering for Accelerated Climate Transitions), which allocates £2.8 million over the next three years starting in 2025. This funding is used to support renewable energy projects in five priority provinces, develop a more accurate MRV (Measurement, Reporting, Verification) system, and train local experts to manage clean energy technologies and projects more effectively (Ministry of Environment of the Republic of Indonesia, 2025). In addition, policy support has been provided through the issuance of Indonesia Presidential Regulation No. 112 of 2022 on the acceleration of renewable energy and the establishment of a national carbon registry, which serves as an essential legal foundation for managing the carbon market and energy transition.

However, not everything runs smoothly. Key challenges include overlapping policy coordination between central and regional governments. Differences in sectoral priorities often hinder program effectiveness. Indonesia's dependence on imported technology remains high, with around 60–70% of components for solar power plants still coming from abroad (Pratama, 2021). Technical skill gaps are also a constraint, given the need for experts who can independently operate and maintain renewable energy technologies. From a socio-economic perspective, impacts on fossil fuel workers and unequal energy access in remote areas remain serious concerns (Florentina et al., 2024; Rohma, 2024; Wibowo, 2025).

Compared to other countries, such as Malaysia highlight the importance of integrated governance, even though funding remains a challenge. In Morocco, strengthening local supply chains has been key to success, despite reliance on foreign direct investment. In China, the scale of implementation is massive but faces transparency challenges in large-scale project management. These lessons are relevant for Indonesia in formulating strategies to accelerate its energy transition (Anuar & Dewayanti, 2021; El Hafdaoui et al., 2025; Zhao et al., 2011).

Strategic recommendations to address these challenges include establishing cross-ministerial task forces capable of harmonizing central and regional regulations to avoid conflicts. Developing renewable energy innovation centers and reskilling programs for fossil fuel workers is also crucial to help them adapt to the changing energy economy. In terms of funding, blended finance schemes that combine public and private investments, along with incentives for private investors, are expected to encourage greater investment in the clean energy sector.

Looking ahead, this cooperation is expected to continue contributing to a significant increase in Indonesia's renewable energy capacity. It is also anticipated to create numerous jobs in the green energy sector and reduce greenhouse gas emissions from the energy sector. With the right strategies and close collaboration, Indonesia's renewable energy transition can proceed faster and more inclusively.

## Conclusion

The partnership between Indonesia and the United Kingdom, aimed at bolstering the carbon market and ensuring a fair energy transition, has shown promising results. This success stems from improvements in the MRV system, financial support from the UK PACT program, and the transfer of renewable energy technologies, all of which have strengthened Indonesia's technical abilities and national policies. By leveraging the concepts of institutional liberalism and complex interdependence, this collaboration aligns the interests of both countries: the UK supplies funding, technology, and expertise, while Indonesia offers substantial potential for emission reductions through effective forest management and clean energy development. Despite facing challenges like reliance on imported technology, overlapping policy frameworks, and the necessity to reskill workers in the fossil fuel sector, this partnership could significantly advance Indonesia's net-zero target by 2060. Moving forward, it's essential to concentrate on enhancing local capacity, implementing creative blended finance strategies, and engaging local communities to ensure a just, inclusive, and sustainable energy transition.

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