



The dynamics governance of renewable energy in rural: Insights from Indonesia

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ABSTRACT

Background: Renewable energy in rural areas is a complex issue with interactive effects, thus reveals the dynamics of governance barriers in Indonesia that have not been resolved since the responsibility through the Sustainable Development Goals (SDG) initiative framework was delegated to local (rural) governments to be actualized in the field, but if seen in reality the results have not been significant, so that the expected goals have not been achieved consistently. **Methods:** The study applied a qualitative descriptive approach and content analysis to investigate, comprehend, and analyze the dynamic governance of renewable energy in rural areas, with a special focus on Indonesia. **Finding:** The key findings reveal that crumbling governance is the main issue at the central-local level structure in actualizing the renewable energy initiative. Hence, policy misalignment, duplicated efforts, and inefficient initiatives affect the governance dynamics. **Conclusion:** The study concludes that the Indonesian government (central-local) must intensify the institutional frameworks, foster stakeholder collaboration, simplify regulatory processes, and assist local capacity building to move forward. These steps will enable more efficient, responsive, and sustainable renewable energy governance in rural areas. **Novelty/Originality of this article:** The novelty contributes to the broad scientific implications of renewable energy as a governance framework to elicit prosperity for the community in rural areas of Indonesia and other developing countries based on the Sustainable Development Goals (SDGs) for affordable and clean energy prospects.

KEYWORDS: dynamics governance; renewable energy; rural, Indonesia.

1. Introduction

Renewable energy can be interpreted as the essential element to achieve the Sustainable Development Goals (SDGs), and this concept emphasizes how to actualize affordable and clean energy to secure the global environment. Moreover, that concept also extensively informs all stakeholders globally (e.g., government, NGO, and social communities) who need to participate directly in the environmental aspect and maintain the principle's existence in the long term (United Nation, 2015).

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In addition, renewable energy, notably in rural areas around the globe, especially in the EU, Asia, and America, has become a hot issue that has attracted concern and reveal critical for policymakers, researchers, and activists to engage actively and explore the dynamics of renewable energy from their perspective, approach, and interest to resolve the problematic properly. Hence, some empirical evidence around the globe reveals that the dynamic governance of renewable energy is a hot issue that needs to be addressed with objectivity, purpose, or coherence, and all these aspects could be a benchmark to maintain progress in renewable energy effectively. This fundamental also engages the paradigm of renewable energy as a tremendous tool to provide free access by utilizing natural energy, and adequately meet local needs or preferences while maintaining the impact on the rural community. To affirm this, some empirical evidence assists the explanation above as follows.

First, from a particular perspective, Rietig (2021) conveys that the complexity of various factors of renewable energy in the European Union (EU) needs to be aligned with the urgency of policy outcomes to enhance the essence of renewable energy progress and shape the emergence of multi-level government initiatives. An outline of the complexity of the promotion of renewable energy based on the inspected policy framework reveals the block of outcomes to escalate the progress, which requires an innovative way, such as redesigning the priority with other multi-level government agencies, then, with this way, will transform the urgency of renewable energy based on local needs or actualising the responsibility from the government role as a leading sector to take it the development idea.

Second, Yao (2022) stated in China the renewable energy interpreted as the transformation to elevate the progress in the rural ecosystems and globally they confirm with the renewable energy governance concepts provide the new the part of the most significant progress and play in shaping global energy governance with two components such as institutional aspect and the market aspect, so from this yields through governance it will create the new role to emergence the existence of the renewable energy prospects.

From this, renewable energy can't be overlooked as an instrument to achieve the global goals with the support of many initiatives. Yet, the reason behind the renewable energy will create new insights for the rural community globally to put their role in active development and have a responsibility in their territory to utilize the energy access freely, and of course shaping the ecosystem that supported the environmental aspect or maintain the global market for energy market with innovation based on renewable energy prospec to promote that the renewable energy will reduce the globalization issues.

Third, Falcone (2023) centers the perspective about the empirical evidence from the developing countries about the renewable energy governance that was initiated reveals face particular obstacles in adopting such policies that indicates the weak of governance, and so on it linked with dynamics of governance in renewable energy notably in the regional scope (urban or rural areas) that need overcome with proper policy and enlist the specific progressive road-map or goals. As a concept, the governance of renewable energy needs all agencies to participate in the interconnection forum, such as the government, NGO, and the community, to attend the meeting and then attempt to evaluate the progress of whether the real issues that need to be addressed, so this flow will allow all entities to be more active in the discussion which the topic need the new plan like estimate the problematic comprehensively so that this issue could overcome and maintain the coherence of the energy policy and the outcomes for the community.

Fourth, Moore (2024) reported in a study that renewable energy in America has a promising impact on rural development. Still, some issues about the progress are insignificant for the community, which focuses on the additional income for the landowner who does not earn the leasing cash for energy production. Aligned with this, the dynamic governance of renewable energy could be a fundamental benchmark to secure the community rights with the promise of the renewable energy projects. Based on empirical evidence, this study justify that global renewable energy governance dynamics remain closely tied to the "Affordable and Clean Energy" initiative principles.

However, several existing issues are not addressed through sound initiatives and consistent practices. In addition, the key message should apply consistent ways with the scope of governance practice to ensure what the benefits of renewable energy will bring to the promise of the community in their jurisdiction, then participate actively in all the renewable energy processes to address the dynamic governance of renewable energy in the rural areas. Interestingly, this would be a foundational benchmark to put the objectivity on the dynamic governance of renewable energy in rural areas. In line with these, the foundation of this raises a new paradigm of Asia, especially in Indonesia, where the rural position is articulated as a local government structure. And admittedly, it was stipulated in Law 6/2014, which firmly informed the authorities' independence.

This basis also points out what this study call the "new paradigm" that focuses on authorities in terms of local government structure in managing the prospect of renewable energy itself. Then, if these are compared with other regions around the globe, the result could be different based on the system adopted by each country, because it will affect the authorities' bodies in handling renewable energy in the rural areas. On the other hand, some empirical evidence on the governance dynamics of renewable energy in Indonesia's rural areas is still minimal. It focuses on how the local authorities properly handle and organise renewable energy for the community in their jurisdiction.

Much of the research on renewable energy in rural Indonesia focuses on empowerment based on the effect of renewable energy prospects. Still, the dynamic governance of renewable energy in the rural area of Indonesia reveal consistent problems such as the harmonization of policy from central-local government goals and weak regulatory framework as the element to maintain the principle of affordable and clean energy transition from the SDGs initiative, so this gap would be considered in this study that tremendously put the reason to answer the problem of this with the dynamic governance of the renewable energy in the rural of Indonesia as the rift to be adressed in the study.

In addition, the study's novelty attempts to bridge the concept of policy and renewable energy as a governance framework to elicit prosperity for the community in rural areas of Indonesia and other developing countries based on the Sustainable Development Goals (SDGs) for affordable and clean energy prospects, while maintaining consistency with the insight recommendations. Nevertheless, with these illustrations, this study offer the research question (RQ): What's the dynamic governance of renewable energy in rural Indonesia? This study also provide an insightful recommendation policy based on the governance framework to overcome the issue from a public administration perspective. To gain the study's objective, this study applied a qualitative descriptive approach with a content analysis to investigate, comprehend, and analyze the issue with the data reported through open, valid sources (i.e., journals, government documents, reports, and other relevant sources) in line with the research theme.

2. Methods

To clarify, the study applied a qualitative descriptive methods approach and content analysis to investigate, comprehend, and analyze the research theme based on the gap, and also attempt to resolve the problematic issues that consider paramount about the dynamic governance of renewable energy in rural areas, with a focus on Indonesia. Linked with the perspective from (Creswell & Báez, 2020), the qualitative descriptive methods approach engages the researcher as the main subject to explore the problems of the research theme and being active in providing the analysis based on the critical interpretation using the data to give valuable insight to the readers.

This flow will display the systematic and critical inspection of the issue being analyzed with academic interpretation, then provide insight with implications consistently based on the scientific result. Henceforth, the study collects the data from various open sources (i.e., journals, government documents, reports, and other relevant sources) coherent with the research theme. Next, the data was also assisted by the Publish or Perish (PoP) software to explore the links of the research theme from other publication platforms; this application

helps the researcher to minimise the errors, organise the connections of the research theme, and becomes a tool for the researcher's reference manager to be more effective and efficient find the reputabel sources to elevate the valuabel findings based on the research theme and gap that was confirms to elucidate more comprehensive scrutiny. Regardless, in the inspection data process, this study conducted five strategies from (Creswell & Poth, 2016) as follows:



Fig. 1. Creswell analysis model

First, about the problems; here, the researcher's role provides the background of the study based on the scientific findings that the dynamics of governance of renewable energy in rural areas, with a focus on Indonesia, reveal the consistent problematics that the local government has not resolved, as the responsible authorities in their jurisdiction, so this could be a benchmark of the analysis of the problems that justify need to be inspection comprehensively. Second, focus on the literature review. In this stage, the researcher collects and organizes the literature, which has a connection to assist the analysis properly, and considers the objectivity, relevance, and coherence to display the concept and perspective that align with the research theme. Third, yields on data collection, where the researcher finds the data and supporting information based on open data from valid sources that would be core analysis in the study, and tries to comprehend what's going on with the dynamic governance of renewable energy in the rural areas, with a focus on Indonesia. Fourth, interpreting this context encourages the researcher to carefully serve the analysis to reveal the dynamic governance of renewable energy in rural areas, focusing on Indonesia, and so on, to deliver insightful recommendations for future action regarding the current dynamic. Lastly, regarding reporting, this final stage has a responsibility of the researcher to summarize the conclusion of the study findings and the implications in a short and easy-to-comprehend form.

3. Results and Discussion

3.1 Dynamic governance of renewable energy in the rural areas: Insights from Indonesia

In line with the gaps and research question (RQ), this study identified that rural Indonesia's dynamic renewable energy governance remains riddled with complex governance barriers that erode progress. The comprehension of the problem lies the fragmented policy coordination between the central and regional governments in the scope of multilevel government. As an illustration, even though the central government holds constitutional authority over national energy strategies and policy directives (ministry), local governments, specifically rural areas, possess autonomy to determine their development priorities based on regional needs.

In this case, this study assert that the design to empower local decision-making is not managed correctly; consequently, this dualism often results in overlapping programs and

misaligned objectives to actualise the progress of renewable energy on the ground. Nevertheless, the justification also intended that national and regional authorities frequently launch similar initiatives without coordination instead of working in synergy, leading to duplicated efforts and wasted resources. So, these overlapping interventions create confusion and scale down the effectiveness and sustainability of renewable energy programs intended to enhance access to clean, affordable energy in remote communities.

At the same time, this study found that the core problem is the regulatory inconsistency between national policies and local concretisation mechanisms, and this is also linked to the classic issues of the policy in the Indonesian case, which have not been resolved since the reform to the post-reform era. Next, if connected, this complexity also happens in many rural areas, where the capacity of local governments, both in terms of technical expertise and financial resources, is insufficient to transform central policies into tangible outcomes (Werang et al., 2024).

In this context, Yudha et al. (2020) also argue that Indonesia's renewable energy sector suffers from poor planning and disjointed implementation caused by legal and bureaucratic hurdles. Their research confirms that the local governments often struggle to navigate unclear procedural frameworks, and the absence of harmonized planning tools further exacerbates the disconnection between national intentions and regional realities. This situation has led to many renewable energy initiatives being underutilized, unsustainable, or abandoned altogether, despite their original aim to enhance community livelihoods through improved energy access.

Second, the findings underlined are the exclusion of critical stakeholders, specifically local communities and the private sector, from the planning and execution phases of renewable energy initiatives. The essential message reveals that the community members, the primary beneficiaries of these programs, are often treated as passive recipients rather than active participants. Their insights into local conditions, cultural values, and energy needs are frequently overlooked, reducing local ownership and energy systems' long-term viability.

Meanwhile, the private sector faces significant barriers to engagement due to the lack of clear investment frameworks, uncertain regulatory conditions, and limited financial incentives. Without sufficient stakeholder involvement, especially in regions where community cooperation is essential for infrastructure maintenance and operation, renewable energy projects become fragile and prone to failure. Regardless, these findings echo broader theoretical discussions about governance in complex systems, particularly the concept of dynamic governance. To assist these, Filgueiras et al. (2023) stated that dynamic governance involves adaptive, collaborative approaches that respond to evolving policy environments and community needs. It departs from the traditional top-down style of administration and instead emphasizes flexibility, inclusiveness, and the importance of linking diverse actors and perspectives. If positioned in this way, viewed through this lens, Indonesia's renewable energy landscape in rural areas stresses a critical shortcoming, which indicates the special concern about the lack of coordination and coherence across multiple levels of government. So, this message informs the central authorities that they may design well-intentioned national strategies.

On the other hand, when regional actors are not fully incorporated into the planning and decision-making processes, the disconnect undermines policy implementation and weakens accountability. Similarly, Purba & Irianto (2025) reinforces this point by emphasizing the need for regulatory reform and more decisive state intervention to bridge the rift between national and local governance structures. The findings argue that energy policy in Indonesia must be interconnected across scales and emphasize collective governance action to elevate access, equity, and resilience. Yet, it must be acknowledged that fragmented administrative processes exist, and the way to overcome this is for the central government to design a more connected system to actively involve regional governments, civil society, and the private sector in shaping and executing energy policy.

In line with this suggestion, it is essential to ensure that renewable energy programs reflect the realities and priorities of rural communities based on local preferences and

needs. Not with standing, to make it better than before, this study spotlight the message. The first step involves clarifying the roles and responsibilities of central and local governments through institutional reforms that promote joint planning, resource sharing, and mutual accountability. Also, committing to legally binding agreements between national and regional authorities could help formalize collaboration, ensuring that renewable energy programs are aligned in vision and execution.

Lastly, establishing multi-stakeholder platforms that bring together government agencies, local leaders, private investors, and community representatives can foster inclusive dialogue or co-create solutions tailored to local contexts. To implement governance reforms, regulatory frameworks must be revised to eliminate procedural bottlenecks and simplify approval processes. This stage also has more straightforward guidelines for project development and financial incentives for goals that could encourage greater participation from private companies and improve investor confidence. This context underscores that innovative financial schemes such as public-private partnerships, blended finance, and community-owned cooperatives offer viable models to scale renewable energy while sharing risks and benefits more equally.

To support these efforts, capacity-building initiatives should be extended, particularly for local government officials and community stakeholders, enabling them to effectively plan, manage, and secure energy infrastructure. Hence, most importantly, Indonesia must embed flexibility into its policy design to accommodate the diverse needs of its rural regions. Energy policies should be treated as living instruments that evolve through continuous learning and feedback. Then, through monitoring mechanisms and periodic evaluations, policymakers can adjust strategies in response to changing circumstances and community input.

In doing so, the country can move closer to a governance model that is efficient, responsive, and grounded in the lived realities of the people it aims to serve. The dynamic renewable energy governance in rural Indonesia reveals a serious disconnect between central policy ambitions and local concretisation capabilities. Interestingly, these initiatives will continue to fall short of their transformative potential without harmonized planning, inclusive participation, and coherent regulatory mechanisms. So, the transition will require political will, institutional innovation, and sustained commitment from all levels of government.

3.2 Insight recommendations

To deep dive, it is crucial to grasp the complexity of Indonesia's renewable energy governance landscape, notably in rural areas. As a reflection above, and as the study already mentioned, the nation is grappling with a heavy, fragmented policy environment where national policies on renewable energy often do not align with local needs or preferences.

The existence of the polarity governance system since the post-reform era exacerbates this misalignment, with central government policies that set broad strategic goals and local governments that can execute on development priorities based on regional needs. As a result, there is often a lack of coherence between top-down policies and bottom-up concretisation. This context indicates that local governments, especially in rural areas, struggle with the capacity to turn national policy directives into tangible outcomes due to incomplete technical expertise, financial resources, and clear procedural frameworks.

Hence, this study confirmed that inequality between expectation and capacity is at the heart of the issue. National policies often come with ambitious targets for development, environmental security, or innovation. One consequence is what could be called "policy fragmentation." Local governments may selectively implement aspects of national policy based on what they can realistically manage or what aligns with their priorities. This results in uneven outcomes; some areas move forward, while others fall behind. Another typical response is called "policy performance" or "window dressing," where local officials go through the motions of enacting a policy without generating real impact, to show they're aligned with the central government's expectations.

This pattern of disconnect creates problems not only for development outcomes but also for public trust. When people in rural communities see ambitious policies that never translate into real change, it can breed cynicism and disillusionment. It also makes it hard to hold anyone accountable. If a policy fails, was it because it was poorly designed or poorly implemented?

The blurred lines of responsibility make that question difficult to answer. There needs to be a more balanced and coordinated approach to move forward. So, the central authorities must provide strategic direction, technical guidance, financial support, and procedural clarity, which local governments need. At the same time, local governments should be encouraged to adapt policies that make sense for their context, without fear of being penalized for deviating from the script. In short, closing the inequality between national ambition and local reality isn't just about tightening control or loosening it; it's about building genuine partnerships across levels of government. Policies can only work for the people they're meant to serve.

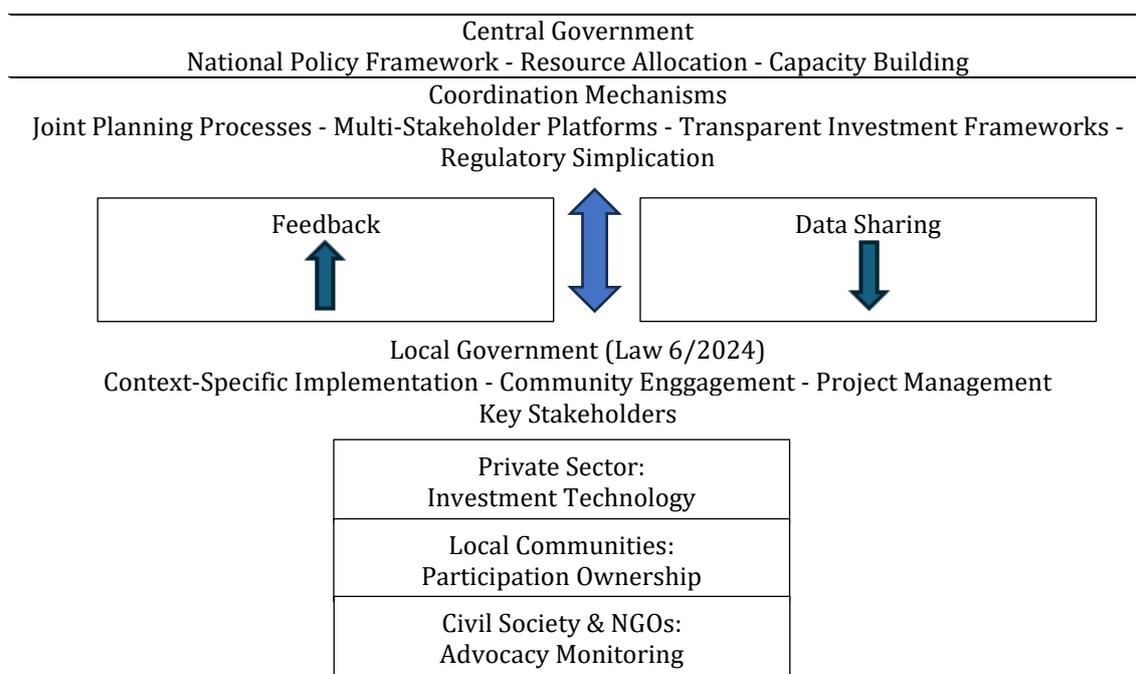
Withal, this study found that local communities' role in renewable energy planning and execution is often overlooked as part of the strategy's goals or road-map based on the contextuality in the rural lens of Indonesia (Werang, 2025). On the flip side, when communities are involved from the outset, they assist in defining their energy needs, shaping the design of systems, and having ownership over the outcome, the likelihood of success increases dramatically. This study believe participation builds trust, promotes accountability, and leads to systems people value and want to sustain.

Unfortunately, current frameworks and strategies often do not create space for this engagement, particularly in rural areas where governance structures may be weaker or more centralized. At the same time, the private sector, another key player in expanding renewable energy, faces barriers. In theory, private companies could bring innovation, investment, and technical expertise to the table, accelerating the rollout of renewable infrastructure.

However, in practice, they encounter significant barriers that deter their involvement. These include unclear regulations, a lack of long-term policy guarantees, and financial risks not adequately mitigated by government support or incentive mechanisms. By this illustration, without a transparent investment framework or supportive regulatory environment, it's risky and often unappealing for private firms to get involved in rural renewable energy projects. It is especially true when returns on investment are uncertain or when bureaucratic hurdles make project approval and implementation slow and unpredictable. As a result, the private sector remains on the sidelines, despite its potential to be a driving force behind sustainable energy development.

To confirm and mitigate, community engagement and private sector involvement must be seen not as optional, but as essential components of any successful renewable energy strategy. It means designing technically sound, socially inclusive, and economically viable policies. Communities should be empowered through participatory processes, education, and local ownership models. In the meantime, the government needs to build trust with the private sector by providing regulatory clarity, investment security, and targeted incentives. In general, based on the issues above and pertinent to the study, promoted the insight policy recommendation to swamp based on the governance framework in Figure 2.

First, the study acknowledge that the dynamic governance of renewable energy in rural areas of Indonesia needs to be tightened and coordinated between central and local governments because, in Indonesia, rural regions are interpreted as a local government structure who have the authority to run their activity independently according to Law 6/2014. This notion emphasised this role: to command their jurisdiction to be more active and serve the proactive process to manage local needs properly. As identified, fragmented governance and overlapping initiatives undermine the effectiveness of renewable energy programs. In that event, it is essential to clarify the roles and responsibilities of central and local governments. Hence, this confirmed that linear institutional reforms should promote joint planning, resource sharing, and mutual accountability in that context (Hansen, 2021; Pinilla-De La Cruz et al., 2022; Trevisan et al., 2023).



Five Strategic Pillars: Coordinated Governance, Inclusive Engagement, Multi-Stakeholder Platforms, Streamlined Regulation, Capacity Building

Fig. 2. Dynamic governance model for renewable energy in rural Indonesia

From the lens, one of the most urgent priorities is for the central government to shift its focus from control to empowerment. Rather than issuing top-down policies with little flexibility, the central government should work to equip local governments with the tools, authority, and capacity they need to take the lead on renewable energy planning in their regions. It includes everything from technical training and infrastructure support to financial resources and clearer legal frameworks. Local governments, after all, are often better placed to comprehend the realities of their communities. They know the appropriate technologies, which stakeholders should be involved, and how to navigate local social and environmental factors. Even the most well-designed policies can stall at the concretisation stage when under-resourced or burdened with unclear mandates. Giving local authorities the power to adapt national strategies to their context while holding them accountable for outcomes creates a more responsive and dynamic system. Of course, decentralisation on its own isn't a silver bullet. It must be paired with strong coordination mechanisms.

Hence, the central and local governments should engage in joint planning processes, where goals are aligned but strategies are flexible. Rather than each level operating in isolation, there needs to be a culture of shared responsibility, where both success and failure are collectively owned. It involves setting up platforms for regular communication, data sharing, and collaborative monitoring of project progress.

Additionally, resource sharing is critical, linking finances, knowledge, and human capital. For instance, technical expertise from national agencies or universities can be mobilised to support local governments through workshops, advisory services, or co-managed projects. In turn, feedback from local governments can help national planners better recognize ground-level barriers and adjust policies accordingly. When this kind of cooperative governance is in place, it strengthens the entire renewable energy ecosystem. Local governments become more confident and capable, central agencies become more informed and strategic, and communities benefit from practical and lasting solutions. Ultimately, the success of rural renewable energy initiatives depends not only on technology or funding but on the strength of the institutional relationships behind them. By moving away from rigid hierarchies and toward a collaborative governance model, the Indonesian government (central-local) can lay the foundation for a more inclusive, efficient, and sustainable energy transition that genuinely works for all levels of society.

Next, the local governments, particularly in rural areas, must be given greater autonomy in adapting policies to local needs within a well-defined framework of national guidelines. This study believe this can be achieved through legally binding agreements between national and regional authorities, formalising collaboration and ensuring that renewable energy programs are coordinated and efficient on the ground and in response to local preferences. Additionally, the central government must adopt a more flexible approach to policymaking, allowing for continuous feedback from local governments to ensure policies are responsive to evolving needs.

Overall, the success of this strategy hinges on a commitment to mapping the priorities and goals of both central and local levels of government. With better coordination, the overlapping initiatives leading to confusion and resource waste could be regained through synergies that accelerate the deployment of renewable energy solutions. Second, the lens focuses on inclusive governance and community engagement. On this basis, this study offer key insight that emerges from the current barriers in Indonesia's renewable energy sector. The comprehension of this reveals the exclusion of critical stakeholders, especially local communities and the private sector, from the planning and execution phases of energy projects.

Consequently, the ongoing progress in the field does not have a proper way to serve the community's needs. In addition, the study advocate for making these initiatives better and succeeding; the multilevel government must adopt a way (i.e., a more inclusive, participatory governance model). These areas focus on the local communities, which must be involved at every stage of the renewable energy process, from planning and design to comprehensive project operation and maintenance. Moreover, their insights into local conditions, energy needs, and cultural values are invaluable for ensuring practical and sustainable renewable energy solutions. It aligns with an empirical study suggesting that the process should involve every participant being more active and attempting to adapt the new ecosystem in renewable energy prospects (Ahmed et al., 2024; Goggins et al., 2022; Mihailova et al., 2022; Pillan et al., 2023). On the other hand, the scope of the communities in the decision-making process would foster a sense of ownership, which is crucial for the long-term success of energy projects. Then, community participation in energy governance can assist in identifying region-specific barriers and tailoring solutions that address local barriers, thereby scaling up the overall efficacy of renewable energy programs, which might be the priority of the affordable and clean energy transition. So, this study strongly advise that the engagement of the private sector is equally essential to maintain renewable energy in rural areas.

Lastly, it is necessary to develop transparent and predictable investment frameworks to optimize private sector participation in the renewable energy space. To achieve the process above, the government should design or recalibrate the regulatory uncertainty, and the lack of financial incentives is still a significant barrier for private companies investing in rural renewable energy projects. Then, the government should also focus on a more stable and transparent policy environment with economic incentives such as subsidies, tax breaks, and guaranteed purchase agreements, which can encourage private investment in rural areas. Third, the study focus on the context of "Institutionalizing Multi-Stakeholder Platforms". This basis yields the way to ensure inclusivity and foster collaboration between various stakeholders by initiating multi-stakeholder platforms. According to some empirical evidence, mocking up the urgency of this consensus among all related parties is intended to create a new solution to scale up a multi-stakeholder platform with a stronger institutional concept (Bulmer & Yáñez-Araque, 2023; Higham et al., 2024; Simões, 2024; Stanitsas & Kirytopoulos, 2024). The study affirm that these platforms can serve as spaces for dialogue and co-creation, bringing together government agencies, local leaders, private sector representatives, and community members to jointly design, actualise, and monitor renewable energy initiatives. Formerly, providing a structured platform for dialogue, these initiatives can fill the rift between national policies and local realities, and ensure that renewable energy initiatives are responsive to the diverse needs of rural communities.

Based on this, multi-stakeholder platforms with stronger institutional support might elevate transparency and accountability in renewable energy governance and foster inclusivity. Then, to secure these, this study also firmly put that regular communication between government authorities, private investors, and community representatives will reduce the potential for misaligned objectives and lead to more cohesive and sustainable outcomes.

Fourth, the focus is streamlining the regulatory framework and financial support mechanisms. It is intended to address existing barriers in the renewable energy sector. The regulatory framework must also be revised to simplify the approval process or eliminate procedural obstacles (Raikar & Adamson, 2024). In many rural areas in Indonesia, problems such as bureaucratic inefficiencies delay project development and lead to underutilized and unsustainable energy systems. It means that a comprehensive simplification of the regulatory environment is needed to expedite project approvals and enable faster implementation of renewable energy initiatives.

Furthermore, the study encourage multi-level governments to pay due attention to the creation of innovative financial mechanisms, as the key element in addressing the limitations of renewable energy is financial constraints, which hinder the continuation of these initiatives and prevent them from generating positive effects. Hence, several relevant research constructs further reinforce it by outlining the need for proportional financial regulation. Conceptually, regulations must be in place to ensure that financing intended for renewable energy prospects in rural areas is feasible and delivers real, accountable, and realistic expectations (Liu et al., 2022; Nouri et al., 2022; Streimikiene et al., 2021).

On the one hand, public-private partnerships (PPPs), blended financing, and community-owned cooperatives can serve as viable models that can help escalate renewable energy initiatives while mitigating risks for all stakeholders involved. In this way, the benefits of renewable energy initiatives remain with local communities, promoting long-term sustainability and resilience for rural communities.

Our final five focus on emphasizing the importance of capacity building at the local government level, which is essential and a complementary element in renewable energy management. It means that capacity building at the regional level requires training for local government officials, community stakeholders, and private sector representatives to recreate the technical and managerial skills necessary to plan, manage, and maintain renewable energy systems.

Moreover, it is further supported by several insights that outline the importance of local government capacity as a crucial element in actualising and taking responsibility for the prospects of renewable energy initiatives (Richter & Christmann, 2023; Saad et al., 2021; Sun et al., 2024). It ensures that the benefits of these initiatives are professionally realized with a comprehensive understanding and prioritizing the urgency of local needs, particularly in rural areas. For example, energy access is still bumpy in many rural parts of Indonesia, and local infrastructure may be underdeveloped. But, if inspected, renewable energy holds incredible potential to fill these disparities, but only if local actors are empowered to make informed, context-sensitive decisions. That combined with identifying what kind of energy system makes the most sense for a given area (solar, micro-hydro, biogas, etc.), comprehending how to maintain that system over time, and ensuring that the benefits, such as job creation, reduced energy costs, and improved public services, reach the people who need them most.

The process becomes more responsive, efficient, and people-centered when local governments are strong and well-assisted. Moving on, the community members are more likely to trust and participate in renewable energy projects when they see local leaders actively involved and committed. It also allows for quicker troubleshooting and more flexible planning, since local officials are on the ground and directly in touch with the day-to-day realities of their communities. Unfortunately, in many cases, this ideal is still far from reality. Local governments often face severe constraints, limited budgets, a shortage of skilled personnel, and unclear mandates, preventing them from playing the ideal role.

Without consistent investment in capacity-building and ongoing institutional assistance, even the most promising projects can lose momentum or fall apart entirely.

To assert the new way forward, central and regional governments, development partners, and civil society must see capacity-building not as a box to tick, but as a long-term investment in the sustainability of renewable energy systems. It could include training programs, peer-to-peer learning networks between local governments, technical assistance, and knowledge-sharing platforms across regions. In short, local government capacity is not a secondary issue; it is at the heart of successful renewable energy transformation. By building strong, capable, and empowered local institutions, Indonesia can ensure that its renewable energy journey is not just a national vision, but a local reality rooted in the needs of communities and built to last.

Thus, through this stage, capacity-building programs should focus on enhancing knowledge in project management, financial planning, and consistent regulatory compliance. Accordingly, this study concludes that rural areas in Indonesia can consistently implement these initiatives by empowering local governments and communities with the skills and knowledge needed to manage renewable energy projects effectively, ensuring both short-term success and long-term sustainability.

4. Conclusions

This study affirms the dynamic governance of renewable energy in rural areas: insight from Indonesia displays the limitations of the concretization in the field, and confirms that the key issue is the crumbled governance structure between central and local governments, which results in policy misalignment, duplicated efforts, and inefficiencies. Admittedly, central government policies often ramble from local realities, with rural regions desperate for concrete national strategies due to limited resources, technical expertise, and unclear regulatory frameworks. This governance gap undermines the potential of renewable energy programs to meet their sustainability goals, affordability, and access in rural communities. Interestingly, the implications of these findings are severe.

First, Indonesia's energy governance requires urgent institutional reform to clarify roles and responsibilities between central and local authorities. In this context, the government must strengthen coordination and accountability through joint planning processes, which are essential to avoid fragmented approaches and maximize resource efficiency. Second, governance must shift from a top-down model to a more inclusive, participatory one, where local communities actively engage in all stages of renewable energy projects from planning to execution. This path will ensure that projects align more closely with local needs and enhance long-term sustainability.

Finally, to stimulate private sector connection, the government must swamp regulatory uncertainty and create financial incentives that make rural renewable energy projects more attractive for investors. Lastly, this study contributes to the broader comprehension of energy governance by equipping the concept of dynamic governance to the Indonesian context. The study also offers actionable recommendations for escalating policy alignment, stakeholder engagement, and regulatory frameworks, which could guide scholars and policymakers in addressing energy governance barriers in decentralised systems. As a call to action, the Indonesian government (central-local) must intensify the institutional frameworks, foster stakeholder collaboration, simplify regulatory processes, and assist local capacity building to move forward. These steps will enable more efficient, responsive, and sustainable renewable energy governance in rural areas, to ensure that goals are realized and that rural communities benefit from cleaner, more respectful energy sources.

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Author Contribution

M.L.F.W contributed to the study's conceptualisation by suggesting the research design, methodology, and theoretical framework of the forward insight recommendation approach based on the research theme. R.A.P helped in the literature review, data set, and scrutiny and contributed to interpreting the data using Publish or Perish (PoP). NPLW contributed to the study of the findings, chiefly focusing on the research's effect. All authors have reviewed or ratified the final manuscript.

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No competing interests were disclosed by the authors.

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During the preparation of this work, the authors used Grammarly to assist in improving grammar, clarity, and academic tone of the manuscript. After using this tool, the authors reviewed and edited the content as needed and took full responsibility for the content of the publication.

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References

- Ahmed, S., Ali, A., & D'Angola, A. (2024). A Review of Renewable Energy Communities: Concepts, Scope, Progress, Challenges, and Recommendations. *Sustainability*, 16(5), 1749. <https://doi.org/10.3390/su16051749>
- Bulmer, E., & Yáñez-Araque, B. (2023). Tackling Climate Change through Multi-Stakeholder Partnerships: Promoting SDG 17 to Combat Climate Change. *Energies*, 16(9), 3777. <https://doi.org/10.3390/en16093777>
- Creswell, J. W., & Báez, J. C. (2020). *30 essential skills for the qualitative researcher*. Sage Publications.

- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.
- Falcone, P. M. (2023). Sustainable Energy Policies in Developing Countries: A Review of Challenges and Opportunities. *Energies*, 16(18), 6682. <https://doi.org/10.3390/en16186682>
- Filgueiras, F., Palotti, P., & Testa, G. G. (2023). Complexing Governance Styles: Connecting Politics and Policy in Governance Theories. *Sage Open*, 13(1). <https://doi.org/10.1177/21582440231158521>
- Goggins, G., Rau, H., Moran, P., Fahy, F., & Goggins, J. (2022). The role of culture in advancing sustainable energy policy and practice. *Energy Policy*, 167, 113055. <https://doi.org/10.1016/j.enpol.2022.113055>
- Hansen, P. (2021). Optimising shared renewable energy systems: An institutional approach. *Energy Research & Social Science*, 73, 101953. <https://doi.org/10.1016/j.erss.2021.101953>
- Higham, I., Bäckstrand, K., Fritzsche, F., & Koliev, F. (2024). Multistakeholder Partnerships for Sustainable Development: Promises and Pitfalls. *Annual Review of Environment and Resources*, 49(1), 475–500. <https://doi.org/10.1146/annurev-environ-051823-115857>
- Liu, H., Yao, P., Latif, S., Aslam, S., & Iqbal, N. (2022). Impact of Green financing, FinTech, and financial inclusion on energy efficiency. *Environmental Science and Pollution Research*, 29(13), 18955–18966. <https://doi.org/10.1007/s11356-021-16949-x>
- Mihailova, D., Schubert, I., Burger, P., & Fritz, M. M. C. (2022). Exploring modes of sustainable value co-creation in renewable energy communities. *Journal of Cleaner Production*, 330, 129917. <https://doi.org/10.1016/j.jclepro.2021.129917>
- Moore, C. (2024). Renewable Energy Adoption and Its Effect on Rural Development in United States. *Journal of Developing Country Studies*, 8(2), 15–31. <https://doi.org/10.47604/jdcs.2674>
- Nouri, A., Khadem, S., Mutule, A., Papadimitriou, C., Stanev, R., Cabiati, M., Keane, A., & Carroll, P. (2022). Identification of Gaps and Barriers in Regulations, Standards, and Network Codes to Energy Citizen Participation in the Energy Transition. *Energies*, 15(3), 856. <https://doi.org/10.3390/en15030856>
- Pillan, M., Costa, F., & Caiola, V. (2023). How Could People and Communities Contribute to the Energy Transition? Conceptual Maps to Inform, Orient, and Inspire Design Actions and Education. *Sustainability*, 15(19), 14600. <https://doi.org/10.3390/su151914600>
- Pinilla-De La Cruz, G. A., Rabetino, R., & Kantola, J. (2022). Unveiling the shades of partnerships for the energy transition and sustainable development: Connecting public–private partnerships and emerging hybrid schemes. *Sustainable Development*, 30(5), 1370–1386. <https://doi.org/10.1002/sd.2288>
- Purba, E. N. N., & Irianto, C. G. (2025). Regulatory Analysis Of Renewable Energy Use Strategies In Indonesia: A Review. *G-Tech: Jurnal Teknologi Terapan*, 9(1), 109–120. <https://doi.org/10.70609/gtech.v9i1.5910>
- Raikar, S., & Adamson, S. (2024). *Renewable energy finance: Theory and practice*. Elsevier.
- Richter, R., & Christmann, G. B. (2023). On the role of key players in rural social innovation processes. *Journal of Rural Studies*, 99, 213–222. <https://doi.org/10.1016/j.jrurstud.2021.04.010>
- Rietig, K. (2021). Multilevel reinforcing dynamics: Global climate governance and European renewable energy policy. *Public Administration*, 99(1), 55–71. <https://doi.org/10.1111/padm.12674>
- Saad, S., Lahoud, C., Brouche, M., Hmadi, M., Ghandour, M., & Mourtada, A. (2021). Advanced tool for elaborating a sustainable energy and climate action plan at municipalities level. *Energy Reports*, 7, 51–69. <https://doi.org/10.1016/j.egyr.2021.09.049>
- Simões, J. (2024). *Advancing Sustainable Energy Transitions in Developing Countries: A Stakeholder-Informed Review of Enabling Frameworks* (pp. 89–110). https://doi.org/10.1007/978-3-031-67587-4_6

- Stanitsas, M., & Kirytopoulos, K. (2024). Navigating the Nexus: Stakeholder Engagement in Hybrid Renewable Energy Power Purchase Agreements (PPAs) for Sustainable Development. *Sustainability*, 16(17), 7381. <https://doi.org/10.3390/su16177381>
- Streimikiene, D., Baležentis, T., Volkov, A., Morkūnas, M., Žičkienė, A., & Streimikis, J. (2021). Barriers and Drivers of Renewable Energy Penetration in Rural Areas. *Energies*, 14(20), 6452. <https://doi.org/10.3390/en14206452>
- Sun, P., Ge, D., Yuan, Z., & Lu, Y. (2024). Rural revitalization mechanism based on spatial governance in China: A perspective on development rights. *Habitat International*, 147, 103068. <https://doi.org/10.1016/j.habitatint.2024.103068>
- Trevisan, R., Ghiani, E., & Pilo, F. (2023). Renewable Energy Communities in Positive Energy Districts: A Governance and Realisation Framework in Compliance with the Italian Regulation. *Smart Cities*, 6(1), 563–585. <https://doi.org/10.3390/smartcities6010026>
- United Nation. (2015). *Sustainable Development Goals (SDGs)*. United Nation. <http://sdgs.un.org/goals>
- Werang, N. P. L., Rizki, M., & Yolandasari, P. (2024). The Shocking Truth: Why Renewable Energy in Maluriwu Village is Falling to Meet Public Needs. *Jurnal Manajemen Dan Ilmu Administrasi Publik (JMIAP)*, 6(3), 311–319. <https://doi.org/10.24036/jmiap.v6i3.1034>
- Werang, M. L. F. (2025). Critical Perspectives on Indonesia Village Development Index. *Jurnal Administrasi Publik*, 16(1). <https://doi.org/https://dx.doi.org/10.62870/jap.v16i1.31040>
- Yao, L. (2022). Domestic Dynamics and China's Engagement in Global Renewable Energy Governance. *The Chinese Journal of International Politics*, 15(1), 69–86. <https://doi.org/10.1093/cjip/poac004>
- Yudha, S. W., Tjahjono, B., & Longhurst, P. (2020). *Stakeholders' Recount on the Dynamics of Indonesia's Renewable Energy Sector*. <https://doi.org/10.20944/preprints202010.0083.v1>

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