

Navigating The Renewable Energy Transition In Indonesia: Institutional Dynamics, Policy Reforms, And The Political Economy Of Energy Security

Alejandro Martín Velázquez

Department of International Development and Energy Studies, University of Barcelona, Spain

Sofia Almeida Costa

Institute of Energy and Sustainability, University of Lisbon, Portugal

VOLUME02 ISSUE02 (2025)

Published Date: 21 December 2025 // Page no.: - 16-19

ABSTRACT

Indonesia's energy sector stands at a critical crossroads shaped by rising energy demand, long-standing dependence on fossil fuels, complex subsidy regimes, and growing international and domestic pressure to accelerate renewable energy deployment. As Southeast Asia's largest economy and one of the world's most populous countries, Indonesia's approach to energy security and renewable energy transition has implications that extend well beyond its national borders. This article develops a comprehensive, theoretically grounded, and empirically informed analysis of Indonesia's renewable energy transition, with particular emphasis on the political economy of energy security, institutional design, subsidy reform, and regulatory evolution. Drawing strictly and exclusively on the provided body of literature, the article synthesizes insights from energy economics, political science, institutional theory, and development studies to examine why renewable energy deployment in Indonesia has historically lagged behind its technical potential and how recent policy shifts—particularly in rooftop solar regulation and broader energy governance—signal a tentative but consequential turning point. Rather than offering a narrow policy evaluation, the article situates Indonesia's renewable energy trajectory within broader debates on energy security, democratic institutions, resource politics, and state capacity. The analysis elaborates in detail how electricity subsidies, social equity concerns, regulatory uncertainty, and entrenched fossil fuel interests interact to shape renewable investment outcomes. At the same time, it critically engages with counter-arguments that emphasize market readiness, technological constraints, and demand-side limitations. Methodologically, the article adopts a qualitative, integrative research design based on systematic literature interpretation and institutional analysis, enabling a nuanced exploration of causal mechanisms without relying on quantitative modeling or visual representations. The findings suggest that renewable energy deployment in Indonesia is best understood not as a purely technical or economic challenge, but as a deeply political and institutional process conditioned by energy security priorities, distributional concerns, and state-market relations. The discussion highlights persistent limitations, including policy inconsistency and administrative fragmentation, while also identifying future pathways for reform grounded in regulatory credibility, inclusive energy governance, and long-term strategic planning. By offering an extensive and original synthesis, this article contributes to the scholarly literature on renewable energy transitions in emerging economies and provides a theoretically rich foundation for future research on Indonesia's evolving energy landscape.

Keywords: Renewable energy transition, energy security, electricity subsidies, political economy, Indonesia, energy governance.

INTRODUCTION

Energy has long occupied a central position in the economic development, political stability, and social cohesion of modern states. In developing and emerging economies, energy policy is rarely confined to questions of efficiency or environmental sustainability alone; instead, it is deeply intertwined with issues of poverty alleviation, industrialization, fiscal capacity, and political legitimacy. Indonesia exemplifies these dynamics in particularly acute ways. As an archipelagic state with vast natural resources, rapid economic growth, and highly uneven regional development, Indonesia faces a complex

set of energy challenges that defy simple policy prescriptions. Despite possessing substantial renewable energy potential—particularly in solar, wind, geothermal, and hydropower—Indonesia has historically relied heavily on fossil fuels, supported by extensive subsidy regimes and state-centric energy governance structures (Burke & Kurniawati, 2018; Burke et al., 2019).

The persistence of fossil fuel dominance in Indonesia's energy mix cannot be adequately explained by technological or cost considerations alone. A growing body of scholarship emphasizes the importance of institutional arrangements, political incentives, and social contracts in

shaping energy outcomes (Cherp & Jewell, 2014; Cheon & Urpelainen, 2014). In Indonesia, electricity subsidies have long functioned as both a developmental tool and a political instrument, designed to ensure affordability and social inclusion while simultaneously constraining fiscal space and distorting investment incentives (Burke & Kurniawati, 2018). These dynamics have created structural barriers to renewable energy deployment, particularly when renewable technologies are perceived as threatening price stability or established interests.

At the same time, global and regional developments have begun to reshape the strategic context in which Indonesia's energy policies are formulated. Concerns about energy security, defined not merely as supply adequacy but as a multidimensional concept encompassing affordability, accessibility, sustainability, and political resilience, have gained increasing prominence (Cherp & Jewell, 2014). International commitments to climate mitigation, coupled with declining renewable technology costs, have further intensified pressure on Indonesian policymakers to re-evaluate the long-term viability of fossil fuel dependence (Bourcet, 2020). Recent regulatory changes, including new rules governing rooftop solar installations, suggest a growing recognition of these challenges within the Ministry of Energy and Mineral Resources (Bissett et al., 2021; Cindy & Fitriyanti, 2021).

Despite these developments, the academic literature remains fragmented. Economic studies often focus on cost drivers and market incentives, while political analyses emphasize elite interests and institutional constraints, with limited integration between these perspectives. Moreover, much of the comparative literature on renewable energy deployment draws on cross-country econometric models that risk obscuring the specific historical and political conditions shaping Indonesia's energy system (Bourcet, 2020; Chen et al., 2021). This article seeks to address these gaps by providing an in-depth, theoretically elaborated, and context-sensitive analysis of Indonesia's renewable energy transition, grounded entirely in the provided scholarly and policy references.

The central argument advanced in this article is that renewable energy deployment in Indonesia is fundamentally conditioned by the interaction between energy security imperatives, subsidy politics, and institutional capacity. Rather than treating renewable energy as an exogenous technological solution, the article conceptualizes it as a contested policy domain embedded within broader struggles over resource control, social distribution, and state authority. By elaborating this argument in detail, the article contributes to ongoing debates about how emerging economies can navigate the transition toward more sustainable energy systems without undermining social stability or economic

growth.

METHODOLOGY

The methodological approach adopted in this study is qualitative, interpretive, and integrative. Rather than relying on statistical modeling or primary data collection, the article is based on an exhaustive and systematic analysis of the provided literature, encompassing academic journal articles, policy reports, and regulatory commentaries. This approach is particularly appropriate given the article's objective of developing a theoretically rich and institutionally grounded understanding of Indonesia's renewable energy transition.

The first methodological step involved categorizing the provided references according to their primary analytical focus. Studies addressing electricity subsidies and demand-side effects were examined to understand the social and fiscal dimensions of energy pricing (Burke & Kurniawati, 2018; Burke & Siyaranamual, 2019). Literature on renewable energy determinants and comparative deployment patterns was used to situate Indonesia within broader global trends (Bourcet, 2020; Chen et al., 2021). Political economy and institutional analyses provided insights into how power relations, regulatory structures, and governance frameworks shape energy outcomes (Buur et al., 2020; Cheon & Urpelainen, 2014).

The second step involved synthesizing these strands into a coherent analytical framework centered on energy security. Drawing on conceptualizations that move beyond narrow supply-focused definitions, the article adopts a multidimensional understanding of energy security that encompasses affordability, sustainability, and institutional resilience (Cherp & Jewell, 2014). This framework enables a nuanced exploration of how renewable energy policies interact with broader state objectives and societal expectations.

The third step consisted of a close reading of Indonesia-specific policy documents and regulatory analyses, particularly those produced by the Ministry of Energy and Mineral Resources and related agencies (Center for Data and Information Technology on Energy and Mineral Resources, 2016; Directorate General of Oil and Gas, 2021). These sources were analyzed not as neutral technical documents but as expressions of underlying policy priorities and institutional logics.

Throughout the analysis, particular attention was paid to identifying causal mechanisms rather than merely descriptive correlations. For example, instead of simply noting that subsidies affect electricity demand, the article explores how subsidy reforms reshape political coalitions, investor expectations, and public perceptions of energy transition (Burke & Kurniawati, 2018). Similarly,

regulatory changes in rooftop solar are examined in terms of their implications for decentralization, citizen participation, and utility business models (Bissett et al., 2021).

This text-based, interpretive methodology allows for extensive theoretical elaboration and critical discussion, consistent with the article's objective of producing a deep and comprehensive analysis without reliance on visual or mathematical representations.

RESULTS

The analysis reveals several interrelated findings regarding the determinants and dynamics of renewable energy deployment in Indonesia. First, electricity subsidies emerge as a central structural factor shaping both demand-side behavior and supply-side investment decisions. Subsidies have historically reduced the price sensitivity of consumers, encouraging higher electricity consumption while simultaneously undermining the competitiveness of renewable energy sources that rely on cost recovery mechanisms (Burke & Kurniawati, 2018). From an energy security perspective, this dynamic creates a paradox: while subsidies enhance short-term affordability and political stability, they weaken long-term sustainability and fiscal resilience.

Second, institutional fragmentation within Indonesia's energy governance system has constrained policy coherence. Responsibilities for energy planning, regulation, and implementation are distributed across multiple agencies, creating coordination challenges and regulatory uncertainty (Center for Data and Information Technology on Energy and Mineral Resources, 2016). This fragmentation disproportionately affects renewable energy projects, which often require cross-sectoral coordination and long-term regulatory certainty to attract investment (Burke et al., 2019).

Third, political economy factors play a decisive role in shaping renewable energy outcomes. Fossil fuel industries, including coal and oil and gas, continue to wield significant influence over policy processes, reinforced by employment considerations and regional revenue dependencies (Directorate General of Oil and Gas, 2021). Renewable energy, by contrast, lacks an equally entrenched political constituency, making it more vulnerable to policy reversals and implementation delays.

Fourth, recent regulatory developments, particularly in rooftop solar, signal a cautious but meaningful shift in policy orientation. The new Ministry of Energy and Mineral Resources regulations analyzed by Bissett et al. (2021) reflect an attempt to balance utility concerns with growing consumer interest in decentralized solar generation. While these reforms do not eliminate all

barriers, they represent an important acknowledgment of the role that distributed renewable energy can play in enhancing energy security and citizen participation.

Finally, comparative insights from the broader literature suggest that Indonesia's challenges are not unique but are intensified by its specific institutional and socio-political context. Studies emphasizing the role of democratic institutions highlight how transparency, accountability, and regulatory credibility can facilitate renewable energy deployment (Chen et al., 2021). In Indonesia, ongoing democratic consolidation creates both opportunities and uncertainties for energy governance reform.

DISCUSSION

The findings underscore the importance of moving beyond technocratic approaches to renewable energy policy. In Indonesia, renewable energy transition is inseparable from questions of social equity, political legitimacy, and state capacity. Electricity subsidies, often criticized for their economic inefficiency, must be understood within the context of a broader social contract that prioritizes affordability and inclusion (Burke & Siyaranamual, 2019). Abrupt subsidy removal risks political backlash and social unrest, yet maintaining subsidies indefinitely undermines the financial viability of renewable energy investments.

A key theoretical implication of this analysis is that energy security should be conceptualized as a dynamic and contested process rather than a fixed policy goal. Indonesia's energy security concerns have historically centered on ensuring supply and price stability, often at the expense of environmental sustainability (Cherp & Jewell, 2014). However, as global energy markets evolve and climate risks intensify, the definition of security itself is expanding. Renewable energy, once viewed as a luxury or marginal supplement, is increasingly framed as a strategic necessity.

The article also engages with counter-arguments that attribute Indonesia's slow renewable uptake primarily to market readiness or technological constraints. While these factors are not insignificant, the analysis suggests that institutional and political barriers are more decisive. Comparative evidence indicates that countries with similar income levels and resource endowments have achieved higher renewable penetration through coherent policy frameworks and credible long-term commitments (Bourcet, 2020).

Limitations of this study include its reliance on secondary sources and the absence of primary empirical data. While this approach enables extensive theoretical elaboration, it also constrains the ability to assess the on-the-ground effectiveness of specific policies. Future research could build on this analysis by conducting in-depth case studies of renewable energy projects or by examining subnational

variations within Indonesia.

CONCLUSION

Indonesia's renewable energy transition is a complex, multifaceted process shaped by historical legacies, institutional structures, and evolving energy security priorities. This article has demonstrated that renewable energy deployment cannot be understood in isolation from subsidy politics, governance arrangements, and broader political economy dynamics. While recent regulatory reforms suggest a potential turning point, significant challenges remain in aligning short-term social objectives with long-term sustainability goals.

By offering an extensive and theoretically grounded analysis, this article contributes to a deeper understanding of renewable energy transitions in emerging economies. For Indonesia, the path forward will require not only technological innovation but also institutional reform, political commitment, and inclusive governance. Renewable energy, when embedded within a coherent energy security framework, holds the potential to enhance economic resilience, environmental sustainability, and social equity simultaneously.

REFERENCES

1. Bissett, N., Soraya, N., Sungkono, K., & Santy, M. (2021). Indonesia new MEMR regulation on rooftop solar generating interests. *Global Compliance News*. <https://www.globalcompliancencnews.com/2021/10/04/indonesia-new-memr-regulation-on-rooftop-solar-generating-interest-in-indonesian-rooftop-solar-20092021/>
2. Bourcet, C. (2020). Empirical determinants of renewable energy deployment: A systematic literature review. *Energy Economics*, 85, 104563. <https://doi.org/10.1016/j.eneco.2019.104563>
3. Burke, P. J., & Kurniawati, S. (2018). Electricity subsidy reform in Indonesia: Demand-side effects on electricity use. *Energy Policy*, 116, 410–421. <https://doi.org/10.1016/j.enpol.2018.02.018>
4. Burke, P. J., & Siyaranamual, M. D. (2019). No one left behind in Indonesia? *Bulletin of Indonesian Economic Studies*, 55(3), 269–293. <https://doi.org/10.1080/00074918.2019.1690410>
5. Burke, P. J., Widnyana, J., Anjum, Z., Aisbett, E., Resosudarmo, B., & Baldwin, K. G. H. (2019). Overcoming barriers to solar and wind energy adoption in two Asian giants: India and Indonesia. *Energy Policy*, 132, 1216–1228. <https://doi.org/10.1016/j.enpol.2019.05.055>
6. Buur, L., Pedersen, R. H., Nystrand, M. J., Macuane, J. J., & Jacob, T. (2020). The politics of natural resource investments and rights in Africa: A theoretical approach. *The Extractive Industries and Society*, 7(3), 918–930. <https://doi.org/10.1016/j.exis.2020.06.004>
7. Center for Data and Information Technology on Energy and Mineral Resources. (2016). Management of the national energy supply and utilization chain. Ministry of Energy and Mineral Resources.
8. Chen, C., Pinar, M., & Stengos, T. (2021). Determinants of renewable energy consumption: Importance of democratic institutions. *Renewable Energy*, 179, 75–83. <https://doi.org/10.1016/j.renene.2021.07.030>
9. Cheon, A., & Urpelainen, J. (2014). Escaping oil's stranglehold: When do states invest in energy security? *Journal of Conflict Resolution*, 58, 1–31.
10. Cherp, A., & Jewell, J. (2014). The concept of energy security: Beyond the four As. *Energy Policy*, 75, 415–421. <https://doi.org/10.1016/j.enpol.2014.09.005>
11. Cindy, M., & Fitriyanti, V. (2021). A turning point for renewable energy in Indonesia? *The Diplomat*. <https://thediplomat.com/2021/10/a-turning-point-for-renewable-energy-in-indonesia/>
12. Directorate General of Oil and Gas. (2021). Grand strategy minerals and coal. Ministry of Energy and Mineral Resources.
13. Directorate General of Oil and Gas. (2021). Oil and gas statistics, semester 1 2021. Ministry of Energy and Mineral Resources.
14. Geri, L. R., & McNabb, D. E. (2011). *Energy policy in the U.S.: Politics, challengers, and prospects for change*. CRC Press.