State Capitalism and Renewable Energy Transition in Environmental Policy: The Danantara Case

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Abstract. The renewable energy transition is central to global environmental policy and climate governance. In Indonesia, the introduction of Danantara as a state-led clean energy investment platform represents a key step toward achieving Net Zero Emissions by 2060. This study critically examines Danantara through the lens of state capitalism and the political economy of energy transition. Employing a historical institutionalist framework and document-based policy analysis, the research investigates how the platform operates within existing monopolistic state structures. Findings reveal that although Danantara is positioned as a green investment mechanism, it largely reinforces centralized control through state-owned enterprises and regulatory dominance, reflecting a pattern of "green monopoly." The results suggest that sustainability discourse in this context functions as both an environmental strategy and a legitimizing tool for state-driven economic power. While Danantara holds potential to mobilize renewable energy financing, its limited governance transparency and constrained market participation hinder inclusive energy justice. The study concludes that effective renewable energy transition in Indonesia requires structural reforms promoting decentralized governance, transparent market regulation, and participatory environmental policy.. **Keywords:** Renewable energy transition, Environmental policy, Political economy, Green monopoly, Energy governance

1 Introduction

The global climate crisis has positioned the transition to renewable energy as an urgent and unavoidable agenda. Rising carbon emissions continue to exacerbate ecological vulnerabilities and generate complex socio-economic pressures, demanding policies that can reconcile economic growth with environmental sustainability [1]. Normatively, an energy transition should not only be assessed by the ambition of net-zero targets, but also by its ability to foster inclusive governance, transparency, and energy justice. In this sense, public policy instruments in the energy sector are expected to function not merely as vehicles to

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meet global commitments, but also as mechanisms to ensure fair distribution of benefits and the strengthening of democratic accountability at the national level.

Indonesia faces considerable challenges in realizing this vision. As one of the largest fossil fuel producers and consumers in Southeast Asia, its national energy mix remains heavily reliant on coal, oil, and natural gas. At the same time, the government has pledged to achieve Net Zero Emissions by 2060, a commitment that requires accelerating investment and diversifying energy sources. As part of this strategy, the government introduced Danantara, a renewable energy investment platform promoted as an innovative mechanism to mobilize green capital and strengthen Indonesia's position within the global narrative of sustainable development [2]. Over the past decade, Indonesia's primary energy supply has remained overwhelmingly dependent on fossil fuels. Coal use expanded significantly, rising from 29% in 2012 to more than 40% by 2021-2023, while oil's share declined and natural gas maintained a relatively stable proportion. In contrast, renewables have stagnated, falling from around 18-24% in 2010 to only 13-15% in recent years, well below the government's 23% target for 2025. This trajectory reflects both the entrenched dominance of fossil fuels and the sluggish penetration of renewable energy, underscoring the urgency of accelerating the transition to a more sustainable energy mix in Indonesia [3].

Critical questions arise regarding the institutional design of Danantara rather than fostering a competitive and participatory energy market, the platform remains deeply embedded within the centralized structures of state-owned enterprises (SOEs) and the logic of state capitalism. This produces a paradox, while Danantara promises to accelerate the renewable energy transition through green investment [2], it simultaneously reinforces the monopoly structures that have long shaped Indonesia's energy sector. The central question, therefore, is whether Danantara truly represents an inclusive energy transition, or whether it constitutes a repackaged form of state monopoly under the language of sustainability. Against this backdrop, this study seeks to critically examine Danantara as a public policy instrument and to analyse the role of the state in managing the energy transition in Indonesia. Employing a political economy of energy perspective and a historical institutionalist framework, the study investigates how institutional legacies and state-market relations shape the trajectory of this policy initiative. While previous studies have examined state monopolies, oligarchic networks, and political tensions in Indonesia's energy sector, none has focused specifically on Danantara as a policy instrument. This study addresses that gap by analysing how Danantara links the rhetoric of green investment with the logic of state-led monopoly, thereby advancing empirical understanding of Indonesia's renewable energy trajectory. In doing so, it also contributes to theoretical debates on state capitalism and the emerging phenomenon of green monopoly in the Global South.

2 Literature Review

Previous studies provide important insights into this dilemma. Research shows that power-sector liberalization in large developing countries repeatedly encounters institutional and political constraints that direct competition [4], aligning with evidence from Indonesia where formal reform coexists with persistent state dominance [5]. Scholars further argue that sustainability rhetoric can be mobilized to legitimize existing configurations of power rather than to democratize governance an argument reflected in work highlighting how "green" narratives mask consolidation by incumbent actors [6]. Together, these studies suggest that new policy instruments may advance the energy transition discursively while leaving monopoly structures largely intact. The literature identifies three recurring dynamics with direct relevance to Danantara: (1) historically rooted institutional stickiness that favours incumbents, (2) elite steering of low-carbon transitions that can constrain inclusivity, and (3) state-capitalist instruments that may mobilize finance yet reproduce monopoly power without governance reform. Despite this, there remains a clear research gap: no prior study has examined Danantara itself as a policy instrument, probing how its design, ownership, and regulatory embedding mediate the promises of sustainability against the realities of state-driven monopoly in Indonesia. Addressing this gap enables a more precise diagnosis of whether Danantara constitutes an inclusive transition mechanism or a rebranding of state monopoly under a green narrative.

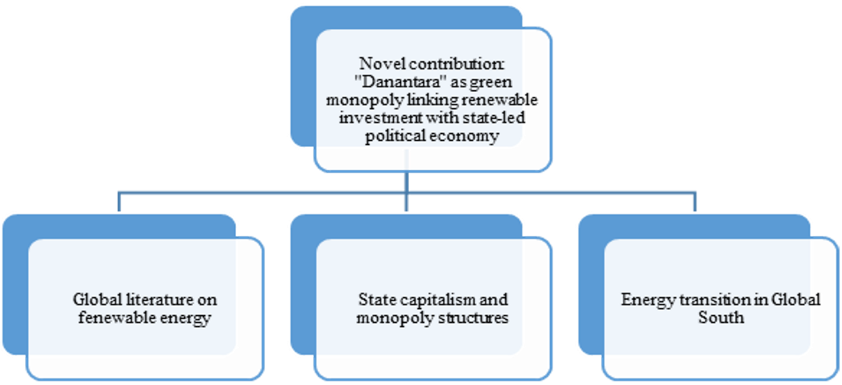

Fig. 1. Research contribution and novelty map.

The diagram illustrates the core theoretical contribution of this study, namely the conceptualization of Danantara as a “green monopoly”, which links renewable energy investment with a state-led political economy. This novel contribution is situated at the intersection of three strands of literature. First, the global literature on renewable energy provides insights into the dynamics of investment, regulation, and technological change underpinning energy transitions worldwide. Second, scholarship on state capitalism and monopoly structures highlights how governments, particularly in emerging economies, deploy state-owned enterprises and regulatory mechanisms to consolidate control over strategic sectors, often under the discourse of market reform or green development. Third, the body of work on energy transition in the Global South emphasizes the distinct challenges faced by developing countries, including dependency on foreign capital, distributive inequalities, and the centrality of state intervention in directing energy transitions.

3 Theoretical Framework

The political economy of energy provides the first lens through which this study approaches Danantara. Rather than viewing energy policy as a purely technical or economic matter, this perspective situates energy within broader structures of power, institutions, and material interests. Energy is understood as an arena of political-economic contestation, where the state, market actors, and societal stakeholders compete over access, control, and distribution of resources [7]. This framework allows us to interrogate how Indonesia’s transition toward renewable energy is not only about meeting climate targets but also about shaping authority and legitimacy in the energy sector. The concept of state capitalism further sharpens the analysis by focusing on how states strategically use institutions and state-owned enterprises (SOEs) to accumulate wealth and consolidate power. In this framework, SOEs are not merely economic actors but political instruments that serve to align capital accumulation with state priorities. Indonesia’s energy sector demonstrates this clearly: the state retains monopoly authority through PLN and other SOEs, while selectively engaging private capital under terms favorable to state control. Applying state capitalism to the case of Danantara helps illustrate how green investment platforms are not neutral vehicles of sustainability but are instead deeply entangled with state strategies of accumulation and governance. By combining these four perspectives, political economy of energy, historical institutionalism, state capitalism, and green monopoly, this study constructs a strong theoretical framework to analyse Danantara. Together, they enable a critical reading of how new policy instruments in Indonesia's energy sector are embedded within long-standing institutional patterns, shaped by state-led strategies of accumulation, and legitimized through sustainability discourses. This integrated framework not only situates Danantara within Indonesia's political-economic context but also contributes to broader debates on energy transition governance in the Global South.

4 Methodology

This research adopts a qualitative descriptive design with a focus on critical policy analysis [8]. Rather than attempting to quantify outputs, the study seeks to understand how political narratives, institutional arrangements, and state market relations shape Indonesia's renewable energy transition through the Danantara program. Such an approach is particularly relevant for studies on energy governance in developing countries, where formal policies often intersect with rooted political economic structures.

The data for this study were drawn from three complementary sources. First, policy documents including national energy strategies such as the *Rencana Umum Energi Nasioanal* (RUEN), the *Rencana Umum Penyediaan Tenaga listrik* (RUPTL), and regulations directly linked to Danantara. Second, institutional and international reports, such as those published by the International Energy Agency (IEA), International Renewable Energy Agency (IRENA), and the World Bank, which provide independent assessments of Indonesia's energy investment landscape. Third, academic literature indexed in Scopus and Web of Science, covering debates on energy transitions, state capitalism, and renewable energy governance. By combining these three sources, the study applies a triangulation strategy, ensuring that conclusions are not derived from a single perspective but from multiple, reinforcing streams of evidence.

The analysis followed two main steps. First, a discourse analysis was carried out to examine how the government frames Danantara within the broader narrative of sustainability and Net Zero commitments. This step involved identifying keywords, recurring themes, and the rhetorical strategies that present Danantara as a "green" investment initiative. Second, an institutional analysis traced the regulatory and organizational arrangements of Indonesia's energy sector, focusing on the role of state-owned enterprises (SOEs) and the persistence of centralized control. Taken together, these two approaches capture both the ideational dimension (how sustainability is framed) and the structural dimension (how monopoly practices continue to shape the energy sector). For managing and coding the large corpus of text, NVivo was utilized. This managing enabled systematic classification of textual data into thematic categories and facilitated the triangulation of findings across policy documents, reports, and academic sources. The coding scheme was developed iteratively, combining deductive categories (based on theoretical frameworks such as state capitalism and historical institutionalism) and inductive themes emerging from the data.

5 Findings and Discussion

Danantara was formally introduced by the Indonesian government as an innovative policy instrument designed to accelerate the country's renewable energy transition [2]. Officially, its mandate is to mobilize green investment, reduce reliance on fossil fuels, and align Indonesia's energy system with the global agenda for Net Zero Emissions by 2060. Structurally, it functions as a state-coordinated investment platform consolidating financial flows from both domestic and international sources. At the discursive level, policymakers present Danantara as both a mechanism for modernizing the energy sector and a safeguard of national energy sovereignty [9]. Yet closer control reveals that its institutional design embeds the initiative firmly within state-centric frameworks, where decisive authority over capital flows and strategic decision-making remains concentrated in the hands of the state.

These discursive tendencies are also reflected in the textual evidence. An analysis of goverment and policy documents highlights the recurrence of certains keywords and thematic clusters that reinforce state-led narratives, while inclusivity and justice remain marginal. The word frequency analysis of government and policy documents shows that terms such as green investment (127 mentions) and Net Zero 2060 (96 mentions) dominate the discourse, reflecting an emphasis on sustainable finance and national climate commitments. Meanwhile, energy soverignty (74 mentions) is often invoked to legitimize centralized state control, while references to inclusivity (41 mentions) remian largely rhetorical. Mentions of SOEs, particularly PLN (38 menyions) depict it as the sector's gatekeeper, whereas the private sector (19 mentions) is framed as a limited partner and community projects (8 mentions) are note only symbolically. Overall, these patterns underscore the persistence of state centric narratives and the marginalization of private and community roles in Indonesia's renewable energy transition (Author's NVivo coding (2024)). The prevalence of terms such as green investment, net zero 2060, and energy sovereignty highlights the state's emphasis on projecting leadership and authority in the global climate arena. By contrast, references to inclusivity, private sector involvement, or community-based projects are far less frequent, suggesting that participatory narratives are largely symbolic rather than operational. Beyond word frequency, the thematic clustering of discourses offers a deeper view of how policy narratives are organized.

The NVivo analysis reveals five central clusters shaping Indonesia's energy policy discourse. Sustainability narratives revolve around the Net Zero 2060 and the rhetoric of energy sovereignty, while institutional control remains consolidated under PLN's dominance as a single buyer. Market participation is acknowledged through private investors, IPPs, and community projects, yet these actors operate within tight state supervision, reflecting a broader logic of state capitalism that consolidates assets and entrenches elite networks. Although equity and justice are invoked rhetorically, distributive outcomes are largely tied to regions offering the highest returns, underscoring the marginalization of inclusivity within the renewable energy agenda. This clustering underscores the coexistence of legitimizing narratives, sustainability and sovereignty, with institutional practices that prioritize state control and SOE dominance. Equity and justice, though present, appear as peripheral concerns rather than central pillars of the energy transition. Taken together, the word frequency analysis, thematic clustering, and cluster mapping reveal a paradox : while the discourse of sustainability legitimizes Danantara as a national instrument of transition, its institutional design consolidates state monopoly and narrows the space for non-state actors. This paradox sets the stage for the following discussion, which situates Danantara within broader institutional and financial comparisons, including its positioning alongside global soverign wealth funds.

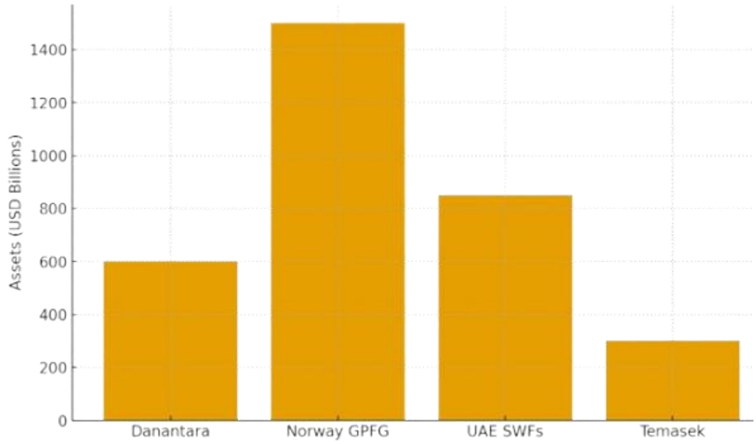

Fig. 2. Sovereign Wealth Funds : Asset Comparison.

Figure 2 illustrates the relative asset sizes of Danantara compared to several major sovereign wealth funds (SWFs), namely Norway's Government Pension Fund Global (GPFG), the United Arab Emirates' sovereign funds, and Singapore's Temasek. The comparison highlights significant disparities in scale, historical development, and institutional maturity. Danantara, with estimated consolidated assets of around USD 600 billion, appears sizable in absolute terms. However, it remains smaller than both the Norwegian GPFG, which is the world's largest sovereign wealth fund with over USD 1.5 trillion, and the UAE's combined funds, which hold approximately USD 850 billion. By contrast, Temasek manages a more modest USD 300 billion, but its long history and corporate governance structure provide it with greater global credibility than the newly established Danantara [10]. The visualization underscores two key insights. First, Danantara's relative size positions it as a potentially influential player in global investment markets, particularly in the renewable energy sector. Second, however, the chart also reveals that total asset consolidation does not automatically translate into institutional strength or legitimacy. Unlike its global counterparts, Danantara's asset base is derived primarily from state-owned enterprises (SOEs) rather than accumulated sovereign reserves, raising questions about sustainability, efficiency, and political autonomy. Figure 4 suggests that while Danantara aspires to enter the ranks of major sovereign wealth funds, its structural foundations and political-economic context differentiate it sharply from more established global funds. Its future influence will depend not only on asset size but also on governance quality and the credibility of its investment strategies.

In practice, the uniqueness of Danantara's foundations is most clearly reflected in the architecture of its investment mechanism. This duality is especially visible in Danantara's investment mechanism. While the platform as though opens space for external capital participation, state-owned enterprises (SOEs) are positioned as the central actors, simultaneously acting as gatekeepers and beneficiaries of renewable energy projects. Rather than leveling the playing field for private firms or community-based initiatives, the institutional architecture channels resources toward reinforcing state-led control. The persistence of monopoly is most evident in the role of PLN, the national electricity company, which continues to dominate not only electricity distribution but also the terms of renewable energy development. Regulatory arrangements governing tariffs, grid access, and power purchase agreements privilege SOEs while marginalizing independent power producers. This mirrors what Victor and Heller (2007) identify as the "partial liberalization trap," where formal reforms coexist with entrenched state dominance, reproducing monopolistic practices rather than dismantling them [4].

The marginalization of Independent Power Producers (IPPs) and community based initiatives further illustrates the exclusivity of Danantara's design. Many IPP projects have been cancelled due to rigid Power Purchase Agreement (PPA) terms that favor PLN, Indonesia's national utility, as the sole off-taker. Reports suggest that more than half of private renewable projects proposed between 2018 and 2022 failed to secure financial closure, not because of technical incapacity but because of structural and contractual barriers. Community-led renewable projects are even rarer, facing financing challenges and limited regulatory approval. These dynamics reinforce the critique that while Danantara promotes the rhetoric of inclusivity, in practice it sidelines non-state actors and narrows the scope of participation in the energy transition. Taken together, the limited space for independent producers and the near absence of community-driven projects illustrate how Danantara reinforces rather than deconstructs structural monopolies. This context provides the backdrop for understanding how Indonesia's broader policy frameworks, particularly the National Energy General Plan (RUEN) and PLN's Electricity Supply Business Plan (RUPTL), seek to align renewable targets with actual investment trajectories.

Indonesia's national energy framework sets an ambitious political and policy agenda for a renewable transition, but implementation gaps between strategic planning and investment realities complicate its translation into effective project financing. The National Energy General Plan (RUEN) articulates national objectives to increase the share of renewables and to align Indonesia with long-term decarbonization pathways, thereby providing the formal policy backdrop for subsequent instruments and plans. At the operational level, PLN's Electricity Supply Business Plan (RUPTL) for 2025-2034 functions as the primary vehicle that schedules generation additions, defines offtake arrangements, and allocates grid access, yet recent editions of the RUPTL reveal persistent tensions between stated renewable capacity additions and the financial and system constraints that shape actual project delivery [11]. Simultaneously, the government has moved to institutionalize Danantara as a centralized vehicle to consolidate state assets and mobilize capital for priority sectors, including green energy; parliamentary and press accounts describe Danantara's creation as a Temasek-like investment arm endowed with substantial initial capital and managerial authority over strategic SOEs. Independent investment-focused analyses underline the magnitude of the financing challenge confronting these policy ambitions : estimates indicate a multibillion-dollar investment shortfall for Indonesia to meet near and mid-term climate and energy targets, with private capital required to fill a large portion of that gap if the country is to realize RUEN/RUPTL objectives. International technical assessments, most notably the IEA's sectoral roadmap, confirm that Indonesia's net-zero and electricity decarbonization goals are technically achievable but contingent on substantive reforms to market design, bankable offtake arrangements, grid investment, and credible de-risking mechanisms to attract large-scale private and international finance [12].

From a historical institutionalist perspective, Danantara represents both continuity and break. The creation of a new institutional vehicle reflects Indonesia's longstanding path dependency of addressing governance challenges through layering, building new agencies rather than strengthening existing ones such as the Indonesia Investment Authority (INA). At the same time, its direct placement under presidential authority marks a critical juncture in the centralization of economic governance. This consolidation of power exemplifies Indonesia's distinctive model of state capitalism, where developmental imperatives blend with the political logic of patronage. Theories of oligarchy in Indonesia further illuminate the risks: SOEs have historically functioned as sites of rent distribution and elite reproduction. With Danantara now controlling assets worth IDR 9,600 trillion [13], the potential for a green monopoly emerges where the transition to renewable energy becomes less a democratized project and more an instrument of oligarchic accumulation.

Regulatory frameworks further reinforce this concentration of power. Licensing processes for renewable projects remain bureaucratic and centralized, discouraging smaller investors and sidelining local governments. Legal provisions emphasize hierarchical state oversight, ensuring that SOEs retain control over strategic assets [14]. Sustainability discourse plays a critical legitimating role in this architecture. By embedding Danantara in Indonesia's Net Zero 2060 roadmap, policymakers construct a narrative of inevitability: the green transition is portrayed as a national imperative requiring strong state leadership. Yet this framing obscures crucial questions of inclusivity, accountability, and distribution. As Lee and Shahar (2020) demonstrate, ecological narratives in emerging economies are frequently mobilized to reinforce state authority rather than democratize governance [15]. In Indonesia, the petition of global climate commitments positions the state as a climate leader even as monopolistic structures persist at home. Despite the prominence of sustainability narratives such as Net Zero 2060 and green growth, actual renewable energy investment in Indonesia has progressed only incrementally. Annual investment has risen slowly from just above USD 1 billion in 2010 to around USD 4 billion in 2024. In 2022, renewables accounted for around 14% of Thailand's primary energy supply and nearly 20% in Vietnam, reflecting more ambitious policy implementation and stronger private sector participation [12]. Indonesia's renewable share was positioned at just about 10%, positioning it behind its regional peers despite similar opportunities for solar, hydro, and geothermal resources. This gradual increase demonstrates that political discourse has not been matched by proportional financial commitment, thereby exposing a critical gap between ambitious targets and practical implementation. Yet these ambitious sustainability narratives are not matched by proportional invesment. Renewable energy financing has expanded only gradually, underscoring the structural inertia that will be further examined through Indonesia's institutional and discursive dynamics.

6 Conclusion and Implications

In sum, Danantara represents both opportunity and paradox, it accelerates the mobilization of green finance, yet it also risks narrowing the democratic space of energy governance. Addressing this paradox requires balancing investment with reform, and innovation with accountability. Only, through such balance can the energy transition in Indonesia move beyond symbolic commitment and towards a truly inclusive and sustainable future. While this study provides critical insights into the political economy of Danantara, several limitations must be acknowledged. First, the analysis relies primarily on policy documents, government reports, and secondary academic literature, which may not fully capture the perspectives of local communities, private investors, and civil society actors directly affected by the platform. Second, given that Danantara is a relatively recent policy initiative, the long-term impacts on market competition, energy access, and institutional transformation remain uncertain. Future research could address these gaps in three main ways. By conducting field-based studies that engage with stakeholders across multiple levels, from policymakers and business actors to community-led renewable energy initiatives, to better understand how Danantara is negotiated and contested in practice. By employing comparative analysis with other state-led green investment models in the Global South, researchers can assess whether Indonesia's experience reflects a broader trend of "green state capitalism" or remains context-specific. By integrating interdisciplinary approaches that combine political economy with environmental justice and socio technical transition studies, scholars can more comprehensively explore how monopoly structures intersect with sustainability goals. By highlighting these directions, this study not only contributes to current debates on energy transition governance but also opens pathways for future scholarship that interrogates the tensions between centralization, sustainability, and democratic accountability in emerging economies.

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