

Governing Climate Accountability: Reassessing Legal Frameworks for Corporate Environmental Responsibility in the Net-Zero Era

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ABSTRACT

Climate change requires stronger regulatory frameworks to ensure meaningful corporate participation in achieving climate goals. As Indonesia pursues its net-zero emissions target by 2060 or sooner, concerns remain regarding the adequacy of its legal framework governing corporate environmental responsibility. This study reassesses Indonesia's legal framework from the perspective of climate accountability using a normative legal research approach that examines constitutional provisions, environmental legislation, corporate governance regulations, climate policies, international commitments, and relevant legal doctrines. The findings indicate that Indonesia has established a substantial foundation through environmental protection laws, corporate social and environmental responsibility requirements, sustainability reporting frameworks, and climate-related policies. However, significant gaps persist in relation to mandatory corporate climate obligations, climate disclosure standards, enforcement mechanisms, carbon accountability, and climate liability provisions. Existing regulations remain largely focused on conventional environmental compliance rather than comprehensive climate governance aligned with net-zero objectives. The study concludes that strengthening climate accountability requires legal reforms that integrate climate governance into corporate regulation, enhance transparency and reporting requirements, establish enforceable emissions reduction obligations, and develop climate-specific liability mechanisms. These reforms are essential to support Indonesia's transition toward a sustainable, low-carbon, and climate-resilient economy.

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A. INTRODUCTION

Climate change has become one of the most pressing global challenges of the twenty-first century, threatening environmental sustainability, economic development, and social well-being across nations. Scientific evidence consistently demonstrates that rising greenhouse gas (GHG) emissions resulting from human activities have accelerated global warming, leading to extreme weather events, sea-level rise, biodiversity loss, and increasing environmental degradation. These impacts extend beyond ecological concerns and increasingly affect economic stability, public health, food security, and social justice. Consequently, climate change is no longer viewed solely as an environmental issue but as a multidimensional governance challenge that requires coordinated action from governments, corporations, civil society, and international organizations. In response to this growing crisis, the international community has developed various legal and policy frameworks aimed at reducing emissions and promoting sustainable development, recognizing that effective climate governance requires collective and long-term commitments from all stakeholders (Mustafa, 2024; Singh, 2025).

The adoption of the Paris Agreement in 2015 marked a significant milestone in global climate governance by establishing a collective commitment to limit global temperature increases to well below 2°C above pre-industrial levels and pursue efforts to restrict warming to 1.5°C. Building upon earlier frameworks such as the Kyoto Protocol, the Agreement encourages countries to achieve carbon neutrality or net-zero emissions while adhering to the principle of “common but differentiated responsibilities,” which acknowledges differences in national capacities and obligations in addressing climate change (Bodansky, Brunnée, & Rajamani, 2017). Nevertheless, significant challenges remain, including weak enforcement mechanisms, inadequate climate financing for developing countries, and the misalignment of existing Nationally Determined Contributions (NDCs) with the urgency of climate science (Abdulkadir, Abdulquadir, & Nevaluz, 2025; Singh, 2025). These conditions have intensified attention toward climate accountability, which encompasses the legal, institutional, and governance mechanisms designed to ensure that governments, corporations, and other actors effectively contribute to climate mitigation and adaptation efforts while promoting transparency, cooperation, and equitable climate action (Abdulkadir et al., 2025; Mustafa, 2024).

Climate accountability has become a fundamental principle of contemporary environmental governance, expanding the focus of environmental law beyond traditional pollution control toward emissions reduction, climate risk management, sustainability disclosure, and accountability for environmental impacts associated with economic activities. Within this evolving framework, corporations have emerged as central actors due to their significant contribution to greenhouse gas emissions and their substantial influence on production systems, energy consumption, and natural resource utilization. Corporate activities in sectors such as energy, mining, manufacturing, transportation, agriculture, and forestry account for a considerable share of global carbon emissions, making businesses increasingly subject to environmental responsibilities that extend beyond mere regulatory compliance. Consequently, governments and international institutions have strengthened corporate environmental obligations through sustainability reporting frameworks, Environmental, Social, and Governance (ESG) standards, and climate-related disclosure requirements. These developments reflect a broader transition from conventional environmental compliance toward a more comprehensive framework of corporate climate accountability that aligns business operations with global sustainability objectives, including carbon reduction, renewable energy adoption, and responsible environmental management.

Indonesia represents a particularly significant case within the global climate governance landscape. As one of the largest economies in Southeast Asia and a major contributor to global greenhouse gas emissions, Indonesia plays a critical role in international climate mitigation efforts. The country’s emissions profile is shaped by industrial activities, energy production, land-use change, deforestation, peatland degradation, and transportation, while at the same time Indonesia possesses extensive tropical forests that

function as important global carbon sinks. This dual position creates both opportunities and challenges for climate governance. Indonesia has demonstrated its commitment to addressing climate change through the ratification of the Paris Agreement under Law Number 16 of 2016, committing to reduce greenhouse gas emissions by 29% independently and up to 41% with international support by 2030 (Husada & Joesoef, 2022). Furthermore, the government has developed several strategic policy instruments, including the Nationally Determined Contribution (NDC), Enhanced NDC, and the Long-Term Strategy for Low Carbon and Climate Resilience 2050, while also establishing a target of achieving net-zero emissions by 2060 or earlier (Bato, Rande, Lestari, Perwitasari, & Zana, 2025). These initiatives demonstrate Indonesia's increasing recognition of the need to balance economic development objectives with environmental sustainability and international climate commitments.

Despite these significant commitments, concerns remain regarding the effectiveness of Indonesia's legal and institutional framework in ensuring corporate climate accountability. Existing environmental regulations have traditionally been designed to address conventional environmental issues and often struggle to accommodate the more complex challenges associated with climate change mitigation and low-carbon transitions. Various implementation barriers persist, including weak inter-agency coordination, limited private sector participation, inadequate financing mechanisms, and the absence of a more comprehensive climate-specific regulatory framework (Bato et al., 2025; Oktaviany & Hadiyantina, 2025). While community-based initiatives such as the Climate Village Program (ProKlim) have contributed to local climate adaptation and resilience efforts, their effectiveness is frequently constrained by insufficient legal enforcement and limited support from higher levels of government (Bato et al., 2025; Ulum, Yunus, & Irwansyah, 2022). As a result, the gap between Indonesia's ambitious climate commitments and the practical enforcement of corporate climate responsibilities remains a critical issue, highlighting the need for stronger regulatory mechanisms capable of ensuring greater corporate accountability and supporting the country's transition toward a sustainable low-carbon economy.

Despite Indonesia's strong commitment to climate action through the Paris Agreement, the Nationally Determined Contribution (NDC), and its net-zero emissions target by 2060, questions remain regarding the effectiveness of its legal framework in ensuring corporate climate accountability. Existing regulations, including Law Number 32 of 2009 concerning Environmental Protection and Management as amended by Law Number 6 of 2023, provide important mechanisms for environmental protection. However, these regulations were primarily designed to address conventional environmental issues and are often insufficient to respond to the more complex challenges of climate change mitigation, emissions reduction, and the transition toward a low-carbon economy. Furthermore, climate-related provisions remain fragmented across environmental, energy, forestry, investment, and corporate governance regulations, creating regulatory inconsistencies and limiting the effectiveness of climate accountability enforcement.

The transition toward net-zero emissions requires a more integrated legal framework that establishes clear corporate obligations, monitoring mechanisms, disclosure standards, and enforcement procedures. While many countries have adopted mandatory climate disclosures, carbon pricing mechanisms, climate due diligence requirements, and climate litigation as tools to strengthen climate accountability, Indonesia has paid relatively limited attention to the adequacy of its legal framework governing corporate climate responsibility. Therefore, this study reassesses Indonesia's legal framework for corporate environmental responsibility from a climate accountability perspective using a normative legal approach. Specifically, it examines how existing laws regulate corporate responsibility in the context of climate change and identifies legal reforms needed to strengthen corporate climate accountability and align domestic environmental governance with international climate commitments.

B. LITERATURE REVIEW

Climate Accountability: Conceptual Foundations

Climate accountability refers to the legal, institutional, and governance mechanisms through which governments, corporations, and other stakeholders are held responsible for their contributions to climate change and their efforts to mitigate environmental impacts. Evolving from broader concepts of environmental accountability, it extends beyond conventional regulatory compliance to encompass emissions reduction, climate risk management, transparency, disclosure obligations, liability for environmental harm, and the integration of climate considerations into decision-making processes. Its development is closely linked to the recognition that climate change is a collective action problem requiring coordinated efforts among governments, corporations, and civil society, making accountability mechanisms essential for transforming climate commitments into enforceable actions (Hormio, 2023). In this context, climate litigation has emerged as an important instrument for strengthening accountability, advancing climate justice, and reinforcing the responsibility of both states and corporations to address climate-related risks (Setzer & Vanhala, 2019). At the same time, increasing demands have been directed toward carbon-intensive industries, particularly the fossil fuel sector, to assume greater responsibility for their contributions to climate change and support mitigation and compensation efforts for affected communities (Grasso & Heede, 2023). Collectively, these developments reflect a broader shift from reactive environmental protection toward proactive climate governance aimed at reducing greenhouse gas emissions and promoting sustainable development.

Corporate Environmental Responsibility in Contemporary Governance

Corporate Environmental Responsibility (CER) refers to the obligation of corporations to conduct business activities in ways that minimize environmental harm and contribute to environmental sustainability. While initially focused on compliance with environmental regulations related to pollution control, waste management, and resource utilization, CER has evolved into a broader framework that integrates sustainability into corporate governance, strategic planning, operational processes, and stakeholder engagement. This transformation reflects increasing environmental awareness, stakeholder expectations, investor demands, and evolving regulatory frameworks, requiring corporations to move beyond minimum legal compliance and proactively address environmental challenges through sustainable business practices (Hilson, 2016; Rayahu et al., 2025). Grounded in stakeholder theory and legitimacy theory, CER recognizes that corporations have responsibilities not only to shareholders but also to employees, consumers, communities, governments, and future generations, while simultaneously seeking to maintain social legitimacy by aligning business activities with societal expectations (Bounid & El Hammouti, 2024). In recent years, CER has become closely linked to climate accountability, with corporations expected to measure, monitor, and reduce greenhouse gas emissions, strengthen transparency, collaborate with stakeholders, and contribute to climate mitigation efforts. Moreover, evidence suggests that strong environmental responsibility can enhance financial performance, investor confidence, long-term profitability, and stakeholder trust, reinforcing the strategic importance of sustainability within modern corporate governance (Rayahu et al., 2025; Setyowati, Purnomowati, Sari, & Ramadhan, 2021).

The Net-Zero Emissions Paradigm and Corporate Obligations

The concept of net-zero emissions has become a defining principle of contemporary climate governance, referring to a condition in which greenhouse gas emissions released into the atmosphere are balanced by removals through natural or technological carbon sinks. Following the adoption of the Paris Agreement, net-zero targets have gained widespread acceptance, with more than 769 entities—including countries and corporations—adopting such commitments, although only a small proportion meet robust effectiveness criteria (Hale et al., 2022). Achieving net-zero emissions requires substantial transformations across economic sectors and depends heavily on corporate participation through emissions reduction

targets, transition strategies, low-carbon investments, and climate-related disclosures. However, many voluntary corporate commitments have been criticized for lacking transparency, measurable implementation plans, and accountability mechanisms, creating risks of greenwashing and weakening their environmental impact (Paliampelou, 2024). Consequently, scholars and policymakers increasingly emphasize the need for stronger regulatory frameworks, legally binding standards, and governance mechanisms capable of monitoring compliance and ensuring that corporate climate commitments contribute to meaningful environmental outcomes (Atamewan, 2022; Hale et al., 2022).

Research Gap and Conceptual Framework

Existing literature provides substantial insights into climate governance, environmental law, corporate sustainability, ESG reporting, climate disclosure, and climate accountability, including the role of environmental regulations in promoting sustainability, the significance of corporate climate disclosures, the emergence of climate litigation, and the implications of net-zero commitments for corporate governance and environmental policy. However, significant gaps remain regarding the legal dimensions of corporate climate accountability in Indonesia, as most studies focus on policy implementation, environmental management practices, or sustainability reporting, while relatively limited attention has been devoted to assessing the adequacy of Indonesia's legal framework in addressing climate accountability within the context of net-zero transitions. Moreover, few studies have examined how constitutional provisions, environmental legislation, climate policies, and corporate governance regulations collectively shape corporate environmental responsibility. To address this gap, this study employs a comprehensive normative legal analysis that positions climate accountability as the central analytical lens, linking environmental law, corporate responsibility, net-zero governance, climate disclosure, and legal liability to evaluate whether Indonesia's existing legal instruments provide sufficient mechanisms to ensure meaningful corporate participation in the transition toward a sustainable and low-carbon future.

C. RESEARCH METHOD

Research Design

This study employs a normative legal research approach to examine the adequacy of Indonesia's legal framework governing corporate environmental responsibility in the context of climate accountability and the transition toward net-zero emissions. As a doctrinal legal study, the research focuses on the analysis of legal norms, principles, doctrines, statutory provisions, and legal concepts regulating corporate environmental obligations, rather than examining empirical perceptions or organizational behavior. This approach is appropriate because the primary objective is to evaluate existing legal instruments, assess their coherence and effectiveness in supporting climate accountability, identify regulatory gaps, and formulate recommendations for legal reform. Using a qualitative legal analysis framework, the study systematically examines and interprets relevant legal materials based on established legal doctrines and principles to provide a comprehensive understanding of the relationship between environmental law, climate governance, and corporate accountability within the Indonesian legal system.

Research Approach

To achieve the objectives of the study, this research employs a combination of statutory, conceptual, and comparative legal approaches. The statutory approach is used to examine relevant legal instruments governing environmental protection, climate change mitigation, corporate governance, sustainability reporting, and climate accountability in Indonesia, including the 1945 Constitution, Law Number 32 of 2009 as amended by Law Number 6 of 2023, Law Number 40 of 2007 concerning Limited Liability Companies, Law Number 16 of 2016 concerning the Ratification of the Paris Agreement, as well as related government, presidential, and regulatory authority regulations. The conceptual approach is applied to analyze key legal theories and doctrines concerning climate accountability, corporate environmental responsibility, sustainable development, environmental justice, net-zero emissions

governance, corporate climate liability, ESG governance, and climate disclosure, thereby providing a normative framework for evaluating the effectiveness of existing regulations. In addition, a comparative approach is employed to review international developments related to climate disclosure regulations, mandatory sustainability reporting, corporate climate due diligence, climate accountability mechanisms, and climate litigation in various jurisdictions, with the aim of identifying regulatory innovations and best practices that may contribute to strengthening Indonesia's climate governance framework without directly transplanting foreign legal models into the domestic legal system.

Sources of Legal Materials

This study relies exclusively on secondary data in the form of legal materials, which are categorized into primary, secondary, and tertiary legal materials in accordance with normative legal research methodology. Primary legal materials consist of legally binding sources, including the 1945 Constitution of the Republic of Indonesia, national statutes, government and presidential regulations, relevant ministerial regulations, international legal instruments ratified by Indonesia, and judicial decisions related to environmental protection and climate governance. Secondary legal materials comprise academic journal articles, books, legal commentaries, doctrinal analyses, research reports, climate governance reports, policy papers, and publications from environmental and sustainability institutions that provide theoretical and analytical perspectives for interpreting legal norms. Meanwhile, tertiary legal materials include legal dictionaries, encyclopedias, indexes, legal databases, official government publications, and other reference materials that assist in clarifying legal terminology, concepts, and interpretations, thereby supporting a comprehensive evaluation of corporate environmental responsibility and climate accountability within Indonesia's legal framework.

Legal Material Collection Techniques

The collection of legal materials is conducted through documentary study and library research methods, whereby relevant legal documents, statutes, regulations, international agreements, scholarly publications, and institutional reports are identified, collected, and systematically organized according to their relevance to the research objectives. The process includes identifying legal instruments related to environmental protection and climate governance, gathering academic literature on climate accountability and corporate responsibility, reviewing international climate agreements and sustainability frameworks, classifying legal materials based on their relevance to the research questions, and verifying the validity and authority of legal sources. This systematic approach ensures the comprehensiveness, reliability, and credibility of the legal materials used in evaluating Indonesia's legal framework for corporate environmental responsibility and climate accountability.

Legal Analysis Techniques

The collected legal materials are analyzed using a qualitative normative approach that focuses on interpreting legal provisions, examining the consistency and coherence of legal instruments, and evaluating the adequacy of Indonesia's regulatory framework in supporting climate accountability and corporate environmental responsibility. The analysis involves legal interpretation through grammatical, systematic, historical, and teleological methods, legal systematization to identify relationships and potential fragmentation among regulations, normative evaluation based on principles such as sustainable development, the precautionary principle, the polluter pays principle, intergenerational equity, environmental justice, and good governance, as well as gap analysis to identify weaknesses related to corporate emissions accountability, climate disclosure, enforcement mechanisms, climate liability, and net-zero implementation. To ensure validity and reliability, the study relies on authoritative legal sources, systematic legal reasoning, and the triangulation of legislation, academic literature, international frameworks, and legal doctrines, thereby strengthening the credibility and legal grounding of the findings and recommendations.

D. RESULTS AND DISCUSSION

The Existing Legal Framework of Corporate Environmental Responsibility in Indonesia

The analysis of Indonesia's legal framework indicates that corporate environmental responsibility is regulated through a combination of constitutional provisions, environmental legislation, corporate governance regulations, and climate-related policies. At the constitutional level, the 1945 Constitution provides a strong normative foundation for environmental protection through Article 28H, which guarantees the right to a good and healthy environment, and Article 33 paragraph (4), which emphasizes sustainable and environmentally conscious economic development (A'yun & Mahfud, 2022). Environmental protection is therefore recognized not only as a policy objective but also as a constitutional and human rights obligation, reinforcing the state's responsibility to safeguard ecological integrity and regulate corporate activities that may affect environmental sustainability (Susanto, Baralaska, & Jaelani, 2024). At the statutory level, Law Number 32 of 2009 concerning Environmental Protection and Management serves as the principal legal instrument governing environmental responsibility by incorporating principles such as sustainable development, environmental justice, the polluter pays principle, precautionary measures, and public participation. The law also requires corporations to conduct environmental impact assessments, obtain environmental permits, comply with environmental quality standards, and implement environmental management systems as part of sustainable environmental governance (Ramlan & Fristikawati, 2018).

Corporate environmental responsibility is further reinforced through Law Number 40 of 2007 concerning Limited Liability Companies, particularly Article 74, which mandates Corporate Social and Environmental Responsibility (CSER) for companies operating in or related to natural resource sectors. This provision represents a significant development in Indonesian corporate law because it integrates environmental responsibility into corporate governance rather than treating it solely as a voluntary initiative (Ramlan & Fristikawati, 2018). Indonesia has also strengthened its climate governance framework through the ratification of the Paris Agreement under Law Number 16 of 2016, which legally binds the country to international climate commitments and provides the foundation for subsequent climate policies. Supporting regulations, such as Presidential Regulation Number 98 of 2021 concerning Carbon Economic Value, introduce market-based mechanisms aimed at reducing greenhouse gas emissions and supporting the transition toward a low-carbon economy, while sustainability reporting regulations encourage greater transparency and disclosure of environmental, social, and governance (ESG) performance (Sinaulan & Saputra, 2025).

Despite the existence of these legal instruments, the findings reveal that Indonesia's regulatory framework remains fragmented. Environmental protection laws, climate policies, corporate governance regulations, carbon market mechanisms, and sustainability reporting requirements largely operate as separate regulatory regimes without a unified climate accountability framework. Consequently, corporate environmental obligations are dispersed across multiple legal instruments, creating potential inconsistencies, overlapping responsibilities, and implementation challenges. Although Indonesia has established a substantial legal foundation through the Constitution, environmental legislation, corporate governance laws, climate commitments, and carbon governance regulations, these instruments were primarily designed to address conventional environmental concerns rather than the specific demands of climate accountability. As a result, the current framework does not yet fully accommodate the requirements of emissions reduction governance, corporate climate responsibility, and net-zero implementation needed to support Indonesia's transition toward a sustainable low-carbon economy.

Climate Accountability within Indonesia's Environmental Governance System

Climate accountability requires legal mechanisms that ensure corporations actively contribute to climate mitigation and adaptation objectives. The analysis demonstrates that although elements of climate

accountability have begun to emerge within Indonesia's legal system, they have not yet been fully institutionalized. Existing environmental regulations continue to focus primarily on environmental compliance, pollution control, environmental impact management, and resource conservation, rather than establishing explicit and enforceable standards related to greenhouse gas emissions and corporate climate performance. Although Indonesia has adopted various environmental laws aligned with international climate commitments, their implementation is frequently constrained by weak enforcement, limited institutional capacity, and regulatory fragmentation, reducing their effectiveness in promoting comprehensive corporate climate accountability (Kesek, 2025). Furthermore, existing regulations tend to address emissions within specific sectors, such as energy and waste management, without providing an integrated framework capable of ensuring consistent corporate accountability across the broader economy (Khoerunnisa & Rahman, 2023).

Indonesia's commitment through the Enhanced Nationally Determined Contribution (Enhanced NDC) and its target of achieving net-zero emissions by 2060 or earlier have created increasing expectations for corporate participation in climate action. Under these policy commitments, corporations are encouraged to reduce emissions, improve energy efficiency, invest in renewable energy technologies, and adopt sustainable business practices. However, most of these expectations remain policy-oriented and voluntary rather than legally binding. As a result, corporate climate commitments are frequently influenced by sustainability strategies, investor expectations, market pressures, and reputational considerations rather than by mandatory legal obligations requiring measurable emissions reductions (Kesek, 2025). The absence of explicit legal requirements concerning greenhouse gas emissions has resulted in a heavy reliance on voluntary corporate actions, which may be insufficient to achieve Indonesia's long-term climate objectives and net-zero commitments (Amalia, Napitupulu, & Ermanda, 2024).

This condition creates a significant gap between Indonesia's national climate ambitions and the legal responsibilities imposed on corporations. While the government has established ambitious climate goals and introduced various climate-related policies, the lack of clear and enforceable corporate climate obligations may weaken implementation effectiveness and hinder progress toward net-zero emissions. The regulatory landscape is further complicated by overlapping regulations, inconsistencies among legal instruments, and limited harmonization between environmental, climate, and corporate governance frameworks, highlighting the need for substantial regulatory reform (Kurniawan, Tratama, & Mulyani, 2025; Mista, Wahyuni, & Rahayu, 2025). Consequently, climate accountability in Indonesia remains largely dependent on voluntary initiatives and incentive-based approaches, underscoring the importance of strengthening legal enforcement, improving institutional coordination, enhancing public participation, and developing a comprehensive climate accountability framework that incorporates measurable corporate obligations, monitoring mechanisms, and enforceable standards (Kesek, 2025).

Corporate Environmental Responsibility in the Net-Zero Era

The transition toward net-zero emissions has significantly expanded the scope of corporate environmental responsibility. Traditionally, corporate obligations focused on pollution control, waste management, environmental permits, and compliance with environmental regulations aimed at minimizing immediate environmental impacts. In contrast, the net-zero paradigm requires corporations to adopt a more proactive and long-term approach by reducing greenhouse gas emissions, supporting climate mitigation efforts, and aligning business operations with national and international climate objectives. Consequently, corporate environmental responsibility now extends beyond conventional compliance to encompass climate governance, decarbonization strategies, climate risk management, and contributions to sustainable development. Although Indonesia's environmental laws, particularly Law No. 32/2009, provide an important foundation for environmental protection, their implementation is often constrained by institutional fragmentation and low levels of corporate compliance (Kesek, 2025).

The analysis indicates that Indonesian regulations have not yet fully adapted to the demands of this evolving climate governance framework. Existing legal obligations continue to emphasize environmental protection and regulatory compliance without explicitly requiring corporations to establish carbon reduction pathways, net-zero transition plans, or measurable emissions reduction targets. In the contemporary climate governance landscape, corporations are increasingly expected to measure and disclose greenhouse gas emissions, establish science-based targets, assess climate-related risks and opportunities, develop climate transition strategies, and integrate sustainability into corporate governance structures. However, most of these expectations remain voluntary rather than legally enforceable. Indonesia's current approach relies heavily on incentives and voluntary compliance, unlike jurisdictions with more binding climate obligations, and faces additional challenges such as overlapping institutional authority, limited low-carbon technology adoption, weak public participation, and suboptimal implementation of carbon pricing and carbon trading policies (Lisdiyono, Dhaneswara, & Budiharseno, 2025; Romulus, 2025).

This situation highlights a fundamental difference between traditional environmental responsibility and net-zero climate responsibility. Whereas traditional approaches focus on pollution control, environmental permits, waste management, and resource conservation, net-zero governance emphasizes carbon emissions reduction, climate transition planning, decarbonization strategies, climate risk governance, and climate disclosure supported by carbon accounting systems. The findings suggest that achieving Indonesia's net-zero emissions target will require a substantial transformation of the legal framework, shifting from a compliance-oriented model of environmental governance toward an accountability-oriented model of climate governance. Such a transition requires clearer and legally binding emissions reduction obligations, stronger enforcement mechanisms, enhanced institutional capacity, and broader public participation to ensure that corporate climate commitments contribute meaningfully to national climate objectives (Kesek, 2025; Lisdiyono et al., 2025; Romulus, 2025).

Regulatory Gaps in Corporate Climate Accountability

One of the most significant findings of this study is the existence of several regulatory gaps that limit the effectiveness of climate accountability mechanisms in Indonesia. Current legislation does not explicitly require corporations to align their operations with national net-zero targets, as environmental laws remain primarily focused on environmental management rather than carbon accountability. Climate disclosure requirements also remain relatively underdeveloped, despite the existence of sustainability reporting regulations, resulting in inconsistent reporting practices and limited comparability across corporations. Furthermore, corporate emissions reduction targets are largely voluntary, reflecting the absence of comprehensive climate-specific obligations within the current legal framework.

Additional weaknesses can be identified in enforcement and liability mechanisms. Existing enforcement systems are primarily designed to address conventional environmental violations and provide limited tools for monitoring corporate climate performance or enforcing climate-related commitments. Likewise, although general environmental liability provisions exist, Indonesia lacks a comprehensive legal framework governing corporate liability for climate-related harm. These gaps—covering climate obligations, emissions reporting, enforcement, corporate liability, and net-zero governance—indicate that Indonesia's climate governance framework remains in a transitional stage. Consequently, significant legal strengthening is required to establish mandatory corporate climate targets, comprehensive climate disclosure standards, effective enforcement mechanisms, and stronger integration of net-zero objectives into the national legal system.

International Trends and Comparative Insights

The comparative analysis reveals a growing international trend toward stronger corporate climate accountability. Various jurisdictions have introduced mandatory climate disclosure regulations, climate risk

reporting requirements, and corporate sustainability obligations to ensure that corporations actively contribute to climate mitigation efforts. The European Union's Corporate Sustainability Reporting Directive (CSRD) exemplifies this shift by requiring companies to disclose environmental impacts and sustainability performance, thereby strengthening corporate transparency and accountability (Ketterling & Germany, 2025). Similarly, the increasing adoption of ESG governance frameworks and climate disclosure regulations in developed economies demonstrates a transition from voluntary sustainability initiatives toward legally enforceable climate obligations designed to align corporate behavior with national and global climate objectives (Vaghela, 2024).

Another important development is the establishment of standardized climate disclosure frameworks that enhance the consistency, comparability, and reliability of climate-related information. Reporting standards such as the Global Reporting Initiative (GRI) have become increasingly important in ensuring that corporations provide accurate and transparent disclosures regarding their environmental performance and climate impacts (Vaghela, 2024). These frameworks also help reduce the risk of greenwashing by requiring companies to disclose information in a structured and comparable manner (Ketterling & Germany, 2025). In addition, climate governance is increasingly being integrated into corporate decision-making processes, enabling organizations to better manage climate-related risks, respond to regulatory changes, and meet growing stakeholder expectations regarding sustainability performance (Ketterling & Germany, 2025; Vaghela, 2024).

These international developments provide several important lessons for Indonesia. Effective climate accountability requires legally enforceable obligations rather than relying solely on voluntary corporate commitments. Standardized climate disclosure frameworks can improve transparency, comparability, and investor confidence, while the integration of climate governance into corporate governance structures can strengthen strategic climate risk management. Furthermore, stronger enforcement mechanisms and climate liability frameworks, including sanctions for non-compliance, can enhance compliance and encourage proactive corporate behavior (Ketterling & Germany, 2025; Vaghela, 2024). Although Indonesia must adapt these approaches to its own legal and economic context, international experience clearly demonstrates the importance of developing a more comprehensive and enforceable climate accountability framework to support the country's transition toward net-zero emissions and long-term sustainable development.

Reassessing the Legal Framework for Corporate Environmental Responsibility

The findings indicate that although Indonesia possesses a substantial legal foundation for environmental governance, it still lacks a fully integrated framework for climate accountability capable of supporting net-zero emissions objectives. Future legal reforms should expand corporate environmental responsibility beyond traditional compliance by introducing legally binding climate obligations for high-emission industries, comprehensive climate disclosure requirements, stronger carbon accounting standards, enhanced monitoring and enforcement mechanisms, climate-related liability provisions, and the integration of climate governance into corporate governance regulations. Based on these findings, this study proposes an integrated corporate climate accountability model consisting of four interconnected pillars: climate governance (corporate climate policies, board oversight, and sustainability committees), climate transparency (emissions disclosure, climate risk reporting, and ESG standards), climate compliance (carbon reduction targets, monitoring mechanisms, and regulatory supervision), and climate liability (administrative sanctions, civil liability, and climate-related legal remedies). This model emphasizes that effective climate accountability requires not only environmental compliance but also transparency, governance integration, measurable obligations, and enforceable accountability mechanisms to support Indonesia's climate commitments and sustainable development goals.

E. CONCLUSION

This study reassessed Indonesia's legal framework governing corporate environmental responsibility in the context of climate accountability and the transition toward net-zero emissions. The findings indicate that although Indonesia has established a relatively comprehensive environmental governance framework through constitutional guarantees, environmental legislation, corporate responsibility provisions, sustainability reporting regulations, and international climate commitments, the existing framework remains primarily oriented toward conventional environmental protection rather than comprehensive climate governance. Significant gaps persist in relation to mandatory corporate emissions reduction obligations, climate disclosure requirements, climate risk governance, enforcement mechanisms, and climate-related liability, while regulatory fragmentation across environmental, corporate, and climate-related laws further limits effective implementation and legal certainty. Consequently, achieving Indonesia's net-zero ambitions requires a shift from compliance-based environmental regulation toward an accountability-based climate governance framework supported by mandatory climate disclosure standards, integrated net-zero obligations within corporate governance, strengthened carbon reporting systems, enhanced enforcement mechanisms, and climate-specific liability provisions. By adopting a more integrated and climate-responsive legal approach, Indonesia can strengthen corporate environmental responsibility, improve transparency and accountability, support sustainable economic development, fulfill its international climate commitments, and accelerate its transition toward a resilient low-carbon future.

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