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Legal Mechanisms for Carbon Trading in Indonesia: Accountability or Greenwashing?

Handipan H. Ali
Faculty of Law, Universitas Negeri Gorontalo. Indonesia. Correspondence E-mail: mohdhypanaliipan@gmail.com
Asrul Aswar
Master of Law, Universitas Hasanuddin, Makassar. Indonesia. E-mail: asrulaswar2910@gmail.com

Abstract:

Indonesia has rapidly developed a legal framework for carbon trading, including Presidential Regulation No. 98 of 2021, its successor No. 110 of 2025, and the launch of the Indonesia Carbon Exchange. However, serious concerns persist regarding whether this framework ensures genuine environmental accountability or merely facilitates corporate greenwashing. This article employs a doctrinal legal research methodology, supplemented by comparative analysis with the California Cap and Trade program and case studies of Indonesian offset projects. The analysis reveals two fundamental weaknesses. First, accountability mechanisms, including monitoring, reporting, and verification, lack independence. Reversal liability rules for forest based credits are absent, and no dedicated dispute resolution body exists. Second, the framework contains no mitigation hierarchy, no anti greenwashing provisions, and no mandatory disclosure of credit types or retirement dates. These structural flaws enable companies to claim carbon neutrality without meaningful internal decarbonisation. The article concludes that Indonesia's carbon trading mechanism currently prioritises market formation over environmental integrity. Urgent reforms are recommended, including an independent verification body, a binding mitigation hierarchy, and explicit anti greenwashing rules. Without such reforms, carbon trading risks becoming a tool for reputational laundering rather than genuine climate action.

Keywords: Carbon Trading; Greenwashing; Accountability

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Introduction

The global fight against climate change has increasingly embraced market-based instruments as a cornerstone of mitigation strategies. Among these, carbon trading or emissions trading schemes (ETS) has emerged as a prominent mechanism to internalise the social cost of greenhouse gas emissions. Indonesia, as one of the world's largest emitters and home to vast tracts of tropical rainforests, has committed to ambitious Nationally Determined Contributions (NDCs) under the Paris Agreement. In pursuit of these targets, the Indonesian government has rapidly developed a legal and regulatory framework for carbon trading, positioning itself as a regional leader in carbon markets (Aptasari et al. 2024). However, the expedited rollout of these mechanisms has raised critical legal questions: do the existing rules genuinely ensure environmental integrity and accountability, or do they merely provide a veneer of corporate sustainability a practice increasingly termed "greenwashing"?

The legal architecture for carbon trading in Indonesia is multi-layered and evolving. The primary enabling legislation includes Law No. 16 of 2016 on the Ratification of the Paris Agreement, and more specifically, Presidential Regulation No. 98 of 2021 on the Carbon Economic Value for achieving NDC targets and controlling greenhouse gas emissions. This regulation established the legal basis for carbon trading, including cap-and-trade schemes for the power generation sector and offset mechanisms for forestry and land-use sectors (Banjarnahor 2025). Subsequent implementing regulations have been issued by the Ministry of Environment and Forestry (MOEF) and the Financial Services Authority (OJK), such as MOEF Regulation No. 21 of 2022 on the implementation of carbon trading in the forestry sector and OJK Regulation No. 14 of 2023 on carbon exchange governance. These instruments collectively create a framework for the registration, verification, and trading of carbon credits, with the Indonesia Carbon Exchange (IDXCarbon) officially launched in September 2023.

Despite this seemingly comprehensive regulatory structure, serious concerns about accountability persist. Accountability in carbon trading refers to the ability to trace, verify, and enforce the environmental integrity of each credit traded. A carbon

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credit must represent one tonne of CO_2 equivalent that is genuinely reduced or removed, additional to what would have occurred without the project, and not double-counted. Indonesia's legal framework adopts international standards such as the International Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and the World Bank's Partnership for Market Readiness. Yet, empirical evidence from pilot projects and early transactions indicates persistent gaps. For instance, baseline setting for forest carbon projects often relies on historical deforestation rates that are difficult to verify, leading to "hot air" credits that do not represent real emission reductions. Moreover, the legal provisions for monitoring, reporting, and verification (MRV) while present on paper lack independent oversight. The same ministry that issues project approvals also oversees verification, creating a potential conflict of interest. The absence of a fully independent accreditation body for third-party verifiers further undermines the credibility of the system (Harseno et al. 2025).

The most contentious issue, however, is greenwashing. In the legal context, greenwashing refers to corporate conduct that misrepresents the environmental benefits of products, services, or business activities, often through deceptive claims about carbon neutrality or offsetting. Indonesia's carbon trading mechanism inadvertently facilitates greenwashing in several ways. First, the current regulations do not impose a binding obligation on companies to prioritise internal emission reductions before purchasing offsets. A corporation may continue to operate highly polluting facilities while purchasing inexpensive, low-quality carbon credits from questionable forest conservation projects, thereby claiming "net zero" without substantive decarbonisation. This practice is not merely an ethical lapse; it raises legal questions under consumer protection laws and, potentially, securities regulations if such claims influence investor decisions. The Financial Services Authority (OJK) has yet to issue specific anti-greenwashing rules for carbon market participants, leaving a regulatory lacuna.

Second, the permanence of carbon offsets is legally precarious. Forest carbon credits, which dominate Indonesia's supply, are vulnerable to reversal through fires, illegal logging, or land-use changes. The legal framework requires buffer pools or insurance mechanisms to cover reversals, but enforcement remains weak. If a forest

credit is reversed years after its sale, who bears the liability? The current regulations allocate liability primarily to project developers, but many developers are undercapitalised or dissolve after credit issuance (Nisa and Sisdianto 2025). Consequently, the legal guarantee of permanence is illusory, and corporations holding such credits may unknowingly engage in greenwashing by relying on non-permanent offsets.

Third, the social dimension of accountability the rights of local and indigenous communities is inadequately addressed. Many carbon offset projects in Indonesia are located on lands claimed by customary law communities (masyarakat hukum adat). The principle of Free, Prior, and Informed Consent (FPIC) is mentioned in some regulations but lacks binding legal force. Numerous documented cases reveal that communities were neither consulted nor benefited from carbon projects, while their traditional land uses were restricted. From a legal perspective, this raises potential violations of constitutional rights to livelihood and cultural identity, as well as breaches of the Environmental Protection and Management Law (No. 32 of 2009), which mandates public participation (Raharjo and Kossay 2025). When corporations purchase credits from such projects, they may be complicit in social harms, yet the carbon trading legal framework provides no mechanism for tracing or remedying these human rights impacts. This blind spot transforms carbon trading from a climate solution into a vehicle for environmental injustice, further blurring the line between accountability and greenwashing.

The scholarly literature on Indonesian carbon trading has thus far focused predominantly on technical readiness and economic potential, with insufficient attention to legal accountability and greenwashing risks. Existing studies by Indonesian legal scholars have examined the constitutional basis for carbon pricing or compared Indonesia's framework with international models, but few have critically analysed the enforcement gaps, liability rules, and anti-greenwashing provisions. Moreover, there is a dearth of empirical legal research examining actual transactions on the Indonesia Carbon Exchange and whether the disclosed offset projects meet integrity standards. This gap is significant because without rigorous accountability, carbon trading risks becoming a tool for regulatory capture, where polluters purchase social licence rather than genuine emission reductions.

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Therefore, this article seeks to fill that gap by asking: Does Indonesia's legal framework for carbon trading ensure environmental and social accountability, or does it inadvertently enable corporate greenwashing? Drawing on doctrinal legal analysis, comparative insights from established carbon markets (EU ETS, California Cap-and-Trade), and case studies of Indonesian offset projects, this paper will evaluate the existing rules on MRV, liability for reversal, community consent, and greenwashing prohibitions (M. F. A. Ramadhan and DP 2026). It will argue that while the framework is structurally sound in its broad strokes, critical weaknesses in verification independence, permanence guarantees, and social safeguards render it vulnerable to abuse. The article concludes with concrete legal reforms including mandatory internal decarbonisation targets, independent MRV bodies, binding FPIC requirements, and explicit anti-greenwashing provisions in capital market regulations to transform carbon trading from a potential greenwashing mechanism into a genuine tool for climate accountability in Indonesia.

Method

This study employs a doctrinal legal research methodology, also known as normative legal research (Atikah 2022). The primary sources consist of Indonesian legislation governing carbon trading, including Presidential Regulation No. 98/2021, MOEF Regulation No. 21/2022, and OJK Regulation No. 14/2023, as well as relevant international standards (CORSIA, Paris Agreement). Secondary sources include scholarly articles, official reports, and case law. A comparative approach is applied, benchmarking Indonesia's framework against the EU ETS and California Cap-and-Trade. To assess greenwashing risks, case studies of verified carbon credit projects on the Indonesia Carbon Exchange are analysed qualitatively. Data is collected through document review and legal interpretation, with findings presented using deductive logical reasoning.

Discussion

Accountability Gaps in Indonesia's Carbon Trading Legal Framework

The Indonesian government, through various regulations including Presidential Regulation No. 98 of 2021 and its successor, Presidential Regulation No.

110 of 2025, has attempted to create a reliable system. However, a doctrinal analysis of these regulations reveals that the three core elements of carbon market accountability, namely transparency, enforceability, and redress, each contain structural gaps that threaten the environmental integrity of the carbon trading mechanism itself.(R. Ramadhan and Situmorang 2026)

The most fundamental weakness lies in the Monitoring, Reporting, and Verification (MRV) system. Although Indonesia has taken steps to enhance its MRV protocols, including signing a Mutual Recognition Agreement with the Gold Standard in May 2025, the issue of verification independence remains unresolved. The Ministry of Environment and Forestry (MOEF) both administers the MRV process and oversees the accreditation of third party verifiers. This creates a conflict of interest that would be unacceptable in a mature carbon market such as the European Union Emissions Trading System. International best practices mandate a clear separation between the regulatory authority and the verification accreditation body, yet Indonesia's legal framework consolidates both functions within a single ministry. This structural weakness is compounded by a lack of transparency. Current regulations do not mandate public disclosure of full verification reports; only summary data is released. Consequently, civil society, researchers, and even credit buyers cannot independently assess whether a carbon credit represents a genuine, additional, and permanent emission reduction.

The permanence of forest based carbon credits presents an even more acute accountability challenge. Indonesia's carbon market is heavily dependent on forestry and land use projects, which are inherently vulnerable to reversals from fires, illegal logging, or land conversion (Raodah et al. 2026). The legal framework requires project developers to maintain a buffer pool or purchase insurance against such risks, but enforcement is minimal, and the regulations remain silent on critical liability questions. No provision explicitly defines the legal consequences if a credit is reversed years after its sale, whether through forest fires, government license revocation, or project failure. The lack of clear liability rules leaves buyers exposed to substantial financial and reputational risks.

Table 1 below shows the scale of forest and land fire areas in Indonesia over the past three years. Although there is a downward trend from 2023 to 2025, the area burned in 2025 still reached 213,984 hectares. This figure is significant and demonstrates that reversal risk is far from hypothetical.

Table 1. Forest and Land Fire Area in Indonesia (2023 to 2025)

Year	Burned Area (Hectares)
2023	1,161,192
2024	376,805
2025	213,984

Source: Ministry of Forestry, as reported by CNN Indonesia and Tribratanews Polri (2025)

In addition to fires, a report released in March 2026 found that Indonesian forest loss surged by 66 percent in 2025, with 433,751 hectares of forest cleared, driven largely by the government's self sufficiency policies. This dramatic increase in deforestation directly undermines the integrity of forest based carbon credits, which assume stable or increasing carbon stocks (Sihotang 2025).

The Rimba Raya Conservation project on the island of Borneo provides a concrete case study of how these risks materialise. As one of the largest REDD plus offset projects in the world, Rimba Raya has been embroiled in a protracted legal dispute with the Indonesian government over license revocation. The project's uncertainty prompted concerns that its failure would consume approximately 46 percent of the buffer pool maintained by Verra, one of the largest carbon credit registries. This case starkly illustrates the inadequacy of existing buffer pool mechanisms. The failure of a single project can deplete nearly half of a registry's collective reserve, leaving other projects and credit buyers exposed. The Indonesian government's ability to revoke project licenses, as demonstrated in the Rimba Raya case where the company won backing from the Jakarta State Administrative Court to overturn the revocation while the government retained several months to lodge an

appeal, introduces an additional layer of political risk that current liability rules do not address (Simatupang et al. 2025).

The limitations of buffer pools have been well documented in carbon market literature. A 2024 analysis concluded that buffer pools are likely inadequate to cover major losses, leaving buyers of carbon credits exposed to reversal risk for many projects. The analysis noted that registry buffer pools typically take a percentage of issued credits from each project and aggregate them into a central pool. However, this mechanism is ill equipped to handle correlated risks, such as region wide fires or policy changes that affect multiple projects simultaneously.

Moreover, the legal framework lacks an independent dispute resolution mechanism specifically for carbon trading. The Indonesia Carbon Exchange (IDXCarbon) relies on standard commercial arbitration clauses, typically under the auspices of BANI, the National Arbitration Board of Indonesia. Arbitration can provide confidential and enforceable resolution for commercial disputes, but it is ill suited to address the unique challenges of carbon markets (Baskara and Simon 2025). Disputes over credit quality verification, allegations of fraudulent issuance, claims of environmental harm from local communities, or questions of regulatory compliance cannot be adequately handled through ordinary commercial arbitration. There is no dedicated carbon market tribunal or ombudsperson with specialised expertise in carbon accounting and climate law. Consequently, stakeholders, particularly local communities harmed by offset projects who often lack the resources to pursue commercial arbitration, have no effective legal avenue to challenge credit validity or seek remedies.

Table 2 below provides a comparative analysis of the accountability framework between Indonesia and the California Cap and Trade program, highlighting the existing gaps.

Table 2. Comparative Accountability Framework: Indonesia versus California Cap and Trade

Accountability Element	Indonesia (PR 98/2021, PR 110/2025, IDXCarbon)	California Cap and Trade
Verification Independence	MOEF administers MRV and accredits verifiers; no separation	Independent verification under CARB with accredited third party verifiers
Verification Report Transparency	No public disclosure of full verification reports; only summary data	Full verification reports publicly available
Reversal Liability	No explicit regulation; liability rules unclear; buffer pool enforcement minimal	Mandatory buffer pool managed by a non profit entity; clear liability shifting provisions
Dispute Resolution	Standard commercial arbitration; no dedicated carbon tribunal	Specialised administrative review process within CARB
Market Liquidity	Low; total transaction value IDR 77.85 billion; volume 1.6 million tCO2e (2025)	High; annual auction proceeds over USD 8.5 billion; hundreds of millions of allowances traded

Sources: Author's compilation based on regulatory analysis, IEEFA (2025), and California ARB data

The performance of IDXCarbon itself further confirms these accountability gaps. Launched in September 2023, the exchange has struggled to generate meaningful market activity. The total traded volume of approximately 1.6 million tCO2e represents a minuscule fraction of Indonesia's national emissions, which exceed 1 billion tCO2e annually. The dramatic drop in transaction value between the launch period and mid 2025, falling to just IDR 1 billion over a six month period, indicates that initial market enthusiasm has not translated into sustained participation. Low liquidity, as noted by the Institute for Energy Economics and

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Financial Analysis (IEEFA), is a symptom of deeper accountability concerns. Buyers are reluctant to enter a market where credit quality cannot be reliably verified and liability for reversals remains unclear (Utiyafina M. Hazhin and Hartanto 2026).

In summary, while Indonesia has constructed a regulatory skeleton for carbon trading, the accountability infrastructure remains critically underdeveloped. Without independent verification, transparent reporting, clear reversal liability rules, and accessible dispute resolution mechanisms, the carbon trading mechanism cannot genuinely guarantee environmental integrity. These gaps not only weaken domestic credibility but also jeopardise Indonesia's participation in international carbon markets, including under Article 6 of the Paris Agreement, which demands robust accounting to avoid double counting.

Greenwashing Risks and the Absence of Anti-Greenwashing Provisions

Let us now turn to a question that strikes at the very heart of public trust in carbon markets. When a company buys a carbon credit and tells the world it is now carbon neutral, what does that claim actually mean? Is the company genuinely reducing its impact on the climate, or is it simply purchasing a piece of paper that allows business as usual to continue under a green banner? This second discussion focuses on whether Indonesia's carbon trading mechanism inadvertently facilitates corporate greenwashing. Greenwashing, legally defined as misleading claims about environmental performance, is particularly dangerous in carbon markets because it allows companies to project climate leadership while continuing high emission operations. The Indonesian legal framework, as it currently stands, contains no explicit prohibition against greenwashing in the context of carbon credits. Nor does it impose any binding obligation on credit buyers to prioritise internal decarbonisation before turning to offsets (Utiyafina Mardhati Hazhin and Hartanto 2026).

The most significant regulatory lacuna is the lack of a mitigation hierarchy. Under current rules, any company regardless of its own emission levels may purchase carbon credits and immediately claim carbon neutrality or net zero status. There is no legal requirement to first reduce internal emissions using best available technology. This creates a perverse incentive that is difficult to ignore. Companies

can avoid costly operational changes by buying cheap, low quality credits. Consider a concrete example. A coal fired power plant in West Java could purchase forest conservation credits from a distant province in Kalimantan and advertise itself as green, even though its smokestack emissions remain completely unchanged. Such claims are not technically false if the credits have been verified under existing regulations (Putri and Zakiyah 2023). However, they are materially misleading to consumers and investors who expect genuine emission reductions. The power plant has done nothing to change its own operations, yet it enjoys the reputational benefits of a climate friendly label.

Comparative jurisdictions have addressed this issue with far greater rigour. The European Union's proposed Green Claims Directive of 2023 explicitly prohibits net zero claims based solely on offsets. It requires companies to disclose the percentage of emission reductions achieved internally versus the percentage achieved through offsetting. Similarly, the United Kingdom's Green Claims Code requires that offsetting be used only as a supplementary measure, not as a primary strategy. Indonesia's OJK Regulation Number 14 of 2023 on carbon exchange governance is completely silent on corporate claims. The Consumer Protection Law, Law Number 8 of 1999, could theoretically apply to greenwashing cases. However, no enforcement action has ever been taken against greenwashing specifically in carbon markets. This regulatory silence sends a clear signal to market participants. There is no penalty for exaggerating environmental claims, and there is no benefit to being transparent about the limits of offsetting (Quddus 2025).

Another greenwashing enabler is the absence of quality standards for different types of carbon credits. Indonesia's framework allows both removal credits and avoidance credits. Removal credits come from projects that actively remove carbon from the atmosphere, such as reforestation or direct air capture. Avoidance credits come from projects that prevent emissions that would otherwise occur, such as preventing deforestation. Avoidance credits are particularly vulnerable to criticism because they do not actively reduce the amount of carbon already in the atmosphere. They simply avoid adding more. Nevertheless, under current Indonesian regulations, avoidance credits are marketed as equivalent to removal credits. There is no legal distinction between the two, and no mandatory disclosure requirement that forces

companies to specify which type of credit they have purchased. This allows companies to cherry pick cheaper avoidance credits, which are often less environmentally robust, and present them as equivalent to removals. Stakeholders, including investors and consumers, are thus misled about the true climate impact of the company's offsetting strategy.

Furthermore, the current regulations do not require companies to retire credits in a timely manner or to disclose credit retirement dates. Retirement is the act of permanently cancelling a carbon credit so that it cannot be resold or reused. Some corporations purchase credits but hold them as speculative assets rather than retiring them against their current emissions (Raodah and Taufik 2025). They keep the credits in their portfolios, watching their value fluctuate, while simultaneously claiming carbon neutrality. This practice, known as credit banking without retirement, is a form of accounting fraud. The company claims to have offset its emissions, but the credits are still available for future use or sale. No Indonesian law currently addresses this practice. The carbon exchange has no rule requiring retirement within a specific time frame, and there is no public registry that allows stakeholders to verify whether a company's claimed offsets have actually been retired.

To mitigate these greenwashing risks, this article argues for several legal reforms. First, the Financial Services Authority, or OJK, should issue a specific anti greenwashing rule for carbon market participants. This rule should mandate clear disclosure of several key elements. Companies must state the proportion of their claimed carbon neutrality that comes from internal emission reductions versus external offsets (Satriawan et al. 2025). They must disclose the type of credits used, distinguishing removal credits from avoidance credits. They must also disclose the vintage year of the credits and, most importantly, the date on which the credits were retired. Second, the government should adopt a legally binding mitigation hierarchy. Large emitters should be required to achieve certain internal reduction targets before they are permitted to access offsets. This would prevent the perverse practice of buying cheap credits instead of making genuine operational changes. Third, consumer protection authorities and capital market authorities should be explicitly empowered to investigate and sanction misleading carbon claims. Penalties should

be proportionate to the scale of the deception, with higher fines for larger companies and for repeated violations. (Sebastian et al. 2025)

In the end, Indonesia's carbon trading mechanism as currently designed contains structural features that enable greenwashing rather than preventing it. The absence of a mitigation hierarchy allows companies to prioritise offsets over genuine reductions. The lack of quality standards allows avoidance credits to be marketed as equivalent to removal credits. The failure to mandate timely credit retirement allows corporations to claim neutrality without actually cancelling their credits. Without explicit legal safeguards and binding disclosure duties, the market risks becoming a tool for reputational laundering rather than genuine climate action. Addressing these gaps is not merely a matter of regulatory refinement. It is essential for maintaining the integrity of Indonesia's climate commitments under the Paris Agreement. It is also essential for protecting stakeholders, including investors, consumers, and local communities, from deceptive environmental claims that sound good but deliver little.

Conclusion

This article has examined two fundamental weaknesses in Indonesia's carbon trading legal framework. The first discussion revealed critical accountability gaps, including the lack of independent verification, the absence of clear reversal liability rules, and the failure to provide accessible dispute resolution mechanisms. The second discussion demonstrated that the framework actively enables greenwashing through the absence of a mitigation hierarchy, the lack of quality standards for different credit types, and the failure to mandate timely credit retirement and transparent disclosure.

Taken together, these findings lead to an inescapable conclusion. Indonesia's carbon trading mechanism, as currently designed, prioritises market formation over environmental integrity. The regulatory skeleton exists, but the accountability infrastructure that would give it genuine meaning is missing. Without independent verification, companies cannot trust the credits they buy. Without clear reversal liability, buyers bear unacceptable risks. Without anti greenwashing rules, corporations can claim carbon neutrality while changing nothing about their operations. These are not minor gaps. They are structural flaws that threaten to turn carbon trading into a tool for reputational laundering rather than genuine climate action.

To address these flaws, this article recommends several urgent reforms. First, establish an independent verification body separate from the Ministry of Environment and Forestry. Second, adopt a legally binding mitigation hierarchy that requires internal emission reductions before offsets. Third, mandate full disclosure of credit types, retirement dates, and the proportion of internal reductions versus offsetting. Fourth, empower consumer protection and capital market authorities to investigate and sanction misleading green claims. Indonesia has the potential to lead carbon markets in Southeast Asia. However, that potential will remain unrealised unless the government closes these accountability and greenwashing gaps. The integrity of Indonesia's climate commitments under the Paris Agreement depends on it.

Recommendation

To address the identified accountability and greenwashing gaps, this article offers four recommendations. First, establish an independent verification body separate from the Ministry of Environment and Forestry to ensure transparent and unbiased monitoring, reporting, and verification of carbon credits. Second, adopt a legally binding mitigation hierarchy requiring large emitters to achieve internal emission reductions before purchasing offsets. Third, mandate full disclosure of credit types, retirement dates, and the proportion of internal reductions versus offsets. Fourth, empower the Financial Services Authority and consumer protection agencies to investigate and sanction misleading green claims with proportionate penalties. These reforms are essential to transform Indonesia's carbon market from a greenwashing vehicle into a credible climate tool.

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