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Institutionalizing Sustainable Finance and Carbon Markets: Evidence from an Emerging Economy Stock Exchange

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ABSTRACT

This study examines the role of the Indonesia Stock Exchange (IDX) as an institutional driver of sustainable finance and carbon market development in an emerging economy context. Drawing on longitudinal sustainability report data spanning 2018 to 2024, the study applies institutional theory and qualitative longitudinal content analysis to trace IDX's transformation from a reactive, compliance-oriented organization under POJK No. 51/2017 into a proactive ecosystem builder advancing Environmental, Social, and Governance (ESG) infrastructure across Indonesian capital markets. The findings reveal a progressive institutionalization trajectory unfolding across three distinct phases: regulatory compliance (2018–2019), ecosystem construction (2020–2022), and innovation leadership (2023–2024). Over this period, IDX launched multiple ESG indices including the ESG Leaders Index (ESGL), integrated the Sustainalytics ESG Risk Rating, joined the United Nations Sustainable Stock Exchanges (UN SSE) initiative, established the Bursa Karbon Indonesia as Southeast Asia's first regulated carbon exchange, and introduced the IDX Net Zero Incubator. Quantitative performance data document growing ESG product adoption, with net asset value reaching IDR 7.18 trillion in 2024, alongside early carbon market growth reflected in 100 registered participants and 420,987 tonnes of CO_2eq retired. Nevertheless, structural barriers persist, including limited market participant awareness, carbon price discovery challenges, and insufficient ESG data comparability across market actors. Theoretically, this article contributes to the nascent literature on Self-Regulatory Organizations (SROs) as active agents of sustainable finance institutionalization, while extending the application of institutional theory to capital market contexts in developing economies.

Keywords: Sustainable Finance; carbon market; institutional theory; Indonesia Stock Exchange; Self-Regulatory Organization

INTRODUCTION

The global transition toward a low-carbon economy has placed financial markets at the center of sustainability debates, compelling capital market institutions to rethink their foundational roles. Stock exchanges, traditionally conceived as neutral trading platforms, are increasingly recognized as pivotal actors capable of shaping the sustainability trajectory of entire financial ecosystems (Millischer et al., 2023; Shayo, 2024). This reorientation is particularly consequential in emerging economies, where institutional capacity, regulatory frameworks, and market maturity intersect in complex ways to either accelerate or hinder sustainable finance adoption (Azam et al., 2026; Wang, 2025).

Indonesia presents a compelling case study for examining this institutional shift. As the world's fourth most populous nation and a major emerging economy, Indonesia faces simultaneous pressures to deliver economic growth, address environmental degradation, and fulfill its nationally determined contributions under the Paris Agreement. The Indonesia's Financial Services Authority,

issued POJK No. 51/POJK.03/2017 on the implementation of sustainable finance for financial services institutions, issuers, and public companies. This regulatory mandate marked the beginning of a systematic effort to embed sustainability into the architecture of Indonesian capital markets, with the Indonesia Stock Exchange (IDX) positioned as a central implementing actor and ecosystem builder.

Since publishing its inaugural sustainability report in 2018, IDX has undergone a remarkable institutional evolution. What began as a compliance exercise under POJK No. 51 has progressively matured into a comprehensive sustainability strategy encompassing ESG index development, carbon exchange establishment, TCFD and IFRS alignment, and digital ESG reporting infrastructure. By 2024, IDX had launched the IDX Net Zero Incubator, released comprehensive ESG Reporting Guidance, institutionalized mandatory ESG disclosure through SPE-IDXnet, and formally operated the Bursa Karbon Indonesia. ESG-linked investment products grew from 10 units in 2022 to 17 units in 2024, with net asset value expanding from IDR 3.78 trillion to IDR 7.18 trillion over the same period (IDX Sustainability Report, 2024). These developments represent a significant institutional transformation whose longitudinal arc has not yet been systematically analyzed in academic literature.

The extant scholarly literature on ESG and sustainable finance predominantly focuses on corporate-level responses, examining how listed companies adopt ESG practices, disclose sustainability information, and respond to investor pressures (Leung & You, 2023; Rani et al., 2025). Studies examining stock exchanges themselves as sustainability-promoting institutions remain comparatively sparse, with notable exceptions including work by Adamska & Dąbrowski (2021) and Ul Abideen & Fuling (2024) on sustainable stock exchanges, and Escrig-Olmedo et al. (2019) on sustainability reporting frameworks. This gap is especially pronounced in emerging market contexts, where the institutional environment, regulatory capacity, and market participant awareness differ substantially from those in advanced economies.

This study addresses that gap through a qualitative longitudinal case study of IDX spanning 2018 to 2024. The central research questions are: (1) How has IDX's role as a sustainable finance institution evolved across seven years of sustainability reporting? (2) What institutional mechanisms has IDX deployed to build a sustainable capital market ecosystem? (3) What structural barriers continue to constrain the full institutionalization of sustainable finance and carbon markets in Indonesia? By applying institutional theory as an analytical lens, this paper contributes both empirically and theoretically to the emerging literature on sustainable stock exchanges in the Global South.

LITERATURE REVIEW

Institutional Theory and Sustainable Finance

Institutional theory provides a robust analytical framework for understanding how organizations, rules, and practices become embedded within broader social systems (Southall & Southall, 2024). In the context of sustainable finance, institutional theory has been applied to explain how regulatory mandates, normative professional pressures, and mimetic processes among peer organizations collectively drive the adoption of sustainability practices within financial markets (Jain et al., 2022). The three pillars of institutional theory-regulative, normative, and cognitive-map neatly onto the mechanisms through which sustainable finance frameworks are established, diffused, and ultimately taken for granted within market systems.

In emerging economies, the regulative pillar tends to dominate in the early stages of sustainable finance development (Awashreh, 2025). Indonesia's trajectory exemplifies this pattern: POJK No. 51/2017 created the regulatory scaffolding that prompted IDX, as a Self-Regulatory Organization, to design and implement its first Sustainable Finance Action Plan. Over time, normative pressures emerged through international membership in bodies such as the UN SSE initiative (joined in 2019) and partnerships with global organizations including Sustainalytics (now Morningstar Sustainalytics). Mimetic isomorphism became visible as IDX aligned its reporting frameworks with GRI Standards, TCFD, and subsequently IFRS S1 and S2, mirroring practices prevalent among advanced economy stock exchanges.

The concept of the Self-Regulatory Organization (SRO) occupies a theoretically interesting

position within institutional frameworks. Unlike purely private firms or state regulators, SROs possess hybrid authority-they operate under delegated regulatory power while simultaneously acting as market participants and service providers (Lenkovskaya et al., 2019; Ma, 2020; Tarbert, 2021; van Koten, 2021). This hybridity creates both unique legitimacy resources and distinctive constraints that shape how SROs can drive systemic change. Stock exchanges, as SROs, can leverage their rule-making authority, market platform control, and multi-stakeholder convening power to institutionalize sustainability practices in ways that neither purely private nor purely governmental actors can readily accomplish.

The hybrid position of the SRO serves as the foundation for the concept of the institutional entrepreneur, namely an actor who not only responds to institutional environmental pressures but also actively shapes and transforms the institutional field in which they operate (Jain et al., 2022). In the context of sustainable finance, an institutional entrepreneur is an organization that leverages its authority, resources, and networks to create new rules, build market infrastructure, and drive normative changes that go beyond existing regulatory obligations. SROs, like stock exchanges, have the structural prerequisites to perform this role: they have simultaneous access to regulatory domains, markets, and diverse stakeholders, thus enabling them to build coalitions and legitimize institutional innovations in ways that no single other actor can. This concept serves as the main interpretive framework in this study to explain how the IDX moves from compliance to leadership within Indonesia's sustainable finance ecosystem.

Sustainable Stock Exchanges and Emerging Markets

The Sustainable Stock Exchanges (SSE) initiative, launched under the auspices of the United Nations in 2009, formalized the conceptualization of stock exchanges as platforms for promoting sustainable investment and responsible business practices (Adamska & Dąbrowski, 2021). SSE research has documented how exchanges can influence listed company behavior through mandatory and voluntary disclosure requirements, ESG indices, investor engagement programs, and green bond listing frameworks (Shayo, 2024). Rani et al. (2025) demonstrated that the establishment of ESG-linked indices by stock exchanges generates measurable signals that influence investor behavior and corporate sustainability performance.

However, the preponderance of SSE research has focused on developed market exchanges. Among emerging market stock exchanges, the literature has examined select cases including Johannesburg, Shanghai, and São Paulo, but studies focusing on Southeast Asian exchanges, and Indonesia in particular, remain limited (Abdul Karim & Xin Ning, 2013; Hasibuan et al., 2025). Indonesia's combination of large economic scale, high environmental sensitivity, significant biodiversity, and dynamic regulatory reform makes it a distinctive and analytically valuable case.

Carbon market development adds a further layer of complexity to the sustainable finance landscape. The scholarly literature on carbon markets in emerging economies highlights the critical institutional prerequisites for market functionality: clear property rights over emission units, robust monitoring, reporting and verification (MRV) infrastructure, sufficient market participant diversity, and strong regulatory backing (Millischer et al., 2023). Research on voluntary and compliance carbon markets consistently identifies participant awareness, price discovery, and liquidity as foundational challenges in early stage markets.

ESG Disclosure and Reporting Infrastructure

The institutionalization of ESG disclosure is a prerequisite for functioning sustainable capital markets. Leung & You (2023) found that mandatory sustainability reporting frameworks significantly improve the quality and comparability of ESG disclosures, with spillover effects on corporate sustainability performance. Research by Azam et al. (2026) demonstrated that exchange-level ESG reporting requirements generate more consistent and comparable data than voluntary frameworks alone, particularly in contexts where investor sophistication is moderate and regulatory capacity is developing.

In Indonesia, the evolution from voluntary POJK-aligned reporting to mandatory ESG reporting through SPE-IDXnet, combined with the release of IDX's ESG Reporting Guidance in 2024, marks a qualitative shift in the country's ESG disclosure infrastructure. This trajectory

mirrors patterns observed in other emerging markets that have moved from principle based voluntary standards to more prescriptive, exchange enforced disclosure regimes. Understanding how IDX managed this transition-including the incentive structures, technical capacity building, and stakeholder engagement mechanisms employed contributes empirically to comparative research on ESG disclosure institutionalization across market contexts.

METHODS

Research Design

This study adopts a qualitative longitudinal case study methodology (Do & Nguyen, 2025), examining IDX as a single bounded institutional case over a seven-year period. The longitudinal design is particularly suited to capturing the evolutionary, path-dependent nature of institutional change, allowing the analysis to trace how early regulatory mandates shaped subsequent strategic choices, how learning from implementation challenges redirected institutional priorities, and how external pressures were absorbed and translated into organizational practice.

Data Sources

The primary data sources are IDX's official Sustainability Reports published annually from 2018 to 2024. These reports constitute authoritative institutional documents that capture IDX's stated strategies, material topics, performance data, governance structures, stakeholder engagement activities, and forward-looking plans within a standardized reporting framework. All reports reference compliance with POJK No. 51/POJK.03/2017, with later reports additionally referencing GRI Consolidated Standards (2021 edition), TCFD, G4 Financial Services Sector Disclosures, SASB standards for Security and Commodity Exchanges, and from 2024, IFRS S1 and S2 frameworks. The 2023 and 2024 Sustainability Reports the primary documents for this study were analyzed in full, with systematic cross-referencing to earlier reports to construct the longitudinal narrative. Secondary data sources include official OJK announcements, UN SSE communications, Sustainalytics partnership documentation, and peer-reviewed literature on Indonesian capital market development.

Analytical Approach

Data analysis proceeded through iterative qualitative content analysis informed by institutional theory (Lu et al., 2024; Puppis, 2019). The analysis employed a combined deductive-inductive coding strategy: deductive codes were derived from institutional theory concepts (regulative, normative, and cognitive institutionalization; isomorphic pressures; legitimation strategies), while inductive codes emerged from close reading of the sustainability reports. The coding process involved three iterative cycles: first cycle descriptive coding to capture manifest content; second-cycle pattern coding to identify thematic clusters; and third cycle theoretical coding to map findings onto the institutional theory framework.

To maintain the reliability of the analysis process, this study implements an audit trail procedure that systematically documents every coding decision, from the selection of the unit of analysis to the determination of thematic categories in each cycle. Given that this research was conducted by a single principal researcher, a peer debriefing procedure was applied as a substitute for formal intercoder reliability, by discussing the consistency of codes and categorization with fellow researchers at the end of each coding cycle. Any interpretive discrepancies were resolved through discussions based on the original text of the IDX sustainability reports, ensuring that the final categorization reflects a defensible interpretive consensus. These steps are designed to strengthen the credibility and transferability of the findings, in accordance with validity standards in longitudinal qualitative research.

Longitudinal analysis was structured around the identification of temporal phases of institutional development. Following Orr & Balmer (2025) guidance on longitudinal qualitative research, the study traced continuities, changes, and turning points across the seven-year period. Key analytical categories included: material topic evolution; governance structure development; ESG ecosystem building initiatives; carbon market institutionalization; disclosure infrastructure advancement; and acknowledged institutional barriers and constraints. Quantitative sustainability

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performance data extracted from annual report appendices were systematically collected and analyzed using descriptive statistics, including calculations of absolute values, inter-period changes, and intensity ratios, to provide an overview of IDX's sustainability performance trends. This quantitative data serves as triangulation for qualitative findings: the figures in Tables 1 through 5 do not stand alone, but are used to confirm, elaborate, or refine the narrative interpretations derived from the coding process. This procedure aligns with the mixed sequential approach in longitudinal qualitative case studies, where numerical data functions as corroborating evidence for the theoretical constructs developed through content analysis.

To strengthen this analytical framework, this study specifically examines how each form of coercive, mimetic, and normative isomorphic pressure triggers different strategic responses from IDX over different periods. Coercive pressure stemming from POJK No. 51/2017 prompted IDX to establish a Sustainability Committee and develop a Sustainable Finance Action Plan as an initial step of institutional compliance. Over time, mimetic pressure from international stock exchanges encouraged IDX to adopt the GRI framework, TCFD, as well as IFRS S1 and S2 standards; however, this adoption process did not occur mechanically but involved active adjustment to domestic market conditions. The normative pressure stemming from UN SSE membership and partnerships with Sustainalytics reinforces the legitimacy of the IDX before the global community while providing references for best practices that are subsequently translated into the Indonesian context, such as the development of Sharia-based ESG indices and ESG reporting guidelines aligned with the capacities of local issuers. This translation process, which is the transformation of international standards into instruments that are meaningful within the Indonesian capital ecosystem, becomes a key unit of analysis distinguishing this study from merely descriptive isomorphism studies.

RESULTS

Figure 1 presents the overall institutional evolution framework derived from the longitudinal analysis, and Table 1 summarizes the three phase developmental model identified across IDX's sustainability trajectory.

IDX Institutional Evolution Timeline (2018–2024)

Phase I - Regulatory Compliance (2018-2019)	**Phase II - Ecosystem Construction (2020-2022)**	**Phase III - Innovation Leadership (2023-2024)**
• 1st Sust. Report (2018) • UN SSE member (2019) • SRI-KEHATI operational	• TCFD Supporter (2021) • ESG Leaders Index (ESGL) • Sustainalytics ESG Risk Rating integration • GSS Bond listing framework • LQ45 ESG KEHATI Index • ESG Quality 45 Index	• Bursa Karbon launch (Sept 2023) • IDX Net Zero Incubator (2024) • ESG Reporting Guidance (2024) • Mandatory ESG via SPE-IDXNet • IFRS S1/S2 gap analysis • LQ45 Low Carbon Leaders Index • ESG methodology refinement • IDX Sustainability Website

Institutional Theory Lens

COERCIVE ⟶	**NORMATIVE** ⟶	**COGNITIVE**
(Regulatory mandate)	(UN SSE, WFE, IOSCO norms)	(Taken-for-granted ESG practice)

Figure 1. IDX Institutional Evolution Timeline and Isomorphic Pressure Framework (2018–2024)

Source: Synthesized from IDX Sustainability Reports 2018-2024; analytical framework derived from DiMaggio & Powell (1983) and Scott (2008).

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Table 1. Three-Phase Institutional Development Model of IDX Sustainable Finance (2018–2024)

Phase	Period	Key Characteristics	Representative Milestones
I	Regulatory Compliance (2018-2019)	Compliance-driven reporting; internal operational sustainability focus; initial ESG index infrastructure	First Sustainability Report (2018); UN SSE membership (2019); SRI-KEHATI index operational
II	Ecosystem Construction (2020-2022)	Active ESG infrastructure building; Sustainalytics integration; TCFD alignment; multi-index ESG product expansion	TCFD supporter declaration (2021); Sustainalytics ESG risk rating partnership; IDX ESG Leaders Index (ESGL) launch
III	Innovation Leadership (2023-2024)	Carbon exchange establishment; mandatory ESG disclosure; net zero incubation; ISSB/IFRS S1-S2 gap analysis	Indonesia Carbon Exchange launch (2023); IDX Net Zero Incubator (2024); ESG Reporting Guidance release (2024)

Source: Authors' synthesis from IDX Sustainability Reports 2018-2024.

Phase One: Regulatory Compliance and Foundational Positioning (2018-2019)

IDX's first Sustainability Report, published in 2018, marked the institution's initial formal response to POJK No. 51/POJK.03/2017. The report revealed a sustainability agenda that was primarily internally oriented, focusing on IDX's own operational footprint energy consumption, paper use, and employee welfare alongside introductory disclosures on capital market development activities. The material topics identified in this early period reflect the regulative dimension of institutionalization: sustainability was understood primarily through the lens of regulatory compliance rather than strategic market transformation. IDX's Sustainability Committee was established as a formal governance body reporting to the Board of Directors, providing the organizational scaffolding through which later, more ambitious sustainability initiatives would be designed and executed.

A significant early milestone was IDX's membership in the United Nations Sustainable Stock Exchange initiative in 2019, which marked the organization's first formal international sustainability commitment. This membership introduced normative institutional pressures from the global sustainable stock exchange community, exposing IDX to international best practices and creating accountability mechanisms beyond the domestic regulatory framework. Concurrently, IDX maintained and refined its ESG-linked stock indices, including the SRI-KEHATI Index, which provided the capital market with its first systematic ESG performance signals for investors.

Phase Two: Ecosystem Construction and Infrastructure Development (2020-2022)

The second phase of IDX's institutional evolution was characterized by a deliberate shift from compliance orientation toward active ecosystem building. A defining development was IDX's 2021 formal declaration of support for the Task Force on Climate-related Financial Disclosures (TCFD), signaling alignment with international climate governance frameworks beyond Indonesia's domestic regulatory requirements. This move exemplifies mimetic isomorphism IDX adopted a globally recognized standard in use by leading international exchanges while simultaneously responding to normative pressure from the UN SSE community.

The partnership with Sustainalytics, through which IDX integrated independent ESG risk ratings for listed companies, represented a significant infrastructure milestone. By providing market

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participants with standardized, third party ESG assessments, IDX addressed a critical information asymmetry challenge that had previously limited institutional investor engagement with ESG based investment strategies. The average ESG Risk Rating for IDX80 constituents improved from 31.98 in 2022 to 29.9 in 2023 and further to 28.2 in 2024 indicating a measurable downward trend in unmanaged ESG risk rating exposure (lower scores are better; IDX Sustainability Report, 2024). The development and launch of multiple ESG-linked indices including the IDX ESG Leaders Index (ESGL), LQ45 Low Carbon Leaders Index, and Sharia compatible ESG indices expanded the menu of ESG investment products available in the Indonesian capital market.

Phase Three: Innovation Leadership and Carbon Market Institutionalization (2023–2024)

The most ambitious phase of IDX's institutional transformation encompasses the 2023-2024 period, defined by two landmark developments: the establishment of the Indonesian Carbon Exchange and the launch of the IDX Net Zero Incubator. The Carbon Exchange, inaugurated in September 2023, extended IDX's mandate into wholly new institutional territory transitioning from a purely financial securities exchange to a multi-asset platform encompassing carbon units (SPE GRK, or Greenhouse Gas Emission Reduction Certificate) as exchange tradable instruments. IDX claims this position as the first regulated carbon exchange in Southeast Asia, as stated in the IDX Sustainability Reports 2023 and 2024; however, this claim has not yet been supported by independent regional comparative data, and therefore should be qualified as an institutional claim that requires further comparative verification. Factually, as of September 2023, no other regulated carbon exchange operates under the capital market legal framework in the ASEAN region, although several countries such as Singapore and Malaysia are developing similar frameworks. Despite this qualification, the establishment of the Indonesia Carbon Exchange marks a significant institutional step in the regional sustainable finance landscape and provides a relevant institutional precedent for the region.

Table 2 presents the quantitative performance trajectory of IDX's ESG ecosystem from 2022 to 2024, while Table 3 documents the early operational metrics of the Bursa Karbon.

Table 2. IDX Sustainable Finance Ecosystem: ESG Product Performance Indicators (2022-2024)

Indicator	2022	2023	2024
ESG-linked ETF & Mutual Fund Products (units)	10	13	17
Net Asset Value-ESG Products (IDR million)	3.775.057	6.560.910	7.180.363
SRI-KEHATI Index NAV (IDR million)	3.807.075	6.530.650	7.011.516
ESG Leaders (ESGL) Index NAV (IDR million)	22.279	30.260	127.305
Avg. ESG Risk Rating - IDX80 Constituents (Sustainalytics)*	31,98	29,9	28,2
GSS Bond/Sukuk Listing Value (IDR billion)	10.500	24.106	35.576
Number of GSS Bond/Sukuk Issuers (entities)	3	7	11
Number of GSS Bond/Sukuk Issuances	3	10	23

*Lower ESG Risk Rating scores indicate better performance (lower unmanaged ESG risk exposure).

Source: IDX Sustainability Reports 2023 and 2024; IDX Performance Highlights data.

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Table 3. Indonesian Carbon Exchange Operational Performance (2023-2024)

Carbon Exchange Indicator	2022	2023	2024
Number of Registered Participants (users)	N/A	46	100
Transaction Volume (IDR billion)	N/A	494.254	413.764
Transaction Value (tonnes CO2eq)	N/A	30,91	19,73
Transaction Frequency (times)	N/A	47	105
Retirement (tonnes CO2eq)	N/A	6.260	420.987

Note: Carbon Exchange was launched in September 2023; 2022 data not applicable (N/A).
Source: IDX Sustainability Report 2024.

Table 3 reveals a nuanced carbon market trajectory. While transaction frequency increased substantially from 47 transactions in 2023 to 105 in 2024 the aggregate transaction volume (in IDR terms) declined from IDR 494 billion to IDR 413 billion, and the volume traded in carbon units decreased from 30,91 to 19,73 tonnes CO2eq. Conversely, carbon unit retirements increased dramatically from 6.260 to 420.987 tonnes CO2eq, suggesting that while active trading liquidity remains limited, the use of carbon units for actual emission offset purposes grew significantly. The number of registered participants doubled from 46 to 100, indicating expanding market access but simultaneously highlighting the nascent stage of market depth.

The IDX Net Zero Incubator, launched in 2024, reflects a further evolution of IDX's institutional role from infrastructure provider to active capacity builder. Simultaneously, the 2024 release of comprehensive ESG Reporting Guidance and mandatory integration of ESG disclosure into the SPE-IDXnet electronic reporting system operationalized a more prescriptive disclosure framework. The governance architecture supporting these developments had matured considerably: IDX's Board of Directors held 14 of 44 total meetings in 2024 specifically addressing sustainability matters particularly the Carbon Exchange reflecting elevated strategic priority accorded to sustainability governance within IDX's leadership structure (IDX Sustainability Report, 2024).

IDX's Own Environmental Performance: An Operational Commitment

Beyond its market enabling role, IDX's own operational sustainability performance provides an important dimension of institutional commitment. Table 4 documents IDX's Greenhouse Gas (GHG) emission trajectory, which reveals the growing complexity of the organization's carbon footprint as operations expanded post pandemic.

Table 4. IDX Operational GHG Emissions by Scope (2022–2024)

GHG Emission Indicator	2022	2023	2024
Scope 1 Emissions (tonne CO2eq)	4,6	5,6	3,2
Scope 2 Emissions (tonne CO2eq)	2.976,6	3.056,6	2.218,2
Scope 3 Emissions (tonne CO2eq)	8.033,8	8.748,7	10.282,9
Total Emissions (tonne CO2eq)	**11.015,0**	**11.810,9**	**12.504,4**
GHG Intensity per Employee (kg CO2eq/person)	18,8	19,3	19,9
GHG Intensity per Revenue (kg CO2eq/IDR billion)	3,8	4,7	4,5
Emission Intensity Reduction vs. Prior Year (tonne CO2eq/IDR billion)	-	-	0,2

Source: IDX Sustainability Reports 2023 and 2024; GHG calculations based on ESDM national guidelines and IPCC international standards.

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Table 4 shows that the total GHG emissions of IDX increased in absolute terms from 11,810.9 tonnes CO2eq in 2023 to 12,504.4 tonnes CO2eq in 2024, driven primarily by the rise in Scope 3 emissions from 8,748.7 to 10,282.9 tonnes CO2eq as operational activities expanded under a post-pandemic hybrid work scheme. This absolute increase should be understood proportionally: IDX recorded a decrease in emission intensity per revenue of 0.2 tonnes CO2eq/IDR billion in 2024, which is the first year this indicator was officially measured, indicating that revenue growth occurred faster than emissions growth. Nevertheless, it should be emphasized that intensity-based strategies do not replace the need for absolute emission reductions; both are different dimensions and both are relevant for comprehensively measuring an organization's climate performance. IDX itself acknowledges that it has not set absolute emission reduction targets or a formal GHG baseline by the end of 2024, which represents a tangible gap compared to international best practices in climate reporting. Accordingly, IDX's environmental performance is interpreted as initial progress in intensity measurement, rather than as evidence of an overall reduction in its carbon footprint.

Structural Barriers and Institutional Constraints

Despite this progressive institutionalization trajectory, IDX's sustainability reports candidly acknowledge persistent structural barriers. The Carbon Exchange faced early operational challenges documented explicitly in the 2023 and 2024 reports. Key constraints included limited market participant awareness of carbon trading mechanisms and the regulatory significance of emission reduction certificates, insufficient price discovery infrastructure, and the nascent state of Indonesia's broader carbon governance ecosystem. The IDX 2024 Sustainability Report specifically notes limited market participant and public awareness and limited information as challenges constraining carbon market development.

ESG disclosure quality and comparability also remained a recognized challenge. While the transition to mandatory ESG reporting through SPE-IDXnet represented a structural improvement, achieving meaningful comparability across listed companies particularly across sectors with substantially different ESG materiality profiles requires continued capacity building and standardized metrics. The 2024 report's acknowledgment of ongoing IFRS S1 and S2 gap analysis reflects IDX's recognition that its disclosure infrastructure remains in a transitional state relative to global best practice. Investor education and retail market ESG awareness continued to present challenges, with IDX's extensive education programs through investment galleries, digital platforms, seminars, and university partnerships still working to bridge the awareness gap between institutional and retail investors.

The structural obstacles encountered in the three phases of IDX development actually reflect the inherent tensions in the process of translating isomorphic pressures into the local context. The coercive pressure from POJK No. 51/2017 successfully promoted the establishment of initial infrastructure, yet the domestic regulatory framework has not fully regulated the carbon trading mechanism in detail, thereby creating gaps in terms of price discovery and legal certainty for market participants. The mimetic pressure driving IDX to adopt GRI, TCFD, and IFRS S1/S2 standards also faces real challenges when the reporting capacity of local issuers is uneven, resulting in a gap between the demands of global standards and practical preparedness in the field. Thus, the obstacles noted in IDX's sustainability reports are not merely operational constraints, but empirical evidence that the process of translating international standards into the local context requires time, adequate institutional capacity, and a supporting ecosystem that is gradually being developed.

DISCUSSION

IDX as an Institutional Entrepreneur

The longitudinal evidence from IDX's sustainability reports supports a characterization of IDX as an institutional entrepreneur an organization that actively shapes the institutional environment within which it operates, rather than merely adapting to exogenous pressures. While IDX's sustainability journey was catalyzed by regulatory mandate (POJK No. 51/2017), the organization progressively moved beyond minimal compliance toward the proactive design of market infrastructure, the construction of stakeholder coalitions, and the pursuit of legitimacy resources through international standard alignment and global institutional membership. Figure 2 presents a

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conceptual model of IDX's role as an ecosystem enabler, illustrating how IDX mediates between the regulatory layer and diverse capital market participants through multiple sustainability infrastructure channels.

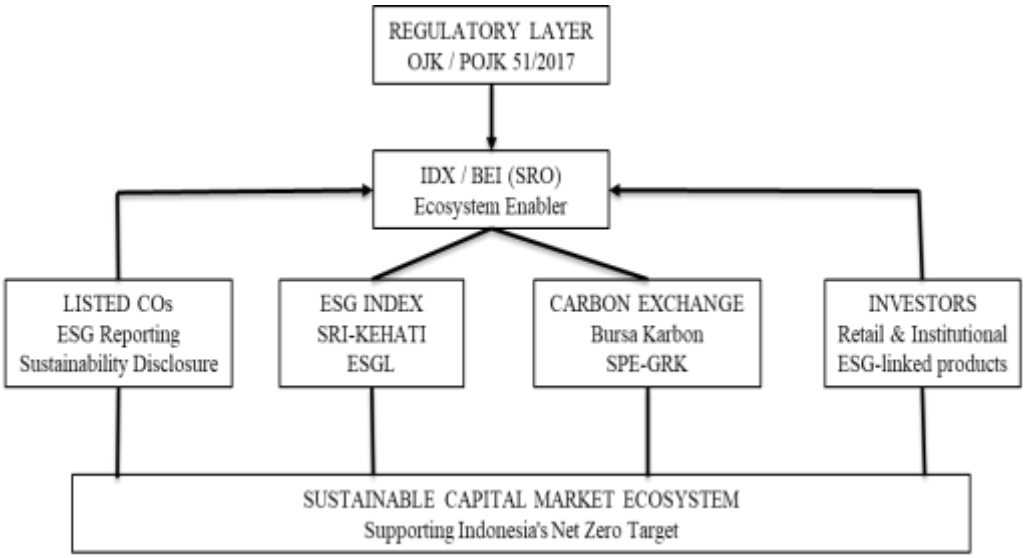

Figure 2. IDX as Sustainable Finance Ecosystem Enabler: Conceptual Model
Source: Authors' conceptual synthesis based on IDX Sustainability Reports 2018-2024 and institutional theory framework.

IDX's use of the UN SSE membership as a legitimating resource is theoretically instructive. By joining a globally recognized sustainability platform in 2019, IDX gained access to normative standards, peer exchange practices, and international credibility that amplified its domestic sustainability authority. This mechanism aligns with the concept of bridging the use of connections to external institutional fields to import legitimating frameworks that strengthen an organization's standing within its home field (DiMaggio & Powell, 1983; Jain et al., 2022). The Carbon Exchange represents the most theoretically significant element of IDX's institutional entrepreneurship. Establishing a new market with its attendant infrastructure, rules, participants, and price discovery mechanisms is quintessential institutional entrepreneurship (Jain et al., 2022). The early challenges with market participant awareness and liquidity are consistent with institutional entrepreneurship literature documenting the inherent difficulties of field creation.

Isomorphic Pressures and Selective Adoption

Table 5 presents an analytical mapping of the three forms of isomorphic pressure identified across IDX's sustainability trajectory, illustrating how each type of pressure manifested in specific organizational practices and varied in its period of dominance.

Table 5. Isomorphic Pressure Analysis: Mechanisms of IDX Sustainable Finance Institutionalization

Isomorphism Type	Driver / Source	Manifestation in IDX Practice	Period of Dominance
Coercive	POJK No. 51/POJK.03/2017 (OJK mandate)	Mandatory sustainability reporting; RAKB formulation; Sustainability Committee establishment	2018-2019 (primary)
Mimetic	Global exchange peers; ISSB; TCFD; GRI; SASB	GRI Standard adoption (2018-); TCFD alignment (2021); IFRS S1/S2 gap analysis (2024); SASB integration (2024)	2020-2024 (escalating)

Isomorphism Type	Driver / Source	Manifestation in IDX Practice	Period of Dominance
Normative	UN SSE; Sustainalytics; WFE; IOSCO; IGCN	UN SSE membership (2019); Sustainalytics partnership; Ring the Bell for Gender Equality; global exchange forums participation	2019-2024 (sustained)

Source: Authors' analysis based on institutional theory framework (DiMaggio & Powell, 1983; Scott, 2008) applied to IDX Sustainability Reports 2018-2024.

What is analytically significant is not merely the presence of these isomorphic pressures, but the evidence of selective and contextually adaptive adoption. Rather than wholesale importing international frameworks without modification, IDX consistently worked to adapt international standards to Indonesian market conditions-developing Sharia-compatible ESG indices that blend conventional ESG criteria with Islamic finance principles, designing investor education programs suited to Indonesia's distinctive retail investor demographics, and framing the Carbon Exchange within Indonesia's national climate policy architecture. This pattern of selective adoption resonates with the concept of institutional translation (Agustin et al., 2023; Wahab et al., 2024), through which internationally circulating models are actively transformed as they travel into new institutional contexts.

The translation process carried out by IDX can be understood through three interrelated mechanisms. First, IDX conducts regulatory contextualization, which involves adapting the generally applicable POJK No. 51/2017 mandate into specific operational instruments, such as sustainable finance action plans and ESG reporting guidelines designed according to the capacities of Indonesian issuers. Second, IDX implements normative hybridization by combining international standards such as GRI and TCFD with local market values, most evidently seen in the development of a Sharia-based ESG index that integrates conventional ESG criteria with Islamic finance principles. Third, IDX gradually builds cognitive legitimacy through consistent market education, so that sustainability reporting practices, which were initially unfamiliar to local issuers, slowly become a norm that is accepted and anticipated by market participants. These three mechanisms demonstrate that the translation of international standards is not merely a technical adaptation, but a meaning-making process that involves negotiation between global pressures and local contextual needs in a sustainable manner.

Implications for Emerging Market Sustainable Finance Policy

The IDX case carries substantial practical implications for policymakers and market practitioners in emerging economies seeking to build sustainable finance ecosystems. First, the sequencing of institutional development matters. IDX's experience suggests that premature institutional complexity attempting to simultaneously launch carbon markets, mandatory ESG disclosure, and ESG product innovation without foundational capacity building creates implementation risks. The relative success of ESG index development compared with the early challenges of the Carbon Exchange illustrates how sequencing and staging of institutional reforms affects implementation feasibility.

Second, the critical role of the SRO as ecosystem convener not merely as rule-setter emerges clearly from the IDX case. IDX's most impactful sustainability contributions were achieved not through mandating behaviors but through building infrastructure (ESG indices, rating systems, reporting platforms, carbon trading mechanisms) that made sustainable finance practices more accessible, lower-cost, and better-signaled across the market ecosystem. This infrastructure-building function aligns with the platform economy literature's analysis of how platform operators create value by reducing transaction costs and enabling coordination among diverse market participants. Third, the persistent challenge of participant awareness underscores that institutional infrastructure alone is insufficient: market institutions can create scaffolding for sustainable finance, but the activation of that infrastructure requires sustained investment in education, capacity building, and incentive alignment.

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CONCLUSION

Main Finding

This longitudinal case study of Indonesia Stock Exchange from 2018 to 2024 reveals a substantial institutional transformation in how a major emerging economy stock exchange conceptualizes and performs its sustainability mandate. From its origins as a compliance oriented reporter under POJK No. 51/2017, IDX evolved into a proactive institutional entrepreneur constructing the ESG infrastructure of Indonesian capital markets launching multiple ESG indices (SRI-KEHATI, ESGL, LQ45 Low Carbon Leaders, and others), integrating Sustainalytics ESG risk ratings for listed companies, establishing Southeast Asia's first regulated carbon exchange with 100 participants and 420,987 tonnes CO2eq retired in its second year of operation, and progressively aligning disclosure frameworks with global standards including GRI, TCFD, SASB, and IFRS S1 and S2.

Through the lens of institutional theory, this evolution reflects the progressive layering of coercive, normative, and cognitive institutional pressures, shaped by IDX's distinctive position as a Self-Regulatory Organization with both regulatory authority and market participation functions. The three-phase developmental model regulatory compliance (2018-2019), ecosystem construction (2020-2022), and innovation leadership (2023-2024) offers a conceptual framework that may have applicability to other emerging market exchanges undertaking similar institutional journeys. IDX's selective and contextually adaptive engagement with international sustainability frameworks demonstrates that institutional entrepreneurship in emerging markets requires active translation of global standards into locally meaningful forms.

Theoretically, this paper contributes to the nascent literature on SROs as sustainability ecosystem enablers, demonstrating empirically that stock exchanges can and do function as active institutional entrepreneurs rather than passive regulatory conduits. Empirically, the study provides the first systematic longitudinal analysis of IDX's sustainability transformation, supported by quantitative performance data spanning ESG product growth, carbon market development, and GHG emission trajectories. The implications extend to policymakers designing sustainable finance mandates in emerging economies, to stock exchanges seeking models for sustainability strategy development, and to international organizations such as the UN SSE and World Bank supporting emerging market sustainable finance capacity building.

Limitations and Future Research

This study is subject to several limitations. First, as a single case study, the generalizability of findings is inherently bounded, and caution is warranted in extrapolating the IDX experience to other emerging market exchanges with different regulatory histories, market structures, and institutional environments. Second, the analysis relies primarily on official institutional documents IDX's sustainability reports which may reflect aspirational positioning alongside genuine performance data. Triangulation with investor perception data, listed company surveys, and independent market analysis could strengthen confidence in findings. Third, the Carbon Exchange remains in an early operational phase as of the study period, and its long-term institutionalization trajectory including whether the significant increase in retirement volumes (from 6,260 to 420,987 tonnes CO2eq) represents sustainable market maturation remains an open empirical question.

Future research should pursue several directions: longitudinal comparative studies of sustainable stock exchange development across ASEAN and other emerging markets; quantitative analysis of the relationship between IDX's sustainability infrastructure investments and listed company sustainability performance; investigation of the perspectives of diverse market participants (listed companies, investors, exchange members) on IDX's sustainability initiatives; and deeper examination of the Carbon Exchange's contribution to Indonesia's national emission reduction trajectory. These research directions collectively would advance understanding of how financial market institutions in emerging economies can most effectively support the global transition to a sustainable, low-carbon economy.

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