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Carbon Management Disclosure and Firm Value in the Nigerian Energy Market

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Abstract

The absence of robust carbon disclosure mechanisms undermines investor trust, increases information asymmetry, and weakens market efficiency. Nigerian energy firms may inadvertently appear less competitive or unattractive to international investors who prioritize sustainable environmental performance. Hence, the study investigated the extent to which carbon management disclosure influences firm value in the Nigerian energy sector. Ex-post facto research design was adopted in the study. All the nine listed energy firms in Nigeria made up the population of the study. Purposive sampling was used to select the sample size of six. Secondary data were collected from the annual reports of the firms over an eleven year period from 2014-2024. The data collected were preliminarily analysed using descriptive analysis, test of autocorrelation and test of heteroskedasticity. Robust least square regression was used to test the hypothesis. The study found that carbon management disclosure (proxy by greenhouse gas emission disclosure) has a significant positive influence on firm value (proxy by share price) in the Nigerian energy sector ($\beta = 200.5120$, $p = 0.0000$). In conclusion, in today's capital markets, transparency in carbon management is no longer peripheral—it is central to value creation, reputation management, and sustainable corporate performance. We recommend that the Nigerian Securities and Exchange Commission (SEC), in collaboration with the Financial Reporting Council of Nigeria (FRCN), should institutionalize a mandatory and standardized framework for greenhouse gas emission disclosure among listed energy companies.

Keywords

Carbon Management Disclosure, Firm Value, Share Price, Greenhouse Gas Emission

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Introduction

In recent decades, climate change has emerged as one of the most pressing global challenges, with carbon emissions being a principal contributor to global warming and environmental degradation. The rising awareness of environmental risks and the urgency for sustainable development have compelled businesses, particularly those in carbon-intensive industries such as oil, gas, and energy, to rethink their operational and disclosure strategies (Fawzyputra et al., 2025). Central to this transformation is the concept of carbon management disclosure, which refers to the voluntary or mandatory reporting of carbon emissions, mitigation efforts, carbon governance, and sustainability strategies. As environmental accountability becomes a critical measure of corporate responsibility, businesses are under increasing pressure from stakeholders—regulators, investors, customers, and the public—to be transparent about their environmental footprint (Nworie et al., 2024; Nworie & Orji-Okafor, 2024; Okafor et al., 2024)). This shift has transformed corporate carbon disclosure from a symbolic gesture to a strategic tool that can influence investor confidence, market valuation, and long-term sustainability.

In the Nigerian context, the energy sector, predominantly characterized by oil and gas companies, plays a crucial role in the nation's economic stability, contributing over 80% of government revenue and 95% of its foreign exchange earnings (Njoku et al., 2025). However, this sector is also a major source of greenhouse gas emissions due to flaring, refining, and inefficient production methods. Nigeria emitted approximately 122.7 million metric tons of carbon dioxide in 2022

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(Worldometer, 2023), with the oil and gas industry accounting for over 32.6% of this total (Okonkwo, 2022). In 2024, National Oil Spill Detection and Response Agency (NOSDRA) reported that Nigeria experienced a financial loss of approximately $1.1 billion (about ₦1.696 trillion) due to gas flaring. This was a result of oil and gas companies in the country flaring an estimated 300.5 billion standard cubic feet (SCF) of gas over the year (Eboh, 2025). This heavily contributes to the nation's environmental degradation and adverse public health outcomes. Meanwhile, global investors and rating agencies are increasingly incorporating Environmental, Social, and Governance (ESG) metrics into capital allocation decisions (Fawzyputr et al., 2025). Nigeria's Securities and Exchange Commission (SEC) has also begun encouraging sustainability disclosures in line with global best practices. Yet, most energy firms in Nigeria remain at the early stages of carbon management disclosure, with limited standardized reporting and inconsistent integration into corporate governance.

Effective carbon emission management has become a business imperative rather than a mere regulatory requirement. In today's global economy, Triasma and Sari (2025) argued that companies that integrate climate change mitigation strategies into their core business models are better positioned to manage regulatory risks, secure access to capital, and maintain competitive advantage. Carbon management involves not only the monitoring and reduction of emissions but also the communication of these efforts through transparent reporting frameworks such as the Task Force on Climate-Related Financial Disclosures (TCFD), Global Reporting Initiative (GRI), and Carbon Disclosure Project (Ding et al., 2023). Beyond compliance, these disclosures signal environmental stewardship, enhance corporate reputation, and foster stakeholder trust. Businesses that engage in robust carbon management often benefit from improved operational efficiency, innovation in green technologies, and alignment with the values of environmentally conscious investors (Orjinta et al., 2024). As climate-related risks increasingly affect asset prices, insurance premiums, and access to global capital, firms that fail to adopt effective carbon management practices risk becoming obsolete in a rapidly greening global economy.

The link between carbon emission disclosure and firm value is increasingly gaining scholarly and practical interest. Firm value, as measured by share price, is influenced not only by financial performance but also by non-financial metrics such as environmental performance and corporate transparency (Utomo et al., 2020). Numerous studies in developed economies have shown that firms that voluntarily disclose their carbon emissions tend to enjoy a valuation premium, reflecting investors' preference for sustainable and transparent businesses (Maharani et al., 2024). Carbon disclosures reduce information asymmetry between firms and investors, thereby lowering the perceived risk and cost of capital. Moreover, companies that openly report their carbon data demonstrate proactive risk management, strategic foresight, and commitment to long-term value creation—attributes that are attractive to institutional investors and ESG-focused funds.

However, in spite of the country's commitment to climate change mitigation under the Paris Agreement and the increasing global emphasis on ESG (Environmental, Social, and Governance) factors, most Nigerian oil and gas firms still exhibit low levels of carbon management disclosure (Orjinta et al., 2024; Okike et al., 2024; Nwokeogu et al., 2024). Many firms lack standardized frameworks for reporting carbon-related information, and voluntary disclosures remain rare. Furthermore, environmental information, when disclosed, is often not integrated into mainstream financial reports, leading to limited visibility and questionable reliability. This lack of transparency is compounded by weak regulatory enforcement, low public pressure, and limited institutional investor activism in the Nigerian market.

The consequence of the above situation is a dual loss: on one hand, firms may be failing to unlock value through environmental leadership; on the other hand, stakeholders—including investors, regulators, and the public—are deprived of crucial information needed to make informed decisions. The absence of robust carbon disclosure mechanisms undermines investor trust, increases information asymmetry, and weakens market efficiency. Nigerian energy firms may inadvertently appear less competitive or unattractive to international investors who prioritize sustainable environmental performance. Hence, it becomes imperative to investigate the extent to which carbon management disclosure influences firm value in the Nigerian energy sector, thereby providing empirical evidence to support sustainable business practices in emerging economies. As Nigeria moves toward energy transition and net-zero ambitions, this research provides timely hints into how firms' environmental reporting behaviors impact their financial outcomes and stakeholder perception.

Literature Review

2.1 Conceptual Review

2.1.1 Carbon Management Disclosure

Carbon management disclosure refers to the communication and reporting of an organization's practices, policies, data, and performance related to carbon emissions and climate change mitigation (Nwokeogu et al., 2024). It is a strategic process where firms reveal the extent of their carbon footprint, efforts to manage or reduce emissions, and their overall commitment to environmental sustainability, often through publicly available reports. Carbon management disclosure is the deliberate and structured act of making information about an organization's greenhouse gas (GHG) emissions and climate-related strategies available to stakeholders (Adekanmi et al., 2024). It encompasses both qualitative narratives and quantitative data concerning how a firm identifies, measures, manages, and reduces carbon emissions from its operational and supply chain activities. This concept is rooted in the broader framework of environmental disclosure and sustainability reporting, with a primary focus on climate change (Habibullah et al., 2025). Carbon disclosure goes beyond mere compliance with environmental laws; it signifies a company's commitment to transparency, accountability, and environmental stewardship.

In a corporate context, carbon management disclosure serves as a communication bridge between a firm and its stakeholders—particularly investors, regulators, and the general public—about how the firm aligns its operations with climate

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change imperatives (Nwokeogu et al., 2024). It often includes emission inventories, reduction targets, carbon offset strategies, energy usage trends, and associated risks and opportunities. Firms disclose this information through annual reports, sustainability or environmental reports, and third-party platforms such as the Carbon Disclosure Project (CDP). These disclosures allow stakeholders to assess the firm's environmental performance, future preparedness, and its alignment with global climate goals (Adekanmi et al., 2024).

The growing global emphasis on Environmental, Social, and Governance (ESG) standards has elevated the significance of carbon disclosure (Luo & Tang, 2023). While some firms engage in this practice voluntarily to boost their reputation and attract sustainability-conscious investors, others do so in response to regulatory requirements or market pressure. Nonetheless, carbon management disclosure, whether voluntary or mandated, reflects a firm's strategic response to environmental risk, especially in carbon-intensive industries such as energy, manufacturing, and transportation.

In essence, carbon management disclosure is a tool for corporate legitimacy and risk communication (Adekanmi et al., 2024). It is not merely a reporting exercise but a reflection of a firm's values and commitment to environmental integrity. By disclosing their carbon management practices, firms signal to the market that they are not only environmentally responsible but also strategically positioned to thrive in a low-carbon economy. Hence, carbon disclosure becomes a critical element in shaping public perception, managing environmental risk, and enhancing stakeholder trust.

2.1.2 Firm Value

Firm value refers to the overall worth of a business as perceived by investors, stakeholders, and the market. It encompasses the financial valuation of a company based on its profitability, growth prospects, market share, and risk profile, often measured using indicators such as market capitalization, enterprise value, and stock price (Koller et al., 2010). Firm value is a multifaceted concept that captures the economic and financial worth of a company from the standpoint of investors and the capital market. It represents how much a company is valued in monetary terms, taking into account both tangible and intangible assets, current and future earning potential, and the risks associated with the business (Lonkani, 2018). The concept plays a central role in corporate finance, investment analysis, and strategic decision-making, serving as a key indicator of a firm's performance, viability, and market attractiveness.

From a financial standpoint, firm value is often reflected in the company's market capitalization, which is derived by multiplying the current share price by the number of outstanding shares (Permata & Alkaf, 2020). However, this surface-level calculation does not encompass the full spectrum of a firm's value. A more comprehensive metric is enterprise value, which includes market capitalization, debt, minority interest, and cash equivalents, providing a more holistic view of the firm's total market valuation. These financial indicators help investors gauge how much a company is worth if it were to be bought or sold in its entirety.

Beyond these quantitative metrics, firm value also embodies qualitative factors that influence investor perception and market confidence. These include the company's brand equity, management quality, innovation capability, governance structure, and sustainability practices. In modern capital markets, intangible drivers such as corporate social responsibility and environmental performance—especially carbon management—are increasingly influencing firm value, as they shape risk exposure and long-term profitability (Habibullah et al., 2025).

Firm value is also dynamic and sensitive to both internal and external factors (Gharaibeh et al., 2017). Internally, decisions on capital structure, operational efficiency, dividend policy, and investment strategy can directly affect firm value. Externally, macroeconomic conditions, industry trends, investor sentiment, regulatory changes, and environmental risks play significant roles. As such, firm value is not static; it evolves based on how well a firm can respond to opportunities and challenges in its operating environment.

2.2 Theoretical Framework and Development of Hypothesis

The Resource-Based View (RBV) theory originated from the strategic management literature and was formally articulated by Jay Barney in 1991 (Barney et al., 2011), though its foundational ideas can be traced to the earlier works of Edith Penrose (1959) (Pitelis, 2004). Penrose laid the groundwork by emphasizing the importance of internal resources in determining a firm's growth and performance. Barney later expanded this into a more formalized theory, stating that a firm's ability to gain and sustain competitive advantage is rooted in the uniqueness of its internal resources and capabilities. Over time, the RBV has become a foundational framework for analyzing how the strategic deployment of firm-specific assets contributes to superior performance outcomes.

The core postulation of the Resource-Based View is that firms possess heterogeneous resources—both tangible and intangible—that can yield sustained competitive advantages if they are valuable, rare, inimitable, and non-substitutable (VRIN) (Sun et al., 2024). According to the theory, these resources—such as technological know-how, organizational culture, innovative capabilities, and brand equity—are the primary drivers of firm performance. The RBV further emphasizes that it is not merely the possession of resources that leads to value creation, but the firm's ability to deploy, manage, and protect them efficiently over time (Bastian et al., 2018; Nworie & Okafor, 2023). This perspective shifts the focus from external market positioning (as in traditional strategy models) to internal competencies as the foundation for long-term success.

The RBV theory is highly relevant to the current study as it provides a useful lens for understanding how carbon management disclosure—an intangible capability—can serve as a strategic resource that enhances firm value, especially in environmentally sensitive sectors like the Nigerian energy market. Transparent and effective disclosure of carbon emissions signals not only environmental responsibility but also managerial competence, innovation, and foresight (Xie et al., 2024). These are intangible assets that align with the VRIN criteria, positioning firms for long-term competitive advantage. In a

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business environment increasingly shaped by sustainability concerns, firms that effectively manage and disclose their carbon practices are likely to differentiate themselves, attract ESG-focused investors, and build a favorable reputation—factors that contribute directly to enhanced firm value. Thus, the RBV offers a theoretical foundation for interpreting carbon disclosure as more than a compliance exercise; it is a value-creating strategy grounded in the firm's internal capabilities. Within the framework of the Resource-Based View (RBV), carbon management disclosure becomes an endogenous resource when it is strategically developed and internalized by firms as part of their operational identity. Through organizational learning, firms continuously refine their environmental reporting processes, embed sustainability into their core strategies, and build internal competencies that enhance their responsiveness to regulatory, environmental, and market expectations. Over time, this learned behavior results in consistent, credible, and high-quality disclosures that are not easily replicated by competitors. Additionally, such transparency strengthens a firm's reputation capital—a form of intangible asset that boosts stakeholder trust, attracts environmentally conscious investors, and enhances brand loyalty. Together, these factors can positively influence market performance and firm value, making carbon disclosure not just a compliance activity but a strategic asset that aligns with RBV's emphasis on valuable, rare, and inimitable resources.

While the Resource-Based View (RBV) emphasizes the value of internal resources, it does not fully explain how firms adapt to changing environments or institutional pressures—this is where Dynamic Capability Theory and Institutional Theory complement the RBV. From the perspective of Dynamic Capability Theory, disclosure behavior is internalized as a strategic resource when firms develop the capacity to sense environmental risks, seize sustainability opportunities, and reconfigure their operations to align with evolving carbon standards and stakeholder expectations (Rothfuß, 2023). This continuous adaptation turns disclosure from a static report into a strategic routine that enhances competitiveness. Institutional Theory further explains that firms face normative, coercive, and mimetic pressures to conform to sustainability norms, and those that proactively disclose carbon management data are seen as legitimate and forward-thinking within their industry (Petisme, 2025). By integrating these theories, disclosure behavior is understood not only as an internal resource but also as a strategically constructed response to external demands, enabling firms to maintain long-term value and legitimacy in dynamic market environments.

However, based on the postulates of Resource-Based View Theory, the study therefore hypothesises that:

Ha: Carbon management disclosure (proxy by greenhouse gas emission disclosure) has a positive influence on firm value (proxy by share price) in the Nigerian energy sector.

2.3 Synthesis of Empirical Literature and Gap in Literature

Several studies have investigated the influence of carbon management disclosure on firm value, yielding mixed results across different regions and sectors. In the Indonesian context, Habibullah et al. (2025) and Maharani et al. (2024) found that transparent carbon emission disclosures positively affect firm valuation, suggesting that stakeholders value environmental transparency. This is supported by Triasma and Sari (2025), whose qualitative review emphasized reputational benefits and stakeholder trust as mechanisms linking disclosure to long-term performance. However, Fawzyputr et al. (2025), also in Indonesia, found that while environmental performance positively affects firm value, carbon emissions disclosure had no significant impact, implying that stakeholders may prioritize tangible environmental outcomes over disclosures.

In the Nigerian context, the evidence is similarly divided. Okike et al. (2024) observed a significant positive effect of various emissions disclosures on market value added in oil and gas firms, advocating for enhanced transparency to drive investor confidence. Likewise, Obafemi and Oyedepo (2024) reported that carbon accounting significantly improves firm performance, particularly when embedded within strong corporate governance. Nwokeogu et al. (2024) further reinforced the financial merit of proactive carbon management strategies such as emission control and waste management, all showing significant positive effects on ROA. Conversely, Orjinta et al. (2024) found that most carbon-related disclosures exerted insignificant effects on ROA, with only performance disclosure showing a weak positive impact—highlighting the contextual limits of carbon disclosures in driving immediate profitability. Similarly, Agbo et al. (2024) reported a significant negative relationship between greenhouse gas disclosure and firm competitiveness (market-to-book ratio), revealing potential investor concerns over the costs or implications of environmental transparency in the Nigerian market.

Broader evidence points to the need for a more nuanced interpretation of carbon disclosures' financial effects. Adekanmi et al. (2024), focusing on the financial sector, demonstrated that comprehensive carbon management strategies—beyond disclosure—substantially enhance wealth creation. This suggests that integrated, operational sustainability efforts yield more investor confidence than mere reporting. In contrast, Olawale (2023), studying Finnish firms, found that both carbon emissions and related disclosures had statistically insignificant effects on firm value, possibly due to the maturity of the Finnish regulatory environment, which minimizes market surprises from disclosure. Collectively, these findings underline that the effect of carbon management disclosure on firm value is mediated by contextual factors such as sectoral dynamics, regulatory rigor, stakeholder expectations, and the credibility of environmental commitments. The Nigerian energy sector, characterized by underdeveloped regulatory frameworks and market inefficiencies, may thus require deeper integration of carbon strategies into core business practices for disclosures to meaningfully influence share price.

Despite a growing body of empirical literature linking carbon management disclosure—particularly greenhouse gas emission disclosure—to various indicators of firm performance and valuation across diverse geographical contexts, notable gaps remain in the Nigerian energy sector. While studies by Habibullah et al. (2025), Maharani et al. (2024), and Fawzyputr et al. (2025) have explored how such disclosures influence firm value in Indonesia, and Olawale (2023) examined the Finnish context, there is limited consensus on the directional impact and significance of carbon disclosure on firm value. In the Nigerian context, studies by Orjinta et al. (2024), Okike et al. (2024), and Agbo et al. (2024) have produced mixed findings,

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often focusing on accounting ratios or ROA rather than direct market indicators like share price. Moreover, while Nwokeogu et al. (2024) and Adekanmi et al. (2024) assessed the operational and strategic dimensions of carbon management, they did not isolate the effect of greenhouse gas disclosure on market-based firm valuation. Similarly, Obafemi and Oyedepo (2024) addressed carbon accounting from a corporate governance perspective, and Triasma and Sari (2025) focused on reputation and stakeholder trust, yet both lacked empirical investigation of stock price effects. Furthermore, none of the reviewed studies employed robust least squares regression to address the potential distortionary influence of outliers in the dataset—a common concern in financial data analysis. This leaves a contextual, methodological, and analytical void in understanding how carbon management disclosure, as proxied by greenhouse gas emission disclosure, influences firm value measured by share price specifically within Nigeria's energy sector over a longitudinal period (2014–2024).

Methodology

This study adopts an ex-post facto research design to investigate the extent to which carbon management disclosure affects firm value in the Nigerian energy sector. The ex-post facto design is suitable because the study relies on historical data that has already been documented in firms' annual and sustainability reports without any manipulation or control over the independent variable (Nworie et al., 2022). This design allows for the observation of naturally occurring variations in carbon disclosure practices and their statistical association with share prices over time. Given the retrospective nature of the study and its reliance on secondary data, the design enables a credible evaluation of statistical effect in a non-experimental setting.

The population of the study consists of the nine (9) downstream oil and gas companies listed on the NGX as of 31st December 2024. These firms were selected due to their direct involvement in operations that significantly impact environmental outcomes, especially greenhouse gas emissions.

Table 3.1: Population of the Study

1.	Aradel Holdings Plc
2.	Capital Oil Plc
3.	Conoil Plc
4.	Eterna Plc
5.	Japaul Gold & Ventures Plc
6.	MRS Oil Nigeria Plc
7.	Oando Plc
8.	Seplat Energy Plc
9.	TotalEnergies Marketing Nigeria Plc

Source: Nigerian Exchange Group (2023)

From the population, a sample of six (6) firms was drawn using a purposive sampling technique. For a firm to be selected into the sample, it must have been listed as at 2014 accounting year and must also have published its 2024 annual report. These selection criteria ensure consistency and reliability in data analysis, eliminating firms with significant data gaps.

Table 3.2: Sample Size of the Study

1	Conoil Plc
2	Eterna Plc
3	Japaul Gold & Ventures Plc
4	MRS Oil Nigeria Plc
5	TotalEnergies Marketing Nigeria Plc
6	Oando Plc

Source: Researcher's Compilation (2025)

The study relied exclusively on secondary data obtained from published annual reports, sustainability disclosures, and financial statements of the sampled firms covering the years 2014 to 2024. Data relating to greenhouse gas emissions disclosure (Scope 1 emissions) are extracted and assessed in line with the Global Reporting Initiative (GRI 305-1). Share price data are obtained from NGX fact books and market bulletins. The selected timeframe of 11 years allows the study to capture evolving carbon disclosure practices alongside stock market behavior, providing a longitudinal view of the relationship. The study uses two major variables:

- Independent Variable: Carbon Management Disclosure, proxied by Greenhouse Gas Emissions Disclosure (Scope 1). Disclosure is coded as "1" if GHG emissions are reported in a given year and "0" if not. A disclosure index was computed as the ratio of actual disclosures to the number of disclosure items recommended under Global Reporting Index (GRI) 305-1.
- Dependent Variable: Firm Value, proxied by Share Price. Share price represents the firm's market valuation as perceived by investors.

To evaluate the effect of carbon disclosure on firm value, the study formulates a linear panel regression model as follows:

$SPit = \beta_0 + \beta_1 GHGEDit + \varepsilon it$ _____eqi

Where:

SPit = Share Price of firm *i* in year *t*

GHGEDit = Greenhouse Gas Emissions Disclosure Index for firm *i* in year *t*

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β_0 = Constant

β_1 = Coefficient of greenhouse gas disclosure

ε_{it} = Error term

Two control variables (firm size and leverage) were added to the model to reduce the impact of variable omission bias since literature has established apparently that these attributes of a firm could influence its share price (Shuaibu, Ali & Amin, 2019; Jeroh, 2020; Abba & Usman, 2016). Hence, we estimated the model below for robustness analysis:

$SPit = \beta_0 + \beta_1 GHGEDit + FSZit + LEVit + \varepsilon it$ _____eqii

Where:

FSZit = Firm Size of firm *i* in year *t*

LEVit = Leverage for firm *i* in year *t*

While equation ii model was to assess the joint influence of carbon management and control variables on share price, the equation i model tested whether GHG disclosure (as a proxy for carbon management transparency) has a statistically significant impact on share prices (firm value) over the period under review. The data were analyzed using Descriptive Statistics and Robust Least Squares (RLS) Regression. Descriptive statistics summarized the data's central tendency and variability, while the RLS regression model tested the hypotheses, addressing issues of non-normality and heteroskedasticity that are present in financial data. All statistical analyses were conducted using econometric software, namely Eviews, to ensure accuracy and reproducibility. The statistical significance of the independent variable (carbon disclosure) was evaluated using p-values at the 5% significance level. If the p-value associated with β_1 is less than 0.05, the null hypothesis is rejected, indicating a significant effect of GHG disclosure on share price. Conversely, if the p-value is greater than 0.05, the null hypothesis is not rejected, implying an insignificant effect.

Findings

4.1 Descriptive Analysis

The study ascertained the extent to which carbon management disclosure (proxy by greenhouse gas emission disclosure) influences firm value (proxy by share price) in the Nigerian energy sector. The secondary data for the study were collected from firms' annual reports over an eleven years: 2014-2024 (see Appendix A). As shown in the Appendix (A), TotalEnergies Marketing Nigeria exhibits the most consistent carbon disclosure record among the sample firms, beginning disclosures in 2015 and maintaining them every year afterward. This consistent disclosure aligns with an upward trend in share price, especially noticeable from 2020 onwards. Between 2020 and 2024, TotalEnergies' share price rose dramatically from ₦130.00 to ₦670.00. The increase in share price alongside sustained disclosure may indicate positive investor sentiment towards transparency in environmental performance. The dip in share price from 2016 (₦299.00) to 2019 (₦110.90) despite continued disclosure, however, suggests that other external market or operational factors could have played a role during that period.

Oando Plc provides a more erratic pattern in both disclosure and share price. The firm only disclosed emissions in 2019 and 2022, with all other years marked by non-disclosure. Interestingly, Oando's share price remained relatively low from 2014 to 2022, never exceeding ₦5.00 in those years. However, a significant surge occurred in 2023 and 2024, jumping to ₦11.65 and then ₦68.40 respectively, despite no disclosures being made in those years. This trend suggests that, for Oando, share price increases may be driven more by business developments, market dynamics, or speculation, rather than environmental transparency, thereby weakening the assumed link between disclosure and firm value in its case.

MRS Oil Nigeria Plc stands out as a firm with no carbon disclosure throughout the entire 11-year period. Its share price remained relatively low and declining from 2014 (₦37.44) to 2022 (₦14.10). However, in 2023 and 2024, the share price witnessed a notable uptick to ₦126.00 and ₦162.90, respectively. The lack of emissions disclosure across all years alongside the recent share price spike could point to non-environmental market factors, such as changes in company leadership, financial restructuring, or macroeconomic influences. Thus, MRS Oil shows no positive correlation between disclosure and firm value, possibly due to its non-compliance with GRI 305-1 standards.

Japaul Gold & Ventures Plc consistently reported no emissions disclosure across the studied period. The company's share price remained extremely low, hovering around ₦0.20–₦0.62 from 2014 to 2022, before increasing marginally to ₦2.62 in 2023 and falling slightly to ₦2.13 in 2024. Although the late increase may indicate improved investor interest, the overall valuation remains low, which may reflect the company's market position or investor skepticism tied to the lack of transparency and sustainable practices. In this case, the absence of carbon disclosure appears to align with sustained low firm value, suggesting a potential negative association between non-disclosure and investor confidence.

Eterna Plc similarly did not disclose emissions for any of the years reviewed. Its share price showed moderate fluctuations until 2022, followed by a significant rise in 2023 (₦21.95) and 2024 (₦27.60). These recent gains, while notable, came without improvements in disclosure. This trend may be attributed to external economic changes, industry dynamics, or internal operational improvements, rather than environmental reporting. The late surge in share price without disclosure once again challenges the assumption of a consistent positive relationship between GHG transparency and firm value.

Finally, Conoil Plc also reported no emissions disclosure over the entire period. Share prices fluctuated mildly from 2014 to 2022, staying between ₦18.50 and ₦38.11. However, 2023 and 2024 saw substantial growth, reaching ₦83.90 and ₦387.20, respectively. This remarkable increase in valuation, occurring without any reported GHG disclosures, underscores the possibility that market valuation in this sector might be influenced more by other strategic, financial, or macroeconomic factors

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than by sustainability reporting alone. Yet, this also emphasizes the disparity in how different stakeholders weigh environmental responsibility when pricing a firm's shares. Across the sample, only TotalEnergies demonstrated a consistent pattern of emissions disclosure, which appears to correspond with a long-term upward trajectory in share price, particularly in the latter years. The other firms largely failed to disclose emissions yet still experienced varying degrees of valuation growth, particularly from 2022 to 2024.

The data collected were in respect of firms' Greenhouse Gas Emission Disclosure as well as firms' share price as at the year end. In this section, the descriptive analysis of the data collected is shown in Table 4.1 below.

Table 4.1 Descriptive Analysis

	Share Price	Greenhouse Gas Emission Disclosure	FSZ	LEV
Mean	62.97818	0.181818	7.859099	0.918973
Median	14.74500	0.000000	7.800847	0.743999
Maximum	670.0000	1.000000	8.673134	3.270473
Minimum	0.200000	0.000000	6.943113	0.497518
Std. Dev.	117.3096	0.388650	0.392985	0.504333
Skewness	3.005981	1.649916	0.094453	2.449730
Kurtosis	13.48103	3.722222	2.552944	9.592360
Jarque-Bera	401.4881	31.37886	0.647748	185.5258
Probability	0.000000	0.000000	0.723341	0.000000
Sum	4156.560	12.00000	518.7006	60.65221
Sum Sq. Dev.	894500.1	9.818182	10.03842	16.53288
Observations	66	66	66	66

Source: Eviews 10 Output (2025)

The descriptive statistics for Share Price in Table 4.1 reveal several important characteristics of the data over the study period. The mean share price is approximately 62.98, indicating that on average, the market values of firms in the Nigerian energy sector hover around this level. However, the median share price is much lower at 14.75, suggesting a skewed distribution where a few firms have very high share prices pulling the average upward. This is further supported by the maximum share price of 670, which is substantially higher than both the mean and median, indicating the presence of outliers or highly valued firms. The minimum share price recorded is 0.2, showing some firms have very low market valuation. The standard deviation is large at 117.31, reflecting high variability in share prices across the firms and over time. The positive skewness of 3.01 confirms that the distribution is heavily right-skewed, with a long tail on the higher end of share prices. Additionally, the kurtosis value of 13.48 indicates a leptokurtic distribution, meaning the data has more extreme values or outliers than a normal distribution. The Jarque-Bera test probability of 0.0000 strongly rejects the null hypothesis of normality, confirming that share price data is not normally distributed.

Turning to Greenhouse Gas Emission Disclosure (proxy for Carbon Management Disclosure) in Table 4.1, the mean value is 0.18, indicating that on average, firms disclosed about 18% of the recommended greenhouse gas emission items annually, reflecting relatively low compliance or transparency overall. The median value is 0.0, showing that more than half of the firms did not report any GHG emissions disclosure in a given year, which highlights the limited adoption or reporting of carbon management practices across the sector. The maximum value of 1.0 indicates that some firms fully complied with the GRI 305-1 disclosure recommendations in certain years. The minimum value of 0 confirms that non-disclosure occurs frequently. The standard deviation of 0.39 shows moderate variability in disclosure levels among firms. A positive skewness of 1.65 indicates a right-skewed distribution, meaning a few firms have relatively high disclosure scores while many have low or no disclosure. The kurtosis value of 3.72 suggests a moderately leptokurtic distribution, implying a greater likelihood of extreme values than in a normal distribution. The Jarque-Bera test with a probability of 0.0000 rejects normality, confirming the data on greenhouse gas emission disclosure is not normally distributed.

In Table 4.1, firm size (FSZ), measured as the natural log of total assets, shows a mean of 7.8591 and a median of 7.8008, suggesting that, on average, the total assets of firms in the sample are fairly concentrated around this log-scale value. The maximum value of 8.6731 and minimum of 6.9431 indicate a moderate range of firm sizes within the dataset. The standard deviation of 0.3930 reflects relatively low dispersion from the mean, implying that most firms have similar asset levels. The skewness of 0.0945 shows a nearly symmetrical distribution, and the kurtosis value of 2.5529, which is close to 3, further suggests that the data is approximately normally distributed. The Jarque-Bera probability of 0.7233 confirms this normality, indicating no significant deviation from a normal distribution. This implies that firm size is well distributed across the sample, and statistical inferences using this variable are likely to be robust and reliable.

Firm leverage (LEV), calculated as the ratio of liabilities to total assets, has a mean of 0.9190 and a median of 0.7440, indicating that, on average, the firms are highly leveraged, with liabilities constituting a substantial portion of their assets. The maximum leverage of 3.2705 reveals that some firms carry more than triple their asset base in liabilities, whereas the minimum value of 0.4975 indicates that the least-leveraged firm still has liabilities equal to about half of its assets. The standard deviation of 0.5043 suggests notable variability in leverage levels across the firms. A skewness of 2.4497 indicates a strong rightward skew, meaning a few firms have extremely high leverage compared to the rest. The kurtosis value of 9.5924 reflects a leptokurtic distribution with fat tails, which implies a high probability of extreme values. The Jarque-Bera probability of

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0.0000 indicates a significant deviation from normality. Thus, while leverage is an essential control variable, its non-normal distribution should be considered in model specification or diagnostic tests.

4.2 Model Diagnostics

The study conducted three model diagnostic tests: autocorrelation test, heteroskedasticity test and normality test.

Table 4.2 Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.247827	Prob. F(2,62)	0.1142
Obs*R-squared	4.462144	Prob. Chi-Square(2)	0.1074

Source: Eviews 10 Output (2025)

The **Autocorrelation Test**, presented in Table 4.2, uses the Breusch-Godfrey Serial Correlation LM Test to detect whether residuals in the regression model are serially correlated across time. Serial correlation, if present, can invalidate standard statistical inferences by violating the assumption that residuals are independent. In this study, the test yields a probability value (Prob. F(2,62)) of 0.1142, which is greater than the conventional significance level of 0.05. This result indicates that there is no statistically significant evidence of autocorrelation in the residuals, meaning the model's errors are independently distributed over time. Thus, the regression estimates can be considered reliable with respect to the assumption of no serial correlation.

Table 4.3 Heteroskedasticity Test

Heteroskedasticity Test: Glejser

F-statistic	15.66043	Prob. F(1,64)	0.0002
Obs*R-squared	12.97493	Prob. Chi-Square(1)	0.0003
Scaled explained SS	25.35507	Prob. Chi-Square(1)	0.0000

Source: Eviews 10 Output (2025)

The **Heteroskedasticity Test**, shown in **Table 4.3**, employs the Glejser test to examine whether the variance of the error terms is constant (homoskedasticity) or varies across observations (heteroskedasticity). Homoskedasticity is crucial because heteroskedasticity can lead to inefficient estimates and biased standard errors, affecting hypothesis testing. The Glejser test produces a very small probability value (Prob. F(1,64)) of 0.0002, which is well below the 0.05 threshold. This indicates strong evidence of heteroskedasticity in the model residuals, suggesting that the variance of the errors is not constant across observations. As a result, corrective measures such as robust standard errors is necessary to obtain valid inference. This justifies the use of robust least square regression in this estimation.

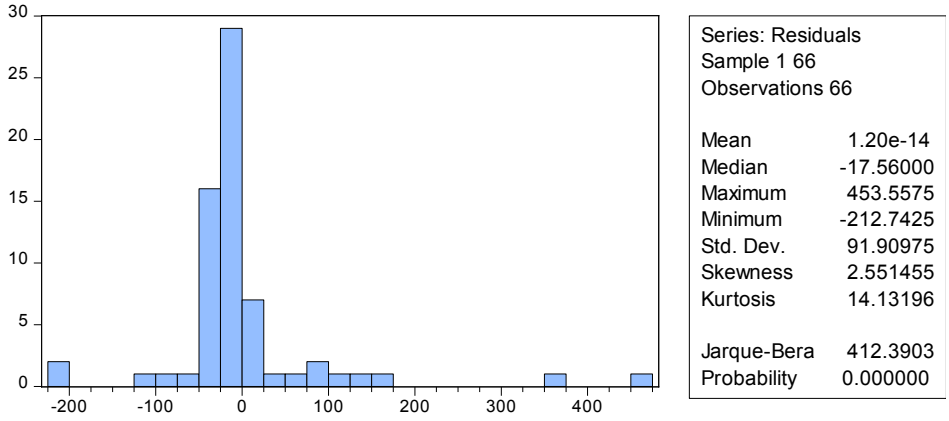

Figure 4.1 Normality Test

Source: Eviews 10 Output (2025)

The **Normality Test**, depicted in **Figure 4.1**, utilizes the Jarque-Bera statistic to assess whether the residuals from the regression model follow a normal distribution. Normality of residuals is an important assumption for many inferential procedures, especially for small samples, as it ensures the validity of t-tests and F-tests. The probability of the Jarque-Bera statistic is 0.0000, indicating a rejection of the null hypothesis that the residuals are normally distributed. This non-normality suggests that the model residuals deviate significantly from a normal distribution, which could potentially impact the reliability

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of statistical tests based on normality assumptions. This justifies the use of robust least square regression in this estimation to address the issue of non-normality.

4.3 Hypothesis Testing

Ha: Carbon management disclosure (proxy by greenhouse gas emission disclosure) has a positive influence on firm value (proxy by share price) in the Nigerian energy sector

Table 4.4 Hypothesis Test

Dependent Variable: Share_Price
Method: Robust Least Squares
Date: 04/30/25 Time: 13:41
Sample: 2014 2024
Included observations: 66
Method: M-estimation
M settings: weight=Bisquare, tuning=4.685, scale=MAD (median centered)
Huber Type I Standard Errors & Covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
GHGED	200.5120	4.826496	41.54401	0.0000
C	11.56949	2.058025	5.621647	0.0000
	Robust Statistics			
R-squared	0.071977	Adjusted R-squared		0.057477
Rw-squared	0.953363	Adjust Rw-squared		0.953363
Akaike info criterion	143.3760	Schwarz criterion		148.8467
Deviance	25849.59	Scale		13.56560
Rn-squared statistic	1725.905	Prob(Rn-squared stat.)		0.000000

Source: Eviews 10 Output (2025)

Table 4.4 presents the results of the Robust Least Squares regression examining the effect of carbon management disclosure, proxied by greenhouse gas emission disclosure (GHGED), on firm value, proxied by share price, in the Nigerian energy sector. The model validity statistics indicate that the Adjusted R-squared is 0.0575, meaning approximately 5.75% of the variation in share price is explained by the carbon management disclosure variable in this model. While this percentage may seem low, it is common in financial market studies due to numerous external factors affecting share prices. The overall model is statistically significant as evidenced by the p-value of the likelihood ratio test (Prob(Rn-squared stat.)) being 0.0000, which is well below the 5% significance threshold. This confirms that the model, collectively, has explanatory power for variations in firm value in the Nigerian energy sector.

The constant term (intercept) in the model is 11.5695 and is statistically significant with a p-value of 0.0000. This coefficient represents the baseline average share price when the greenhouse gas emission disclosure is zero—that is, when firms do not disclose GHG emissions, the average expected share price stands at about 11.57 units. The significance of the constant term indicates that even in the absence of carbon management disclosure, there is a statistically meaningful average share price for firms in the sector.

The coefficient for carbon management disclosure (GHGED) is 200.5120 with a p-value of 0.0000, indicating a statistically significant effect at the 5% level. This means that carbon management disclosure has a positive and meaningful effect on firm value as measured by share price in the Nigerian energy sector. Specifically, the coefficient shows the marginal effect of GHG emission disclosure on share price: ceteris paribus, a one-unit increase in the disclosure index (which here means full disclosure compared to no disclosure) is associated with an increase of approximately 200.51 units in the firm's share price. Since the disclosure is coded between 0 and 1, this essentially means firms that fully disclose their greenhouse gas emissions tend to have share prices that are on average 200.51 units higher than those that do not disclose at all, holding other factors constant.

Given the highly significant p-value, this positive effect is statistically robust, suggesting that investors value transparency and environmental responsibility in the Nigerian energy sector, rewarding firms that engage in better carbon management disclosure with higher share prices. Summarily, carbon management disclosure (proxy by greenhouse gas emission disclosure) has a significant positive influence on firm value (proxy by share price) in the Nigerian energy sector ($\beta = 200.5120$, $p = 0.0000$).

4.4 Discussion of Finding

The finding that greenhouse gas (GHG) emission disclosure significantly and positively influences firm value, as measured by share price, within Nigeria's energy sector can be explained by the increasing integration of environmental

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accountability into investor decision-making and stakeholder trust frameworks. Transparent carbon management disclosure sends a strong signal to the market that a firm is proactively managing environmental risks and aligning with global sustainability standards. This level of disclosure reduces information asymmetry, reassures investors of the company's long-term viability, and potentially lowers its perceived risk. Several empirical studies align with the finding that GHG emission disclosure enhances firm value. For example, Habibullah et al. (2025) found that carbon disclosure significantly improves corporate valuation in Indonesian mining firms, suggesting a cross-sectoral consistency in how transparency boosts market confidence. Similarly, Triasma and Sari (2025) observed that transparent carbon emission reporting fosters investor trust, operational efficiency, and long-term financial benefits—mirroring the Nigerian case. Okike et al. (2024) also reported a significant positive link between emission disclosures (carbon, nitrogen, and sulphur) and market value added among Nigerian oil and gas firms, reinforcing the value relevance of environmental transparency. Furthermore, Nwokeogu et al. (2024) highlighted that carbon emission control strategies significantly enhance return on assets, offering additional confirmation of the financial benefits of environmental responsibility. Obafemi and Oyedepo (2024) reported a significant positive relationship between carbon accounting and firm performance, highlighting that sustainability efforts can integrate with governance practices to strengthen business outcomes. Maharani et al. (2024) supported this trend by showing that carbon disclosure improves firm valuation in the Indonesian context, while Adekanmi et al. (2024) found that carbon management practices significantly boost wealth creation in Nigeria's financial services sector.

However, not all studies were in agreement. Fawzyputr et al. (2025) found no significant relationship between carbon disclosure and firm value in Indonesian energy firms, possibly reflecting industry-specific or regional differences. Additionally, Agbo et al. (2024) reported a negative association between greenhouse gas disclosures and market-to-book ratio, suggesting that in some contexts, disclosures may reveal liabilities or increase perceived regulatory risk. Lastly, Olawale (2023) found a positive but statistically insignificant impact of carbon disclosures on firm value in Finland, indicating that market responses to such disclosures may vary based on regional regulatory frameworks and investor preferences.

4.5 Robustness Test Using Control Variables

Two control variables (firm size and leverage) were added to the model to reduce the impact of variable omission bias since literature has established apparently that these attributes of a firm could influence its share price. Hence, we estimated the model below for robustness analysis:

$SPit = \beta_0 + \beta_1 GHGEDit + FSZit + LEVit + \varepsilon it$

The equation model above was to assess the joint influence of carbon management and control variables on share price.

Table 4.5 Robustness Test With Control Variables

Dependent Variable: SHARE_PRICE
Method: Robust Least Squares
Date: 06/20/25 Time: 00:03
Sample: 2014 2024
Included observations: 66
Method: M-estimation
M settings: weight=Bisquare, tuning=4.685, scale=MAD (median centered)
Huber Type I Standard Errors & Covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
GHGED	191.4770	5.235989	36.56940	0.0000
FSZ	11.54075	5.378655	2.145657	0.0319
LEV	-10.25505	3.599151	-2.849297	0.0044
C	-68.22266	40.94654	-1.666140	0.0957

Robust Statistics

R-squared	0.114639	Adjusted R-squared	0.071799
Rw-squared	0.957897	Adjust Rw-squared	0.957897
Akaike info criterion	132.1912	Schwarz criterion	144.9312
Deviance	29424.39	Scale	15.15152
Rn-squared statistic	1966.978	Prob(Rn-squared stat.)	0.000000

Source: Eviews 10 Output (2025)

Table 4.5 presents the robustness test results for the effect of greenhouse gas emission disclosure (GHGED), firm size (FSZ), and leverage (LEV) on share price using robust least squares estimation. The adjusted R-squared value of 0.0718 indicates that the model explains approximately 7.2% of the variation in share prices across the sampled firms. Though relatively low, this is typical in financial cross-sectional data where many external factors influence share price. Importantly, the robust estimation method was used to mitigate the influence of outliers and heteroscedasticity, increasing confidence in the reliability of the coefficients. The constant (intercept) has a coefficient of -68.223 with a p-value of 0.0957, which implies it is

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not statistically significant at the 5% level. This suggests that, in the absence of the independent and control variables, the model does not predict a statistically meaningful share price baseline.

The coefficient of greenhouse gas emission disclosure (GHGED) is 191.4770, and the associated p-value is 0.0000, indicating a highly significant effect at the 5% level. This means that when firms disclose more about their greenhouse gas emissions (from 0 to 1, i.e., no disclosure to full disclosure), their share price increases by approximately ₦191.48. The large marginal effect implies that carbon disclosure acts as a valuable signal to the market, enhancing investor perception and firm valuation. The statistically significant result confirms that GHG disclosure is not just a symbolic act but materially influences firm value in the Nigerian energy market.

Firm size (FSZ), measured as the natural log of total assets, has a coefficient of 11.541 with a p-value of 0.0319, indicating a statistically significant effect at the 5% level. This suggests that for every one-unit increase in the natural log of a firm's total assets, its share price increases by about ₦11.54, holding other factors constant. This marginal effect confirms that larger firms, often perceived as more stable and resource-rich, enjoy higher market valuation. It validates the role of firm size as an internal structural attribute that positively affects how the market prices a company's shares.

Leverage (LEV) has a coefficient of -10.2551 with a p-value of 0.0044, signifying a statistically significant negative effect at the 5% level. This indicates that a one-unit increase in the leverage ratio (liabilities to total assets) leads to a ₦10.26 decrease in share price, all else being equal. The negative marginal effect implies that higher financial risk, as captured by leverage, is penalized by the market. Investors likely view highly leveraged firms as riskier, which depresses their share price. This confirms leverage's role as a control factor in determining firm value and aligns with financial theory on capital structure.

4.5.1 Discussion

The finding that firm size has a positive and significant effect on share price ($\beta = 11.54075$; $p = 0.0319$) is strongly supported by several empirical studies in the Nigerian context. Jeroh (2020) confirmed that firm size, proxied by total assets, significantly influenced share price and Tobin's Q among listed financial service firms, suggesting that asset accumulation enhances market valuation. Similarly, Shuaibu, Ali, and Amin (2019) found that firm size had a positive and significant effect on firm value in the consumer goods sector, reinforcing the notion that larger firms benefit from economies of scale, operational efficiency, and greater investor confidence. Abba and Usman (2016) also reported a positive and significant relationship between firm size and share price in the pharmaceutical sector, implying that market participants associate larger size with lower risk and stronger fundamentals. Although Najaatu (2019) did not specifically test firm size, her findings showed that other structural firm attributes, such as board size and diversity, positively influenced share price—indirectly validating the importance of organizational scale and composition in determining firm value.

The finding that leverage has a negative and significant effect on share price ($\beta = -10.25505$; $p = 0.0044$) also finds support in multiple prior studies. Jeroh (2020) found that leverage had a negative correlation with share price and share price-to-book value, indicating that higher debt exposure may undermine investor confidence and depress market value. Similarly, Shuaibu, Ali, and Amin (2019) observed a positive but statistically insignificant relationship between leverage and firm value, implying that while moderate debt might not be harmful, it does not significantly boost valuation either. Abba and Usman (2016), on the other hand, reported a positive and significant relationship between leverage and share price in the pharmaceutical sector, which contrasts with the present study's finding. This suggests that the effect of leverage may be sector-sensitive, with capital-intensive sectors potentially benefiting more from debt financing. Nonetheless, the present result aligns more closely with Jeroh (2020) and offers further empirical backing for the view that excessive leverage introduces financial risk that investors may penalize through reduced share prices.

Conclusion and Recommendations

Firms—particularly those operating in environmentally sensitive sectors like energy—are expected to adopt proactive carbon management strategies and disclose their environmental performance transparently. Globally, such disclosures have evolved into a vital component of corporate governance and sustainability practices. Ideally, companies should voluntarily report their carbon emissions, mitigation efforts, and environmental impact using internationally recognized frameworks such as the Global Reporting Initiative (GRI), the Carbon Disclosure Project (CDP), or the Task Force on Climate-related Financial Disclosures (TCFD). These disclosures are designed not only to fulfill environmental accountability but also to enhance firm value by boosting investor confidence, lowering perceived risk, and signaling long-term strategic foresight. In well-regulated markets, carbon transparency is seen as a value-enhancing signal that aligns corporate practices with the expectations of socially responsible investors and stakeholders.

The demonstrated positive influence of carbon management disclosure on firm value within Nigeria's energy sector signals a structural evolution in the capital market's valuation criteria. Share prices reflecting greater responsiveness to greenhouse gas (GHG) emission transparency imply that environmental stewardship is becoming embedded within investor decision-making frameworks. This indicates that the market is not merely reacting to profitability or short-term financial metrics but is increasingly pricing in sustainability-related information as a marker of long-term risk resilience and strategic alignment. Particularly in a sector like energy—historically perceived as environmentally intensive—the act of voluntarily disclosing carbon emissions may be interpreted as a signal of corporate integrity, forward-looking governance, and adaptive capacity to global climate pressures. In this context, disclosure becomes not just an act of compliance but a competitive differentiator that enhances market credibility and attracts long-term capital. In conclusion, in today's capital markets, transparency in carbon management is no longer peripheral—it is central to value creation, reputation management, and sustainable corporate performance.

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We recommend that the Nigerian Securities and Exchange Commission (SEC), in collaboration with the Financial Reporting Council of Nigeria (FRCN), should institutionalize a mandatory and standardized framework for greenhouse gas emission disclosure among listed energy companies. Given the demonstrated positive impact of carbon management transparency on firm value, enforcing uniform disclosure practices will not only enhance investor confidence but also ensure comparability, consistency, and credibility of environmental data across the sector.

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Appendix A Data Presentation

Firm	Year	G305_1	Share Price	Asset	Liabilities	FSZ	LEV
Totalenergies Marketing Nig	2014	0	142.50	95512428	79582258	7.98	.83
Totalenergies Marketing Nig	2015	1	147.01	83653555	67411074	7.92	.81
Totalenergies Marketing Nig	2016	1	299.00	136928160	113358063	8.14	.83
Totalenergies Marketing Nig	2017	1	229.95	107981873	79756322	8.03	.74
Totalenergies Marketing Nig	2018	1	203.00	132520783	101789895	8.12	.77
Totalenergies Marketing Nig	2019	1	110.90	133787731	105467947	8.13	.79
Totalenergies Marketing Nig	2020	1	130.00	143612885	115461906	8.16	.80
Totalenergies Marketing Nig	2021	1	221.90	208728966	167109661	8.32	.80
Totalenergies Marketing Nig	2022	1	193.00	307815723	257528913	8.49	.84
Totalenergies Marketing Nig	2023	1	385.00	375115673	319037931	8.57	.85
Totalenergies Marketing Nig	2024	1	670.00	471122676	396041638	8.67	.84
OandO	2014	0	15.39	277958523	253673093	8.44	.91
OandO	2015	0	4.00	289815683	243625225	8.46	.84
OandO	2016	0	4.66	208279221	190169594	8.32	.91
OandO	2017	0	5.99	213845118	224353233	8.33	1.05
OandO	2018	0	4.95	236366708	297266276	8.37	1.26
OandO	2019	1	3.70	223142393	351924683	8.35	1.58
OandO	2020	0	3.28	182270518	356362027	8.26	1.96
OandO	2021	0	4.73	210514305	412730210	8.32	1.96
OandO	2022	1	3.85	316559668	560435514	8.50	1.77
OandO	2023	0	11.65	414934552	875007848	8.62	2.11
OandO	2024	0	68.40	153389512	501656184	8.19	3.27
MRS Oil Nigeria Plc.	2014	0	37.44	57846626	37628505	7.76	.65
MRS Oil Nigeria Plc.	2015	0	36.99	66893741	45916417	7.83	.69
MRS Oil Nigeria Plc.	2016	0	30.43	81364815	59200974	7.91	.73
MRS Oil Nigeria Plc.	2017	0	20.33	62190318	39080821	7.79	.63
MRS Oil Nigeria Plc.	2018	0	22.84	54283202	33562504	7.73	.62
MRS Oil Nigeria Plc.	2019	0	13.60	44209648	25102032	7.65	.57
MRS Oil Nigeria Plc.	2020	0	12.22	36659094	19815623	7.56	.54
MRS Oil Nigeria Plc.	2021	0	10.98	37205315	20021971	7.57	.54
MRS Oil Nigeria Plc.	2022	0	14.10	40526114	22026668	7.61	.54
MRS Oil Nigeria Plc.	2023	0	126.00	54831289	32220057	7.74	.59
MRS Oil Nigeria Plc.	2024	0	162.90	105773167	77464115	8.02	.73
Japaul Gold & Ventures Plc	2014	0	.50	38188346	24144662	7.58	.63
Japaul Gold & Ventures Plc	2015	0	.50	35022430	27970019	7.54	.80
Japaul Gold & Ventures Plc	2016	0	.50	39028011	53694793	7.59	1.38
Japaul Gold & Ventures Plc	2017	0	.50	29054179	54320231	7.46	1.87
Japaul Gold & Ventures Plc	2018	0	.21	25620332	56936605	7.41	2.22
Japaul Gold & Ventures Plc	2019	0	.20	26937080	17557227	7.43	.65
Japaul Gold & Ventures Plc	2020	0	.62	18776757	9858507	7.27	.53
Japaul Gold & Ventures Plc	2021	0	.40	17517415	11599800	7.24	.66
Japaul Gold & Ventures Plc	2022	0	.28	8772295	11587723	6.94	1.32
Japaul Gold & Ventures Plc	2023	0	2.62	9890844	13106199	7.00	1.33

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Japaul Gold & Ventures Plc	2024	0	2.13	27856062	13858889	7.44	.50
Eterna Plc.	2014	0	2.98	18048814	10036967	7.26	.56
Eterna Plc.	2015	0	2.05	27846708	18583917	7.44	.67
Eterna Plc.	2016	0	3.10	31101289	20649982	7.49	.66
Eterna Plc.	2017	0	4.06	47154881	35046815	7.67	.74
Eterna Plc.	2018	0	4.70	52699441	39999691	7.72	.76
Eterna Plc.	2019	0	3.60	28310175	15985065	7.45	.56
Eterna Plc.	2020	0	5.10	35792315	22449689	7.55	.63
Eterna Plc.	2021	0	5.05	46080961	33947295	7.66	.74
Eterna Plc.	2022	0	6.69	54138536	40847165	7.73	.75
Eterna Plc.	2023	0	21.95	60462816	56635263	7.78	.94
Eterna Plc.	2024	0	27.60	67930303	62419391	7.83	.92
Conoil Plc	2014	0	38.11	87526687	71430640	7.94	.82
Conoil Plc	2015	0	24.74	69387365	51677712	7.84	.74
Conoil Plc	2016	0	37.48	69833464	51367783	7.84	.74
Conoil Plc	2017	0	28.00	62855084	44962148	7.80	.72
Conoil Plc	2018	0	23.25	60897246	42596172	7.78	.70
Conoil Plc	2019	0	18.50	63584866	44117128	7.80	.69
Conoil Plc	2020	0	20.85	48864665	29344646	7.69	.60
Conoil Plc	2021	0	22.00	53981346	32191978	7.73	.60
Conoil Plc	2022	0	26.50	65909238	40897024	7.82	.62
Conoil Plc	2023	0	83.90	97477977	64332404	7.99	.66
Conoil Plc	2024	0	387.20	113570001	71463451	8.06	.63

Source: Firms' Annual Reports (2014-2024)