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Accounting for Carbon Commitments: A Critical Inquiry Into the Discrepancy Between Net-Zero Claims and Emission Accounting Practices in Global Corporations

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Abstract

This research explores the growing divide between the public promises made by global corporations under their net‐zero emissions targets and the practical realities of carbon accounting. The study investigates whether corporate climate disclosures represent genuine efforts to reduce environmental harm or serve as strategic tools to enhance reputation while masking underlying failures. Drawing on a qualitative synthesis of fifty peer‐reviewed journal articles from 1985 to 2022, the paper examines patterns in emissions measurement, carbon offset reliance, and disclosure practices. The findings reveal that many firms depend predominantly on carbon offsetting strategies rather than substantive emissions reduction and

that disclosures often lack in transparency and independent verification tend to serve a symbolic purpose. The study further discusses the evolving role of accounting professionals in ensuring climate accountability and the need for strengthened reporting standards and assurance practices to restore stakeholder trust. Implications for regulators, practitioners, and policymakers are discussed, along with recommendations for reforming both corporate carbon accounting frameworks and the assurance mechanisms that underpin sustainability reporting.

Keywords: Critical accounting, Carbon offsets, ESG, Climate governance, Assurance, Accountability, Legitimacy, Emission disclosures

1. Introduction

Corporate environmental responsibility has emerged as a critical component of sustainable development in the context of the global climate crisis. As concerns over climate change intensify and societal expectations of accountability rise, companies increasingly commit to net‐zero emissions targets (Fankhauser et al., 2022; UNFCCC, 2021). These targets are often presented as milestones in a company's journey toward environmental sustainability. However, a growing body of literature questions whether these net-zero claims indicate genuine efforts to reduce emissions or merely function as strategic signals to enhance corporate reputation and maintain legitimacy in the eyes of investors, regulators, and the public (Boiral, 2013; Hsueh and Griffiths, 2021; Simnett and Huggins, 2015).

Over the past decade, numerous high-profile cases—including those of major industrial conglomerates have illustrated the discrepancy between public climate promises and on‐ground emissions reduction (Eccles et al., 2020; Kotsantonis and Serafeim, 2019). In many instances, corporations disclose ambitious long-term targets while relying on carbon offset projects and selective reporting practices that understate true environmental impact (Anderson and Peters, 2016; Greenwashing, 2020). This situation has generated intense academic and policy debate regarding the role of carbon accounting as both a technical measurement tool and a mechanism for institutional legitimacy (Larrinaga and Perego, 2021; Gray et al., 1996).

The objective of this research is to critically examine the practices of carbon accounting within global corporations, assessing how these practices support—or undermine—the credibility of their net-zero commitments. By synthesizing fifty peer-reviewed studies from leading journals, the paper seeks to untangle the complex relationship between reported emissions, the use of offsets, and the methodologies employed in disclosure practices (Schaltegger and Burritt, 2010; Andrew and Cortese, 2011). In addition, this research explores the theoretical underpinnings provided by legitimacy theory, accountability theory, and critical accounting approaches (Deegan, 2002; Roberts, 1991; Cooper and Morgan, 2008). Through this framework, the study interrogates the rhetorical strategies used in corporate climate reporting and discusses the implications of such practices for environmental governance.

Two central research questions guide this investigation:

1. How do current carbon accounting practices enhance or erode the credibility of

net‐zero claims in global corporations?

2. What are the broader implications of these practices for accounting professionals, regulatory bodies, and stakeholders who demand meaningful accountability in climate disclosures?

In addressing these questions, the paper contributes to the literature by offering a critical lens on corporate climate disclosures highlighting the prevalence of "greenwashing" tactics and the limitations of current assurance practices (Cho et al., 2012; Bowen, 2014). Furthermore, the study underscores the critical role that accounting professionals play in providing independent scrutiny of emissions data and the need to redefine corporate disclosure norms to align financial reporting with the imperatives of climate responsibility (Sullivan and Gouldson, 2017; Adams, 2004).

The structure of the manuscript is as follows. Section 2 provides a comprehensive literature review that traces the evolution of carbon accounting and the associated challenges, such as selective disclosure and offsetting. In Section 3, the theoretical framework is shown, using its legitimacy, accountability and critical accounting theories in order to provide a basis for the analysis. Section 4 details the methodological process that had been taken, which is qualitative in nature. Section 5 explores the findings in detail as it explains the symbols of net-zero, committals of the substantive nature, the carbon offset effects and the role played by assurance in corroborating disclosures. Finally, Section 6 concludes with down-to-earth ideas from regulators and practitioners that should increase the quality of the integrity.

By critically analyzing the relationship between corporate communication with carbon accounting, in this paper, there is the desperate need for more transparency and standardization practices, and involvement of active stakeholders in climate reporting. It advocates shying away from gestures that are but a symbol of responsible environmental undertakings that will ensure long term environmentally friendly results, sustainability and build public trust.

2. Literature Review

2.1 Evolution of Carbon Accounting and Climate Reporting

The growth of carbon accounting as a corporate responsibility tool has seen tremendous changes in the last two decades primarily triggered by the increasing global concerns on matters regarding climate change. The introduction of Greenhouse Gas (GHG) Protocol by the World Business Council for Sustainable Development and the World Resources Institute (WBCSD & WRI, 2004) was a key point in the topic development. Through this protocol, emissions were standardized and divided into three scopes, direct emissions that occur in one's facilities (Scope 1), indirect emissions caused by energy consumed in one's facilities (Scope 2) and other indirect emissions occurring in the operating chain.

Despite its global adoption, application of the GHG Protocol has been uneven. Many companies, particularly in the retail and financial sectors, omit Scope 3 emissions from public reporting despite these often comprising the majority of their emissions (Downie & Stubbs,

2013). This selective disclosure limits comparability across firms and undermines the credibility of reported figures. Efforts such as integrated reporting frameworks, spearheaded by bodies like the International Integrated Reporting Council (IIRC), have attempted to merge sustainability with financial disclosure. Yet scholars argue that these frameworks frequently reduce complex environmental issues to check-the-box compliance (Flower, 2015), failing to drive deep organizational change.

2.2 Greenwashing and the Credibility of Net-Zero Claims

One of the major issues that arise in the literature is that there are many corporate net-zero promises, functioning more like reputational tools rather than a real strategy for a reduction of emissions. The practice this greenwashing - where companies give out an impression of environmental accountability yet do not fulfill it sustaining the unsustainable operations - is well established (Delmas & Burbano 2011). These disclosures typically tend to use ambiguous language, non-specific goals, and statistics of ambitious numbers excessive reliance of carbon offset mechanisms.

In fact, the term “net zero” has come to become a symbolic reference point, which corporations often employ, make long-term intentions on climate including, achieving neutrality by 2050. However, these targets are almost never accompanied by intermediate, science-based milestones (Lyon, & Montgomery, 2015). As an outcome, such forward-looking statements usually tend to postpone substantial structural transformation. In addition, the high use of offsetting where companies buy carbon credit - its lack of rigor has attracted a lot of criticism, especially the fact that it allows countries to rely on credits instead of cutting their emissions. Doubts remain on the validity of these offsets, especially on the additionality of such offsets, durability, and openness (Kollmuss et al., 2008; Cames et al., 2016). These gaps allow companies to maintain their net-zero claims despite there being no clear accountability or tracking as regards actual emissions mitigated.

Scholars go further to assert that net-zero statements tend to be used as a façade of “organizations” management” (Cho et al., 2015). Corporations construct sustainability narratives that highlight their positive environmental actions while downplaying or rationalizing shortcomings, aligning these stories with their broader strategic image. This growing dysfunction between rhetoric and actual performance carries huge implication to public confidence and regulatory scrutiny.

2.3 Legitimacy and Accountability in Sustainability Reporting

Legitimacy theory is useful in shedding light on what lies behind such corporate climate disclosures. As Suchman (1995) claims in the definition of legitimacy, the organization receives it when their actions are seen as proper in the wider social setting. Under this perspective, the environmental disclosures are usually not simply a means of informing but aim at fulfilling the normative expectations of major stakeholders. Empirical studies (e.g., Deegan, 2002; Michelon et al., 2015) showed that companies enlarge the range of their sustainability reporting during times of reputational stress, supporting the assumption that such reports are rather devices to maintain their legitimacy than an establishment of actual

performance.

On the other hand, unlike accountability theory as explained by Roberts and Scapens (1985), there is a need for open, verifiable and comprehensive information that can be used by stakeholders to evaluate a firm's actions in a critical manner. Nevertheless, there is a lingering pull between the two conflicting desires to undertake actual accountability tasks while remaining in a good light of public perception. Statements of "limited assurance" become common for companies in emissions disclosures engagements that basically only acknowledge the existence of data, not the accuracy of the data or its completeness (Simnett et al., 2009).

This friction is further exacerbated by the manipulation of language and numerical metrics applied on sustainability reports. While organizations try to be responsive to demands in society, they often use practices like "boundary manipulate"-selectively taking in or rejecting data to create an improved emissions profile (Downie & Stubbs, 2013). Such moves can emasculate the credibility of disclosures and the actual state of a firm's environmental impact.

2.4 The Functions and Criticisms of Carbon Offsets

Carbon offsets are intended to provide a way for companies to compensate for emissions that cannot be eliminated internally. In theory, offsets should represent verifiable emissions reductions that would not have occurred without external funding. However, a substantial body of research questions the effectiveness of many offset programs. Gupta and Mason (2014) argue that many projects fail the additionality test, meaning they would have taken place even without the investment.

Permanence is another issue, especially for nature-based offsets such as afforestation, which are vulnerable to risks like wildfires or deforestation (Cames et al., 2016). Moreover, a lack of transparency and the risk of double-counting where both the buyer and provider claim the same reduction further diminish their credibility (Michaelowa, Hermwille & Weber, 2019). Collectively, these issues challenge the integrity of net-zero commitments based primarily on offsetting rather than real operational change.

2.5 Assurance and the Credibility of Emissions Reporting

External Assurance is intended to enhance the credibility of environmental disclosures. However, current practices show considerable variation in both quality and scope. Most assurance engagements related to carbon disclosures are limited in nature, focusing only on verifying the presence of data rather than its accuracy or completeness (Simnett et al., 2009; Huggins, Green & Simnett, 2011). Furthermore, when assurance providers also offer consulting services to the same clients, it raises concerns about independence and objectivity (O'Dwyer, Owen & Unerman, 2011).

There is also a tendency to restrict assurance to Scope 1 and 2 emissions, leaving Scope 3 emissions largely unaudited despite their significance. These inconsistencies weaken stakeholder confidence in reported data and further widen the gap between appearance and reality.

2.6 Critical Accounting Views on Carbon Disclosure

The skeptic accountants' theorists challenge the idea of accounting being a neutral activity, or one that is apolitical. Instead, they argue that practices in accounting mirror and reproduce power structures of institutions, and work toward strategic purposes (Hines, 1988; Tinker et al., 1991). This observation is especially applicable to the sphere of carbon accounting because conclusions regarding what is to be measured, how to measure it, and how to report it are easily determined by managerial concerns and not guided by technical objectivity.

According to Bebbington et al. (2007), sustainability reports focus more on measurable indicators while ignoring more qualitative indicators such as social justice or ecological resilience. Consequently, critical environmental effects might get understated or relegated to be of secondary importance. This technocratic reductionism strengthens the ruling business stories while making reputation management strategies possible to override the long-term environmental accountability. Carbon disclosures tend to confirm, rather than to question, the status quo.

2.7 Summary and Research Gap

From a review of the literature, there is a repetitive tendency of symbolic compliance within the corporate climate disclosures. Although many companies now sign up to net-zero targets, there remains a huge chasm between such headline-grabbing commitments and the meaningful actions needed to cut emissions. Some of the major concerns are selective use of carbon offset, strategic boundary manipulation, poor assurance practices and the continuing dilemma on the quest for legitimacy and provision of accountability.

While a significant amount of scholarly work has been carried out examining these concerns in isolation, there is a glaring lack of scholarship on how these elements combine to give the credibility of corporate net-zero strategies. This paper fills that gap by applying multi-theoretical approach and an extensive account of the current carbon accounting practices.

3. Theoretical Framework

There are three theories underlying this research: altogether interrelated. The legitimacy theory, the accountability theory, and the critical accounting theory. Synthesized, these frameworks create a broad, multi-faceted optic by which to consider the gap between companies' net-zero pledges and the carbon counting that both enables, or conceals, them.

3.1 Legitimacy Theory

Suchman's (1995) legitimacy theory posits that for organizations, there exists a desire to align their activities to the broader society's values, norms and expectations in which the organizations operate. In the context of climate reporting, firms strive to legitimate themselves by creating disclosures that have an influence on the stakeholders' perception of responsibility. But this procedure is mostly strategic rather than pertinent. Firms may resort to "decoupling" as described by Meyer and Rowan (1977), as they take on forms of disclosure practices that suggest accountability, while carrying on with unsustainable behaviors cloak

and dagger. Empirical evidence shows how companies are likely to broaden the scope of their environmental reporting when operating in the environment of reputational risk and thus this reporting is often more symbolic than reflective of true operational change.

3.2 Accountability Theory

This is in contrary to legitimacy theory's external focus which focuses on accountability as an internal duty that organizations must produce transparent, credible, and understandable accounts of their actions. Roberts and Scapens (1985) believe that for accountability, there must be available to stakeholders consistent, complete and independently appraised information that enables stakeholders to determine corporate performance. In the context of carbon reporting the threat to accountability is when the companies report the selective data, when it uses voluntary reporting frameworks, and when it manipulates boundary. Although such procedural compliance may appear as responsibility, accountability calls for disclosures that are complete, unvaried and obtainable through strong, independent examination.

3.3 Critical Accounting Theory

Critical accounting theory questions the belief of the objectivity or neutrality of accounting practice. Classics like Hines (1988) and Tinker et al. (1991), argue that by nature, accounting is political and socially constructed, also influenced by powerful structures and institutional interests. In the context of carbon accounting, such a point of view opens the view of emission calculations and disclosure practices as non-technical decisions that are determined rather by managerial incentives, market regulations, and strategic considerations. Instead of merely being informational, the carbon disclosures present narrative tools influencing the perception of the stakeholder and sustaining those economic hierarchies.

3.4 Synthesis and Application

Combination of legitimacy, accountability and critical accounting theories allows for a depth analysis of net-zero bases and practices of reporting. The legitimacy theory gives an insight into public declarations of such ambitious climate targets that are typically used to seek approval from the stakeholders. In turn, accountability theory reveals the superficiality of numerous disclosures, pointing at the lack of tough control over the processes and the selective presentation of information. This critical accounting theory takes it further to see how these disclosures tend to reinforce managerial control and affirm dominant ideological tales.

This merger of the theoretical base not only highlights structural weaknesses of existing carbon accounting systems but also designates roads to reform. It sets up the conceptual scaffolding of the analysis that comes afterward, guaranteeing that the rhetorical functions and technical limitations of climate disclosures are subjected to critical analysis.

4. Methodology

4.1 Research Design

This work takes a qualitative literature-based approach to take a critical look at corporate

carbon accounting practices. Based on the interpretivist perspective, the research lays the focus on analyzing thematic and discursive patterns instead of numbering data. Performing a systematic review of 50 peer-reviewed journal articles that were published between the years 1985 to 2022, this study contributes the predominating trends, critiques, and gaps in the literature concerning the net-zero disclosures and carbon reporting.

This approach is in line with the tradition of the critical interpretive accounting research, which aims at exposing underlying assumptions and power rhetoric of the institution enrooted in corporate practices (Chua, 1986; Laughlin, 1995). The research questions probing is exploratory in nature aimed at understanding to what extent, the carbon accounting practice currently practiced reflects the actual decrease in emissions and the responsibility towards the environment.

4.2 Data Sources and Selection Criteria

For this research, the set of data involves fifty peer-reviewed journal articles collected in reputable academic databases such as Scopus, JSTOR, Emerald Insight, and Google Scholar. A Boolean keyword searched strategy was applied with combinations of such keywords as “carbon accounting,” “net-zero emissions,” “greenwashing,” “sustainability assurance,” and “ESG disclosures”. The inclusion criteria were as follows:

- English-language academic articles published between 1985 to 2022.
- Studies examined corporate net-zero disclosures, carbon offset practices, sustainability assurance, or environmental accounting standards.
- Articles employing relevant theoretical lenses such as legitimacy theory, accountability theory, or critical accounting theory.

Exclusion criteria included:

- Grey literature, policy briefs, and news articles.
- Papers focused solely on technical emissions modelling or scientific methodologies without a corporate accounting lens.

This selection strategy ensures that the analysis is grounded in academically rigorous and theoretically informed literature relevant to the research objectives.

4.3 Analytical Strategy

The chosen method of analysis was thematic content analysis (Braun & Clarke, 2006), combining both deductive and inductive coding approaches. The deductive element was guided by the theoretical framework laid out in Section 3, while inductive analysis allowed for emergent themes not pre-defined by the literature.

Each article was examined for content related to four major themes:

1. Symbolic versus Substantive Net-Zero Commitments
2. Carbon Offsets and Boundary Manipulation

3. Assurance and the Credibility of Emissions Reporting
4. Accounting and the Construction of Climate Legitimacy

Through coding and synthesis, the analysis aimed to expose the underlying practices and rationales that inform corporate environmental disclosures. Cross-referencing among articles helped identify consensus points, contradictions, and research gaps, ensuring a well-rounded and critical evaluation.

4.4 Trustworthiness

To strengthen the trustworthiness of this qualitative inquiry, several strategies were employed:

- Transparency in article selection and thematic coding.
- Triangulation of findings across multiple academic disciplines (accounting, sustainability, governance).
- Continuous alignment of empirical observations with theoretical constructions.

These strategies enhance the credibility and reliability of the study's interpretations and themes.

4.5 Ethical Considerations

As the research is based solely on publicly available academic literature, no human participants or proprietary data were involved, and thus formal ethics approval was not required. However, ethical research standards were upheld through accurate citation, fair representation of differing academic perspectives, and critical engagement with all sources.

The analysis was conducted with a commitment to academic integrity, transparency, and respect for the original contributions of the scholars cited throughout this study.

5. Findings and Discussion

5.1 Symbolic Versus Substantive Net-Zero Commitments

A dominant theme emerging from literature is the prevalence of symbolic net-zero commitments. While corporations increasingly frame climate targets as central to their strategic vision, many of these promises remain aspirational rather than operational (Lyon & Montgomery, 2015). The concept of "future-washing," wherein firms announce long-term goals (e.g., net-zero by 2050) without defining short- or medium-term milestones, has become widespread (Haack, Schoeneborn & Wickert, 2012).

Evidence suggests that such commitments are frequently detached from core business planning. Many companies highlight alignment with frameworks like the Paris Agreement yet continue unsustainable practices such as offset-heavy strategies or emissions boundary exclusions (Boiral, 2013; Cho et al., 2015). Internal targets often focus narrowly on Scope 1 and 2 emissions, leaving Scope 3 the most complex and material—underreported (Downie & Stubbs, 2013).

This behavior supports Milne and Gray's (2013) contention that net-zero pledges often function more as reputational tools than indicators of transformation. While effective for stakeholder appeasement, they risk delaying substantive emissions reductions.

Table 1 below summarizes the key differences between symbolic and substantive net-zero commitments, highlighting issues such as target horizon, language precision, scope of reporting, and the use of carbon offsets.

Table 1. Symbolic vs. Substantive Net-Zero Commitments

Dimension	Symbolic Commitment	Substantive Commitment
Target Horizon	Long-term targets (e.g., 2040–2050) without interim milestones	Science-based targets with clear short-, medium-, and long-term milestones
Language	Vague, ambiguous terms	Precise, operationalized definitions and metrics
Scope of Reporting	Focus on Scope 1 and 2 emissions; Scope 3 often omitted	Comprehensive inclusion of Scope 1, 2, and 3 emissions
Use of Offsets	Heavy reliance on offset mechanisms	Emphasis on direct emissions reduction with offsets as supplemental
Assurance and Verification	Limited external assurance	Robust, independent third-party verification
Integration into Strategy	Detached from core business planning	Embedded into governance, budgeting, and performance management

(Adapted from Boiral, 2013; Cho et al., 2015; Delmas & Burbano, 2011; Fankhauser et al., 2022; Milne & Gray, 2013)

The evidence suggests that the symbolic deployment of net-zero claims enables companies to maintain a façade of environmental responsibility. This façade, however, is inherently unstable, as it depends on superficial compliance rather than transformative change.

5.2 Carbon Offsets and Boundary Manipulation

Another major finding involves corporate reliance on carbon offsets as a primary mechanism

for meeting emissions goals. While offsets can provide a means to compensate for hard-to-reduce emissions, many are flawed in terms of additionality, permanence, and accountability (Gupta & Mason, 2014; Cames et al., 2016).

For example, afforestation projects used for offsetting are vulnerable to reversals through natural disasters, undermining their long-term climate benefits. Furthermore, offset programs often lack robust verification mechanisms, enabling instances of double-counting where both the offset provider and buyer claim credit for the same emissions reduction (Michaelowa, Hermwille & Weber, 2019).

Simultaneously, boundary manipulation is used to present a favorable emissions profile. The flexibility within the GHG Protocol allows firms to exclude high-emitting subsidiaries or selectively report Scope 3 emissions (Downie & Stubbs, 2013). This tactic sometimes labelled "reporting arbitrage" (Hopwood, 2009), enables firms to dilute their carbon footprint without actual performance improvement.

Table 2 provides an overview of the critical issues associated with carbon offsets and boundary manipulation.

Table 2. Critical Issues in Carbon Offsetting and Boundary Manipulation

Category	Description	Implication for Net-Zero Claims
Additionality	Projects would have occurred without offset funds	Offsets do not contribute to new emissions reductions
Permanence	Vulnerability of offsets to natural or operational reversals	Long-term climate benefits are not guaranteed
Double-counting	The same reduction claimed by multiple parties	Inflation of reduction achievements and distorted emissions data
Scope 3 Exclusion	Strategic omission or selective reporting of indirect emissions	Understates the true carbon footprint
Boundary Manipulation	Selective inclusion/exclusion of operations	Misleading representation of overall emissions reduction

(Adapted from Cames et al., 2016; Gupta & Mason, 2014; Kollmuss et al., 2008; Lohmann, 2009)

Collectively, these practices indicate that carbon offsets and boundary manipulation enable

firms to achieve a semblance of net-zero without addressing the fundamental drivers of emissions. In doing so, companies mitigate short-term reputational risks at the expense of long-term environmental integrity.

5.3 Assurance and Credibility of Emissions Reporting

A critical shortcoming in corporate climate disclosures lies in the quality of assurance provided. Although third-party verification is becoming more common, many companies still opt for limited assurance engagements, which offer superficial checks rather than in-depth verification (Simnett et al., 2009; Huggins, Green & Simnett, 2011).

Moreover, the independence of assurance providers is often compromised. Firms that deliver both assurance and consulting services to the same client may fall into client capture, thereby reducing critical scrutiny (O'Dwyer, Owen & Unerman, 2011). Compounding the problem is the frequent omission of Scope 3 emissions from assurance processes, which significantly diminishes the overall reliability of disclosures.

Table 3 outlines the main shortcomings of current assurance practices in sustainability reporting.

Table 3. Key Shortcomings of Assurance in Carbon Disclosures

Aspect	**Common Practice**	**Implication for Credibility**
Scope	Limited to Scopes 1 and 2; Scope 3 often unaudited	Incomplete verification of overall emissions
Level of Assurance	Predominantly limited assurance	Insufficient depth in assessing data reliability
Independence	Multi-service relationships between clients and assurers	Potential bias and lack of critical scrutiny
Methodological Rigor	Reliance on internal documentation and management data	Limited challenge of underlying assumptions
Transparency	Generic assurance statements without detailed methodology	Stakeholders lack the means to assess assurance quality

(Adapted from Simnett et al., 2009; Huggins et al., 2011; Perego & Kolk, 2012)

The available evidence suggests that, despite some progress in enhancing assurance practices, significant gaps remain that continue to undermine the credibility of carbon disclosures. Addressing these challenges will require more than stricter standards or regulatory oversight it calls for a fundamental re-evaluation of the role that assurance plays within the broader

context of sustainability reporting.

5.4 Accounting and the Construction of Climate Legitimacy

Carbon accounting is not just a technical affair. It is greatly enmeshed with the creation of corporate legitimacy. Using selective accounting techniques and strategic narratives, firms construct disclosures of being environmentally responsible and committed to the ethical front. Critical accounting scholars claim that such practices work effectively as mechanisms of symbolic governance companies can continue being legitimate without significant operations rearrangement (Hines, 1988; Tinker et al., 1991).

By deciding to report indicators such as emissions intensity instead of actual emissions, corporations can create an illusion of progress even when the overall levels of emission rise. This is made worse still by boundary manipulation which involves firms in previously excluding high emission activities from their reporting range. Those tactics establish a gap between reality and appearance of environmental performance; eventually, an image of sustainability is constructed there (Milne & Gray, 2013).

Moreover, many organizations implement standardized frameworks (Global Reporting Initiative (GRI), Task Force on Climate-related Financial Disclosures (TCFD), or Science Based Targets initiative (SBTi), mostly for the sake of the external legitimacy demands. Nevertheless, compliance with these frameworks does not necessarily mean that they can bring about accuracy in data and in bringing the integration of climate goals into core business strategy. Rather, there is an enduring zeal to meet stakeholder expectations by enunciating carefully glossed sustainability narratives that hide major turn oils in emissions governance.

It is in table 4 that an overview of how different accounting practices are used in building corporate climate legitimacy is given.

Table 4. Strategic Use of Accounting Practices in Constructing Climate Legitimacy

Mechanism	Description	Legitimacy Effect
Selective Metrics	Emphasis on emissions intensity, partial scopes	Creates an image of progress while concealing total impact
Boundary Setting Discretion	Exclusion of high-emission entities from disclosures	Facilitates reporting arbitrage and misleads stakeholders
Symbolic Framework Adoption	Use of popular standards without operational integration	Enhances reputational legitimacy without real change
Narrative Framing	Optimistic storytelling and forward-looking language	Reinforces perception of sustainability, masking

		trade-offs
Offset Use in Reporting	Inclusion of carbon offsets as equivalent to direct reduction	Maintains appearance of net-zero while deferring action

(Adapted from Hines, 1988; Hopwood, 2009; Milne & Gray, 2013)

Scholars claim that, if the carbon accounting spending is to evolve to more than a legitimacy-maintaining exercise, then it must be reconfigured as what will be emphasized is substantive environmental performance, rather than symbolic compliance. This entails more than greater transparency and accuracy in reporting; it is also a change in culture regarding how companies think about sustainability.

5.5 Implications for Practice and Policy

The implications of this review on practice and policy are quite significant. Practicably, persistence in symbolic disclosures and doubtful offset mechanisms is an indication of how dire the need for companies to focus on measurable, outcome-driven sustainability initiatives is. Instead of relying on external offset purchases, firms will need to prioritize internal operation modification that would result in authentic emissions reductions.

From the governing areas, regulators and standard setting bodies are encouraged to enforce broader and more tightened reporting architectures. The mandatory disclosure of Scope 3 emissions and the adoption of independent, reasonable assurance for all key emissions data would represent a serious step up. In addition, the standardization of standards used to carry out carbon offsets and incorporation of sustainability reporting in the sphere of financial audits might be able to correct the problem of credibility that repeatedly occurs in corporate climate disclosures.

Accounting professionals play a crucial role in actualization of these reforms. As keepers of both fiscal and non-fiscal facts, accountants and auditors will need to be armed with technical skills, ethics-based understanding to demand full and accurate sustainability reports in place of shallow or misleading ones. They are central in promoting transparency, comparability, and integrity of environmental disclosures.

It is also necessary for a change in approach and moving towards a stakeholder-oriented reporting model, one that does not only reflect quantitative metrics but also qualitative impacts of climate change on affected communities and ecosystems. Such a holistic approach would realign sustainability reporting to need for real accountability so that firms can work to remedy the sources of emissions rather than simply meeting external compliance expectations.

6. Conclusion Research Limitations and Recommendations

6.1 Conclusion

This research critically examined the persistent gap between net-zero claims and the actual carbon accounting practices adopted by global corporations. Drawing upon insights from fifty peer-reviewed academic sources, the analysis identified systemic shortcomings that undermine the credibility of corporate climate commitments. Although net-zero pledges are promoted as symbols of environmental responsibility, they frequently serve as strategic tools for reputational management rather than genuine pathways to emissions reduction.

The study found that corporations often rely heavily on carbon offsetting and organizational boundary manipulation to project a more favorable emissions profile. These practices, when combined with limited assurance standards, contribute to a widening credibility gap in sustainability disclosures. From a critical accounting perspective, such patterns reflect deep-rooted institutional dynamics that sustain the status quo, allowing corporations to appear compliant with climate imperatives while deferring substantive operational transformation.

In essence, contemporary carbon accounting often perpetuates a sustainability façade providing surface-level legitimacy while masking the lack of meaningful progress. This disjuncture between declared aspirations and actual outcomes not only compromises global climate targets but also undermines stakeholder trust in corporate environmental reporting.

6.2 Limitations and Future Research

Despite its methodological rigor, the study has limitations. The exclusive reliance on secondary data restricts access to real-time corporate motivations and behind-the-scenes decision-making processes. Furthermore, the focus on English-language publications may introduce linguistic and geographic bias, potentially omitting valuable insights from non-English academic literature.

Future research could address these limitations by incorporating primary data sources such as interviews with corporate sustainability officers or regulators. Additionally, cross-linguistic analyses of non-English disclosures and studies could broaden the geographical scope and deepen understanding of diverse carbon accounting frameworks. Investigating how evolving regulatory regimes such as mandatory climate disclosures affect corporate practices will also be a fruitful direction for subsequent inquiry.

6.3 Recommendations

For improving the reliability and the effect of corporate climate disclosures, this study suggests the following recommendations:

6.3.1 Mandate Comprehensive Carbon Reporting

Governments and international bodies should compel corporations to adopt rigorous carbon accounting standards like those created by the International Sustainability Standards Board (ISSB) and to disclose all the Scope 1, 2, and 3 emissions. A gradual elimination of fragmented or selective reporting should be carried out with the help of legal and institutional

measures (Fankhauser, Smith & Allen, 2022).

6.3.2 Increase the Quality of Carbon Offsets

Offset programs need to be under strict standards that ensure that they are additional, permanent, and transparent. The certification should be performed independently by the third parties, based on the internationally recognized protocols, to avoid double-counting and the overstated claims (Gupta & Mason, 2014; Cames et al., 2016).

6.3.3 Strengthening Assurance Mechanisms

Companies should transition from limited to reasonable assurance engagements for all material environmental disclosures. Assurance providers must be independent of consulting or advisory relationships with their clients, to reduce bias and improve scrutiny (O'Dwyer, Owen & Unerman, 2011; Huggins et al., 2011).

6.3.4 Embed Sustainability in Core Business Strategy

Net-zero targets must move beyond symbolic declarations and be integrated into strategic planning, budgeting, and performance management. Linkages between emissions reduction goals and executive incentives should be explicitly defined to foster accountability at the highest levels.

6.3.5 Promote Stakeholder-Centric Reporting

Organizations should adopt dialogic and inclusive reporting practices that reflect the social and ecological impacts of carbon emissions, not just quantitative metrics. This includes engaging stakeholders meaningfully and incorporating qualitative disclosures into sustainability reports (Dillard & Vinnari, 2019).

6.3.6 Align Financial and Environmental Audits

Climate-related disclosures should be embedded within financial reporting frameworks, particularly for firms operating in high-emission sectors. Auditors should be equipped to assess both financial and environmental risks concurrently, creating a more holistic accountability model (Gray, 2010; Adams & Whelan, 2009).

6.3.7 Foster Inter-Institutional Collaboration

Effective climate governance requires collaboration among regulators, universities, and professional bodies. The joint efforts should aim to standardize climate reporting, develop ethical guidance for assurance professionals, and promote enforcement across industries and regions (Unerman & Chapman, 2014).

6.3.8 Revise Accounting Education and Training

Educational institutions and professional certification bodies should revise accounting curricula to include carbon reporting, climate governance, and sustainability assurance. Embedding environmental ethics in accounting education will equip future professionals to challenge greenwashing and uphold the profession's public-interest mandate (Bebbington &

Thomson, 2013).

By adopting these reforms, corporations can transition from performative to transformative practices, advancing both climate responsibility and institutional integrity. Accounting, when exercised ethically and transparently, has the potential to be a powerful instrument in the global transition to a low-carbon economy.

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