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EFFECT OF AUDIT COMMITTEE INDEPENDENCE ON ENVIRONMENTAL SUSTAINABILITY DISCLOSURE

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ABSTRACT

This study evaluated the effect of audit committee independence on environmental sustainability disclosure of listed oil and gas firms in Nigeria covering a period scope of twelve (12) years from 2012-2023. This study specifically assessed the effect of audit committee independence on effluent disclosure using panel data from the annual reports and accounts of nine (9) listed oil and gas companies in Nigeria. Ex-Post Facto research design was employed while inferential statistics via Pearson correlation coefficient and Panel least square regression analysis was employed to test the hypotheses of the study. The results from the test of hypothesis showed that audit committee independence has significant positive effect on effluent disclosure. This study concludes that audit committee independence has significant effect on environmental sustainability disclosure. Consequently, it is recommended that Audit committee be granted independence to enable them perform their functions effectively.

1. INTRODUCTION

The economic development resultant from industrialization has given rise to environmental issues around the world. In recent years, public awareness of the role both local and multinational companies play in the climate change, environment disasters and degradations, use of natural resources and environmental population with all its negative effects to both man and the environment, is on the increase, This is evident by various international summits been held globally. Examples of such global awareness is the Paris ‘climate deal’,the ‘earth summit’, held by united nations conference on economic and development (Iyoha & Ohiokha, 2023). It is believed that businesses do not operate without an environment so it becomes imperative for the business to be responsible and accountable to the environment in which they operate. Companies all over the world are increasingly being challenged to extend their accounting information reportage to encompass triple bottom disclosure practices as part of their corporate strategy and competitive advantage (Iliemena-Ifeanyi & Amedu, 2024). Currently, the main method of environmental disclosure is through sustainability reporting. In many countries especially in Nigeria, there is not yet consensus or legal statute or country-specific framework on how environmental reporting, as part of sustainability reporting, should be presented. As a result, many firms including oil and gas firms just report some of their social responsibility activities in a segment of their financial reports, especially those aspects that portray a good image of their companies, not reporting their social responsibility to maintain or protect their environment. This voluntary reporting context of environmental reporting in Nigeria and Ghana makes the study necessary as to ascertain the attributes of the board of directors that influence environmental disclosures. Thus, it is glaring that the board of directors is crucial in promulgating environmental reporting and thus play an indispensible role in influencing the company's environmental disclosure.

Statutory auditors are deemed as the watchdog authority responsible to protect the public interest and report on the accuracy and transparency of the corporate sector's financial matters (Xie, Riaz, Li, Xu, & Awan, 2021). Audit committee independence is regarded as the most significant factor to ensure the overall effectiveness of an audit committee and lead to better monitoring of the company's financial reporting practices (Shaba & Yaaba, 2023). If auditors are not independent of their clients, it may impair their ability to perform their functions objectively and independently. In a series of efforts to improve audit committee independence, various regulations including the Sarbanes-Oxley act of 2002 (SOX), the UK Corporate Governance Code, the Code of Corporate Governance (Ghosh, 2017) have been issued that require audit committees to be fully (or in the majority) comprised of independent or non-executive directors (NEDs) - who are not serving their companies in any executive or management position and do not have any other business relationship with those companies. However, the important thing to be considered here is whether having independent or NEDs as committee members are mere superficial regulations confirming "procedural independence" or they are actually associated with enhanced effectiveness of audit committees improving "substantive independence" (Salehi, 2020). To address the concern, audit committees were introduced to protect the independence of auditors and enable them to perform their functions objectively. Al-Hadrami, Rafiki & Sarea (2020) suggest that audit committees supported auditors in their disputes with management and strengthened their independence.

To fulfill the responsibilities and protect auditors from any undue pressure exerted by executive management, the audit committees themselves need to be independent in the first place. Iliemena and Uagbale-Ekatah (2023) observes that audit committee members may not always fulfill their responsibilities in an effective manner and the mere existence of audit committees may not warrant desired corporate governance outcomes. In the course of establishing a fully independent audit committee, boards are not expected to compromise on the skill sets and make unwieldy changes to the composition of the audit committee. In order to create a conducive environment for insightful deliberations of the audit committee, boards should ensure that the enlisted independent audit committee members are financially literate and have a sufficient understanding of the company's business (Ali, Riaz & Muhammad, 2022). As opined by Galbreath (2008) and Iliemena and Uagbale-Ekatah (2023) particular attention should be given to audit attribute while constituting audit committees as this has been revealed to have direct effect on the level of impact a firm makes in the society. This therefore informs this present study. Previous researches have attempted studies in this regard but failed to narrow the study to audit committee independence (Nguyen & Nguyen, 2024; Iliemena, Wobo & Goodluck, 2023; Smith & Carol, 2011; Oti & Mbu-Ogar, 2018; Aparna & Siya, 2017; Eriabie & Odia, 2016).

1.1 Objective

The main objective of this study is to ascertain the effect of Audit committee Independence on environmental sustainability disclosure of listed oil and gas firms in Nigeria. Specifically, this study sought to:

1. Ascertain the effect of audit committee independence on effluent disclosure.

1.2 Research Question

By achieving the above stated objective, this study provides answer to the question;

a. To what degree does audit committee independence affect effluent disclosure?

1.3 Hypothesis

The below null hypothesis guides the study, this;

H_o: Audit Committee Independence has no significant effect on effluent disclosure of listed Oil and Gas firms in Nigeria.

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2. LITERATURE REVIEW

2.1. Conceptual Review

Disclosure refers to the timely release of all information about a company that may influence an investor's decision. It reveals both positive and negative news, data, and operational details that impact its business. Federal regulations require publicly-listed companies to disclosure all relevant financial information as well as to reveal their analysis of their strengths, weaknesses, opportunities, and threats (Troy, 2024). Environmental Sustainability Disclosure means the disclosure, notification or reporting of information in relation to any Soil or Groundwater Contamination by or on behalf of a Purchaser to any Environmental Authority or other Third Party. Environmental sustainability disclosure is a form of corporate responsibility to the society as a result of activities with negative impact on the environment (Iliemena, 2020). Effluent is generally known as water pollution, the outflow of waste from facilities like sewage treatment plants. It can also refer to the wastewater that is expulsed by industrial facilities (Yorke, Donkor & Appiagyei, 2023). Effluent is sewage that has been treated in a septic tank or sewage treatment plant. It is also referred to as trade effluent or wastewater (Ghosh, 2017). Effluents are harmful when they enter the environment, especially in freshwater, because of their polluting chemical composition (Iyoha & Ohiokha, 2023). Statutory Audit Committees play the watchdog authority responsible to protect the public interest and report on the accuracy and transparency of corporate reports and disclosures (Xie, Riaz, Li, Xu, & Awan, 2021).

Independent committee members mean a person appointed to a committee of the Council who is not an elected member or employee (Nguyen & Nguyen, 2024). The Audit Committee shall consist of a minimum of three directors with independent directors forming a majority: Provided that majority of members of Audit Committee including its Chairperson shall be persons with ability to read and understand the financial statement (Ali, Riaz, & Muhammad, 2022). Independent Members are non-voting members of the Committee, who assist in overseeing internal and external audit arrangements, reviewing and scrutinising financial statements, and reviewing and assessing the risk management of the authority. The audit committee should consist of three or more directors who are independent as determined by the board. Independent audits provide a clear picture of a company's worth, which helps investors make an informed decision when considering whether to purchase a company's shares. It is therefore incumbent on the board to assess the independence of its audit committee and consider establishing a wholly independent audit committee with a view of going a step further in strengthening the company's corporate governance practices and processes. Every member's appointment is an occasion for careful deliberation and the board should have a strong understanding of how imperative is independence to the effective functioning of the audit committee (Shaaba & Yaba, 2023).

2.2. Theoretical Framework

2.2.1 Agency Theory

This study is anchored on Agency theory in providing theoretical insight to the concepts under study because it provides insight into the purpose of constituting the audit committees and the essence of corporate sustainability disclosure. Agency theory explains the conflicting relationship between managers and stakeholders assuming the presence of information asymmetry, opportunistic behavior of agents, and conflicts of interest between principal (Shareholders) and agents (manager). Lending credence to the agency theory, Abdul, Mohammad & Seong (2018) opines that good corporate governance mechanism is a way to militate against the agency conflict. These governance mechanisms are purposed to save shareholders' interest, minimize agency cost and make sure agent principal interest alignment. The mechanisms include the composition of the audit committee and their characterization. The advocates of agency theory (such as Smith & Carol, 2011) are of opinion that an audit committee with a larger proportion of independent or outside directors is more likely to work in the best interests of shareholders due to the lack of economic or personal interests of these directors in firm. Such independent audit committees are well placed to support auditors in their conflicts with management due to their unbiased approach (Roshima, Noorain & Wang, 2013; Al-Hadrami, Rafiki & Sarea, 2020; Iliemena & Uagbale-Ekatah, 2023), and help auditors to issue a going concern report where warranted (Ali, & Nasir, 2018).

2.3. Empirical Review

Galbreath (2008) investigated the link between corporate governance and sustainability drawing evidence from the Oil and Gas industry. The study sought to investigate the link between corporate governance and sustainability in Oil and Gas firms across two countries (Australia and Canada). Sustainability was conceptualized as including three firm obligations: Economic performance, Social responsiveness and Environmental quality. The sample was selected from firms listed on the Australian stock exchange (ASX) in the emerging Global Industry Classification System (GICS) and the Toronto stock exchange (TSX) under the classification of Junior Oil and Gas producers. The firms that filed an annual report for 2004

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financial year were selected. Descriptive statistics, correlation matrix analysis and Cross-sectional regression were used to analyze the data and test the hypotheses. Using archival data from 54 Australian and 65 Canadian Oil and Gas companies from 2004, the findings reveal that Australian firms were more socially responsive while Canadian firms demonstrated higher levels of environmental quality. Board size was a significant predictor of social responsiveness and environmental quality for Australian firms whereas more of the corporate governance variables provided explanations for the sustainability levels of Canadian firms. This evidence was based on developed economies; evidence is therefore needed from developing economies.

Asaolu, Agboola, Ayoola and Salamu (2011), studied sustainability reporting in the Nigerian Oil and Gas sector. The primary purpose of the paper was to carry out an assessment of the current level of sustainability reporting in line with International best practices. The study focused on six major oil and gas multinationals operating in Nigeria. Data were generated through content analysis of annual reports (global and local) standalone sustainability reports and other triple line reporting publications to identify the extent to which their reporting has been in line with global best practices. The study found an arbitrary and incompatible sustainability reporting indicators among all sampled companies and therefore recommends the introduction of sustainability reporting framework in line with global best practices in the Nigeria Oil and Gas sector. Even though this study was based in Nigeria, it examined the extent of disclosure and no evidence on the influence of the board on disclosure.

Smith and Carol (2011) assessed the extent organizations have in practice begun to make the shift towards triple bottom line (TBL) sustainability. An assessment was made through published surveys and an action research study of how these components are being addressed now and for the future. The action research study involved the design and launching of a Zoomerang survey that was posted both in the USA and on international websites and blogs. The data from the action research exemplify the findings that, first, there is a pattern of adopting a short term focus and expediency in decision making. Second, problem solving favors the “quick fix” over thoughtful consideration and development of the key components for sustainability. The outcome of their research also lead to questioning the urgency of implementing the very complex systemic TBL sustainability at this time in view of widespread climate concerns, versus concentrating on the more straightforward carbon footprint reduction. A Research conclusions are based on limited published data and a single survey; further research is required to substantiate the conclusions. Furthermore, the study lacks empirical justifications.

Roshima, Noorain and Wan (2013) examined the level of environmental disclosure in annual reports made by Malaysian public listed companies for the year ended 2009, and to investigate whether there are any relationships between board characteristics (board size and board independence), firm characteristics (business type) and human capital characteristics (age, knowledge background and proportion of female directors) and environmental disclosure in Malaysian public listed companies' annual reports for the year ended 2009. The study constructs the environmental disclosure index with 11 disclosure themes to determine the environmental disclosure level. This study used content analysis to find the environmental disclosure items and construct an environmental disclosure index from the data in companies' annual reports. Hierarchical regression analysis was used to examine the relationships between the environmental disclosure index and board characteristics (board size and board independence), firm characteristics (business type) and human capital characteristics (age, knowledge background and proportion of female directors). The results of the study reveal that there is a significant relationship between the existences of an independent non-executive chairman, the chairperson's age, the existence of a CEO with a law background and the industry type with the extent of environmental disclosure. The industry type was found to be the most significant variable that influences the level of environmental disclosure in Malaysian public listed companies for the year ended 2009. The findings of this study are limited to Malaysian public listed companies. Also, the study is criticized for drawing conclusions from one year data, 2009 reporting period, only.

Eriabie and Odia (2016) studied the influence of corporate governance attributes on corporate, social and environmental disclosure quality in Nigeria. The sample comprised of 174 listed companies in the Nigerian stock exchange between 2007 and 2008. The content analysis of the annual reports of 2007 and 2008 was adopted to measure the CSED quality. The ordinary least square regression analysis was used to test the impact of the corporate governance attributes on the corporate, social and environmental disclosure quality. The findings revealed that the big four audit firms and the presence of corporate social responsibility committee have positive and significant impact on CSED quality. The corporate governance attributes of board independence, audit committee, independence, CEO duality and the ownership structure of directors' shareholdings, institutional ownership have no significant impact on

CSED quality in Nigeria. The use of only two periods as scope is not the only limitation as the years in perspective were before the release of the general reporting guideline and standard by the GRI. There is need to cover more scope post 2013 reporting period.

Aparna and Siya (2017), examined corporate attributes affecting sustainability reporting from Indian perspective. The methodology was based on content analysis of 158 Indian companies selected from BSE 200. It used multiple regression analysis to identify significant corporate attributes. The analysis of the study revealed that companies with large size, older age, having multi-national operations and belonging to software, information technology, Oil and Gas industry have significant sustainability disclosure. However, company's profits, leverage, growth and advertising intensity are negatively related with the extent of sustainability disclosure. Board characteristics were omitted in this study.

Oti and Mbu-Ogar (2018) analysed the environmental and social disclosure and financial performance of selected quoted Oil and Gas companies in Nigeria. The sample size of the study comprised of five Oil and Gas companies. In line with the Global reporting index (GRI) guidelines, a checklist was developed comprising of three (3) themes, namely; Employee Health and Safety (EHS), Waste Management (WM) and Community Development (CD). Time series data for five years were collected and analyzed using the ordinary least square regression technique. Results from the statistical analysis revealed that disclosure on employee health and safety and community development do not significantly affect financial performance while disclosure on waste management had a positive and significant effect on firm's financial performance. This study examined only the internal relationship among the three bottom lines.

Abdullah, Azhar and Abdulqawi (2018) in their study aimed to identify factors that influence corporate environmental disclosure (CED) quality. Using content analysis, an index and scoring scheme were applied to annual reports, stand-alone reports and corporate homepages of a sample of 116 oil and gas companies in 19 developing countries (DCs).The results of this study reveal that out of 12 hypothesized variables, only 5 variables (company size, foreign ownership, profitability, leverage and membership of industry's associations) are positively related to the CED quality. As a limitation, this study failed to build board characteristics into the hypothesized variables.

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Abdul, Mohammad and Seong (2018) studied the effects of corporate governance on environmental sustainability reporting with empirical evidence from South Asian countries. The study took three South Asian countries namely; Bangladesh, India and Pakistan, and 88 listed organizations' sustainability reports during the years 2009 – 2016 from the global reporting initiative (GRI) database. The study considered how the board characteristics studied (Board Independence, board size, diversity and committee) affect ESRP practices in the world's most environmentally vulnerable region. The empirical results indicate that ESRP has a positive association with foreign and institutional ownership, board independence and board size. The results reveal no association between ESRP and family ownership, female directorship and CSR and environmental committee. Evidence from Asian countries may not be generalized to African countries given the differences in corporate governance structures.

Iliemena and Uagbale-Ekatah (2023) in their study evaluated the effect of audit committee attribute on corporate social impact as reflected in their corporate social performances. The population and sample of study was 5 quoted conglomerates in Nigeria. This study adopts ex-post facto research design in extracting data from annual reports of the companies in the period from 2013 to 2022. Ordinary least square regression technique was employed in testing the data so gathered. Results from the analysis revealed that audit committee size has significant positive effect on corporate social performance. Sequel to this, it is concluded that audit committee attribute significantly affect corporate social impact.

Iliemena, Wobo and Goodluck (2023) assessed the effect of corporate governance reporting on shareholders' wealth measured using the values of earnings per share in the periods 2013 to 2020 was conducted in this article. A total of 73 listed manufacturing companies on NGX Group formed the population while judgmental sampling yielded 37 manufacturing companies that formed the sample. The secondary data were obtained from the annual reports and sustainability reports using ex-post facto research design. Statistical tests were carried out using multiple regression analysis. Results from the study revealed governance reporting index has a positive effect on earnings per share. Thus, the study concluded that corporate governance plays a positive role in increasing the wealth of the shareholders from the perspective of the sustainability objective of corporations. However, it also failed to narrow the study to audit committee attributes.

3. MATERIAL AND METHOD

This study employed *"ex-post facto"* research design, as the researcher examines past events which the researcher cannot change or alter. The inability of the Researchers to manipulate the dependent or independent variable (they are past events) justifies the use of Ex-post facto research design. The population and sample of this study comprised of the nine (9) oil and gas firms listed on the Nigerian Exchange (NGX) Group which includes Ardova Plc, Conoil Plc, Eterna Plc, Japaul Gold and Venture Plc, MRS Oil Nigeria Plc, Oando Plc, Seplat Energy Plc, Total Nigeria Plc, and Capital Oil Plc. as at 31st December, 2023. Secondary data were used as the data source since the research is based on using historical data to establish a phenomenon. These data were obtained from the Nigerian Exchange (NGX) Group, fact books and websites, company annual reports and accounts, and sustainability reports of companies for a period of twelve (12) years, spanning from 2012-2023, through content analysis. Descriptive statistics and inferential statistics (Pearson Correlation Analysis and Panel Least Square (PLS) regression analysis) were utilised for the purpose of data analysis via E-Views 10 statistical software. The study model is thus;

$ESD_{it} = \beta o + \beta_1 AUDCI_{it} + \mu_{it}$ ……………………..Eqn 1.

Where:

βo is the intercept of the regression,

β_1, is the coefficients of the regression,

$AUDCI_{it}$ = Audit Committee Independence of firm í in period t,

í = individual firms (1,2,3...9),

t = time periods (2012, 2009 ... 2023),

μ_{it} = Error term

4. RESULT AND DISCUSSIONS

4.1. Descriptive Statistics

Table 1: Descriptive Statistics of Study Variables

Statistics	ESD	AUDCI
Mean	0.149167	0.120000
Median	0.160000	0.125000
Maximum	0.230000	0.180000
Minimum	0.010000	0.050000

Std. Dev.	0.063168	0.032474
Skewness	-0.802134	-0.349361
Kurtosis	3.071322	3.474435
Jarque-Bera	1.289382	0.356650
Probability	0.524825	0.836670
Sum	1.790000	1.440000
Sum Sq. Dev.	0.043892	0.011600
Observations	108	108

Source: E-Views 10.0 Descriptive Output, 2024

The above table is the descriptive statistics (mean, standard deviation, minimum and maximum) for the panels for 108 observations (that is, 9 firms x 12 years). Table 1 depicts an average mean of 0.149167 for ESD. This implies that on the average the sampled firms in Nigeria report about 14.92% of their environmental performance in their financial statements. The maximum value for environmental sustainability disclosure is 23%, minimum of 1% with a standard deviation of 0.0632. The average for Audit committee independence stood at 12%, maximum of 18%, minimum of 5% and standard deviation of 0.0324

4.2. Test of Hypothesis

H_o: Audit Committee Independence has no significant effect on effluent disclosure of listed Oil and Gas firms in Nigeria.

Table 2: Panel Least Square Regression Analysis testing the effect of AUDCI on ESD

Dependent Variable: ESD				
Method: Panel Least Squares				
Date: 06/17/24 Time: 17:14				
Sample: 2012 - 2023				
Periods included: 12				
Cross-sections included: 9				
Total panel (balanced) observations: 108				
Variable	Coefficient	Std. Error	t-Statistic	Prob.

JOURNAL OF GLOBAL ACCOUNTING
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https://journals.unizik.edu.ng/joga

C	0.075287	0.015222	4.945845	0.0000
AUDCI	0.519844	0.105654	4.920255	0.0000
R-squared	0.145654	Mean dependent var		0.144167
Adjusted R-squared	0.139637	S.D. dependent var		0.077347
S.E. of regression	0.071744	Akaike info criterion		-2.417646
Sum squared resid	0.730893	Schwarz criterion		-2.376399
Log likelihood	176.0705	Hannan-Quinn criter.		-2.400885
F-statistic	24.20891	Durbin-Watson stat		1.751772
Prob(F-statistic)	0.000002			

Source: E-Views 10.0 Regression Output, 2024

The relationship between audit committee independence and effluent disclosure was evaluated based on the result of table 2. From table 2 above, it could be seen that AUDCI with a positive co-efficient of 00.519844 has a significant relationship with ESD as indicated by the t-statistic of 4.920255 and its associated probability value of 0.0000. The R squared which examines the extent to which the predictor (AUCI) explain the variation in the dependent variable (ESD) shows that the R Squared figure of 0.145654 indicates that, reliance on this model will account for 14.57% of the variations in the dependent variable (ESD). The Durbin-Watson value of 1.751772 buttressed the fact that the model does not contain auto-correlation, thereby, making the regression fit for prediction purpose. The analysis resulted in F-value of 24.20891 with corresponding p-value of 0.000002. Since the p-value of the test at 0.000002 is less than the critical significant value of 0.05 (5%), thus H_1 is accepted and Ho rejected. This implies that audit committee independence has significant and positive effect on effluent disclosure of listed Oil and Gas firms in Nigeria at 5% level of significance. This study supports the works of Iliemena and Uagbale-Ekatah (2023), Eriabie and Odia (2016), Nguyen and Nguyen, (2024); Ali, Riaz and Muhammad (2022) but negated the results of Yorke, Donkor and Appiagyei (2023); Khalil and Nehme (2023)

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CONCLUSION AND RECOMMENDATIONS

This study ascertained the effect of audit committee independence on environmental sustainability disclosure of listed oil and gas firms in Nigeria from 2012-2023. Environmental sustainability was proxied by effluent disclosure. Audit Committee Independence has significant and positive effect on effluent disclosure. Conclusively, Audit committee independence it's very crucial to sustainability because of its significant effect on environmental sustainability disclosure of listed oil and gas firms in Nigeria.

This study therefore recommends that Audit committee be granted more independence to enable them perform their functions effectively.

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Appendix A

Environmental Disclosures in GRI G4

Disclosure	Description	Aspect
G4-EN1	Materials used by weight or volume	Materials
G4-EN3	Energy consumption within the organization	Energy
G4-EN4	Energy consumption outside the organization	Energy
G4-EN5	Energy intensity	Energy
G4-EN6	Reduction in energy consumption	Energy
G4-EN7	Reductions in energy requirements of products and services	Energy
G4-EN8	Total water withdrawal by source	Water
G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and the areas of high biodiversity value outside protected areas	Biodiversity
G4-EN12	Description of the significant impacts of activities, products, and services on biodiversity in protected areas and the areas of high biodiversity value outside protected areas	Biodiversity
G4-EN13	Habitats protected or restored	Biodiversity
G4-EN15	Direct greenhouse gas (ghg) emissions (scope 1)	Emissions
G4-EN16	Energy indirect greenhouse gas (ghg) emissions (scope 2)	Emissions
G4-EN17	Other indirect greenhouse gas (ghg) emissions (scope 3)	Emissions
G4-EN18	Greenhouse gas (ghg) emissions intensity	Emissions
G4-EN19	Reduction in greenhouse gas (ghg) emissions	Emissions
G4-EN22	Total water discharge by quality and destination	Effluents and Waste
G4-EN27	Extent of the impact mitigation of the environmental impacts of products and services	Products and Services
G4-EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and the transporting members of the workforce	Transport
G4-EN31	Total environmental protection expenditures and investments by type	Overall
G4-EN32	Percentage of new suppliers that were screened using environmental criteria	Supplier Environmental Assessment
G4-EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken	Supplier Environmental Assessment

Source: G4 Sustainability Reporting Guidelines, Reporting Principles and Standard Disclosures, 2024.