



Media Exposure as a Moderator of Carbon Emission Disclosure in Indonesian Energy Companies

Fitri Nur Komariyah¹⁾; Tantina Haryati^{2*)}

^{1,2)} *Department of Accounting, Faculty of Economics and Business, Universitas Pembangunan Nasional "Veteran" Jawa Timur*

*Corresponding Author: tantinah.ak@upnjatim.ac.id

How to Cite :

Komariyah, F. T., Haryati, T. (2026). Media Exposure as a Moderator of Carbon Emission Disclosure in Indonesian Energy Companies. *Bima Journal : Business, Management and Accounting Journal*, 7 (1) 979-990 . DOI: <https://doi.org/10.37638/bima.7.1.979-990>

ARTICLE HISTORY

Received [5 May 2026]

Revised [14 May 2026]

Accepted [29 June 2026]

KEYWORDS

Carbon Emission
Disclosure, Environmental
Management System,
Environmental
Performance, Institutional
Ownership, Media
Exposure

**This is an open access article
under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license**



ABSTRACT

Purpose: This study aims to examine the effect of environmental performance, environmental management systems, and institutional ownership on carbon emission disclosure, with media exposure as a moderating variable in energy sector companies listed on the Indonesia Stock Exchange. **Methodology:** This research employs a quantitative method, using secondary data from sustainability and yearly reports. Analyzed using moderated regression analysis (MRA). **Results:** The results indicate that environmental performance and environmental management systems have a significant positive effect on carbon emission disclosure, while institutional ownership has no significant effect. Media exposure strengthens the relationship between environmental performance and carbon emission disclosure, but does not moderate the relationship between environmental management systems, institutional ownership, and carbon emission disclosure. **Findings:** Companies with better environmental performance and environmental management systems tend to disclose carbon emission information more widely. **Novelty:** This study uses moderating variabel and uses energy sector companies as the research object in examining carbon emission disclosure, which has rarely been investigated in previous studies. **Originality:** This study offers concrete proof of the connection between environmental factors, governance mechanisms, ownership, and media exposure on carbon emission disclosure.. **Conclusion:** Environmental performance and environmental management systems encourage greater carbon emission disclosure, whereas institutional ownership does not significantly influence disclosure practices.. **Type of Paper :** Research Article.

INTRODUCTION

The increasing nitrous oxide (N₂O), carbon dioxide (CO₂), and methane (CH₄) concentrations makes climate change an increasingly important issue worldwide (Yanto et al., 2025). Increased carbon emissions cause global temperatures to rise and lead to natural disasters, droughts, and ecosystem damage. As a result of the global carbon project report, it is projected that global carbon emissions will exceed 41 billion metric tonnes of carbon dioxide by the year 2024, with the energy sector being the largest cause of carbon emissions caused by the use of fossil fuels (Deutsche Welle, 2024). One of the countries with high emissions is Indonesia. With its status as a leading global source of carbon dioxide emissions, Indonesia will emit around 675 million tons in 2023, according to data from the Joint Research Centre (JRC) (Ahdiat, 2025). The high number of national emissions

shows how important it is for businesses, especially the energy sector, to support climate change mitigation through carbon emissions transparency.

The global distribution of emissions shows that the energy sector contributes the largest amount, accounting for approximately 76% of total global emissions, or approximately 37.2 GtCO₂e. This substantial contribution indicates that fossil fuel-based energy remains the primary cause of global carbon emissions, making controlling emissions in the energy sector a crucial aspect of climate change mitigation efforts. In line with this, the International Energy Agency (IEA) states that CO₂ emissions from the global energy and industrial sectors will increase again in 2024, reaching approximately 37.6 gigatons, an increase of approximately 0.8% as opposed to the preceding year. Indonesia has affirmed its dedication to emission reduction under the Paris Agreement and its Nationally Determined Contribution (NDC) objective, which proposes a 31.89% unconditional cut and a conditional cut of 43.20% by 2030. NDC, 2022. The Paris Agreement, established in 2015, mandates international endeavours to restrict world warming no more than 2°C, with an optimal target of 1.5°C. This agreement enhances the execution of the Kyoto Protocol within the set within the framework of the updates to the UNFCCC, which controls the regulation of numerous greenhouse gases, such as CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆. (Ratmono et al., 2021). The Indonesian government also strengthens policies through various regulations related to emission control and greenhouse gas inventories. As a member of the Paris Agreement, Indonesia is required to report its NDC periodically through a measurement, reporting, and verification (MRV) mechanism. This situation exacerbates the compelling businesses their carbon emission reports more transparently. as a measure of environmental accountability, while simultaneously assisting in the attainment of national emission reduction targets.

Many factors are thought to impact the reporting of greenhouse gas emissions. The PROPER rating is a metric that evaluates a company's capacity to manage its environmental impacts. Companies that demonstrate more open about disclosing their carbon emissions when they have great environmental performance (Fortuna & Nazir, 2022). Furthermore, Environmental management systems, including ISO 14001 certification demonstrate structured environmental management, which can increase the transparency of corporate disclosures. (Desvita & Rahma, 2025). Another influential factor is institutional ownership, as institutional investors have oversight capabilities that can encourage companies to increase their disclosure of environmental information. (Bedi & Singh, 2025). However, previous research remains uncertain; some studies have found improved transparency concerning carbon emissions (Putri et al., 2024) while others have shown insignificant causes as a result of the option to disclose carbon emissions (Ummah & Setiawan, 2021). In addition, media exposure is also thought to play a role in increasing public pressure on companies. Media can function as a social control tool that encourages companies to increase transparency in carbon emissions disclosures (Shao & He, 2022). However, other research suggests that media exposure may not be effective because it lacks the coercive power of regulators (Abdullah et al., 2020). Consequently, media exposure is anticipated to either reinforce or diminish the correlation concerning environmental performance, environmental management systems, and the disclosure of carbon emissions across institutions.

METHOD

Analysis Method

This analysis adopted a quantitative approach to analyse that impact environmental performance, environmental management systems, and institutional ownership on carbon emission disclosures of energy sector businesses listed at Indonesia Stock Exchange in 2021-2024 period. The secondary statistics are sourced from annual reports, sustainability reports, and the PROPER grade from the Ministry of Environment and Forestry (KLHK). The population of this study consisted of 91 energy sector companies listed on the Indonesia Stock Exchange. The sample was selected using purposive sampling based on several criteria, namely: (1) companies consistently listed during the

2021–2024 period, (2) companies that published annual and sustainability reports, (3) companies included in the PROPER program of the Ministry of Environment and Forestry during 2021–2024. Based on these criteria, 12 companies met the requirements and were selected as the research sample, resulting in a total of 48 observation data over four years.

The variable on carbon emission disclosure was measured using an index of eighteen disclosure items based on the requirements of the Carbon Disclosure Project (CDP). The PROPER grade was used to gauge environmental performance; the ISO 14001 certification dummy variable indicated the environmental management system; and institutional ownership as a proportion of total shares was used to gauge institutional ownership. The data were analysed using SPSS software.

Environmental Performance

PROPER grade from the Ministry of Environment and Forestry (KLHK), assesses environmental performance. PROPER rating is translated into a numerical score: 5 for gold, 4 for green, 3 for blue, 2 for red, and 1 for black (Ratmono et al., 2021).

Environmental Management System

The environmental management system is assessed using a dummy variable that represents the possession of ISO 14001 certification. Organisations possessing ISO 14001 certification receive a score of 1, whereas those lacking certification are assigned a score of 0 (Sam & Song, 2022).

Institutional Ownership

Institutional ownership is measured by comparing the proportion of shares held the proportion of a company's total outstanding shares held by institutional investors. The formula for measuring is as follows:

$$IO = \frac{\text{Number of institutional shares}}{\text{Number of shares outstanding}}$$

Source : Pirzada et al., (2015)

Carbon Emission Disclosure

A metric for measuring carbon emission disclosure is the carbon emission disclosure index, which is index based on 18 disclosure items according to (Choi et al., 2013). The measurement is conducted using the content analysis method , which assigns a score of 1 to disclosed items and a score of 0 to items not disclosed.Measurement formula:

$$CED = \frac{\sum d_i}{M}$$

Description:

CED	= Carbon emission disclosure
$\sum d_i$	= Number of items disclosed
M	= Total disclosure items

Media Exposure

Media exposure was determined with a dummy variable based on online media publications related to carbon emissions and environmental issues. Companies receiving media exposure were assigned a grade of 1, while those not receiving any were assigned a score of 0 (Ulupui et al., 2020).

RESULTS AND DISCUSSION

RESULTS

The outcome of this study was gathered from 12 energy sector whose shares are traded on the Indonesia Stock Exchange 48 observations were made over the course of four years.

Table 1. Descriptive Statistical Test

	N	Minimum	Maximum	Mean	Standard Deviation
EP	48	2.00	5.00	3.6673	0.89151
EMS	48	0.00	1.00	0.9375	0.24462
IO	48	0.20	0.90	0.6486	0.15353
CED	48	0.28	0.94	0.6933	0.18011
ME	48	0.00	1.00	0.5208	0.50485

Source: Data Processed SPSS Version 31.0, 2025

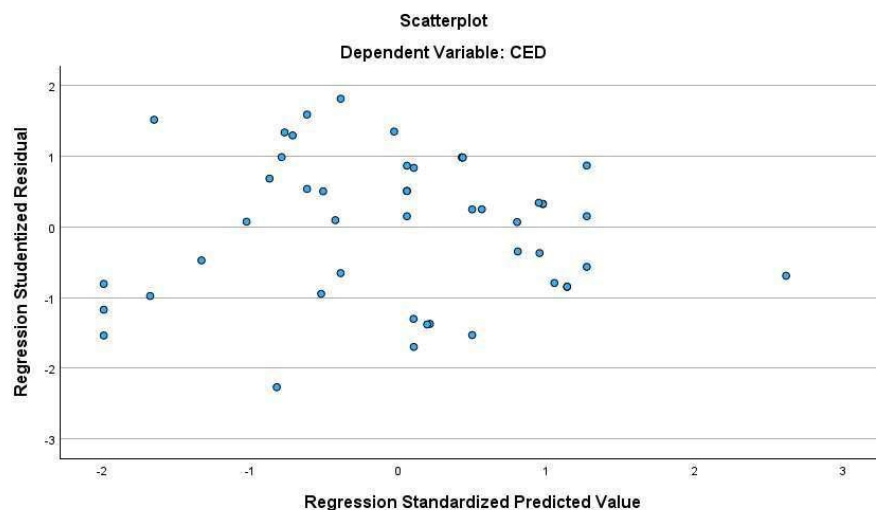
Descriptive statistics with 48 study data, environmental performance (EP) variable has an average of 3.6673 with the minimum value of 2.00 and the maximum of 5.00. The mean value of the environmental management system (EMS) variable is 0.9375, whereas the mean of the institutional ownership (IO) variable is 0.6486. Besides, the average dependent variable of carbon emission disclosure (CED) is 0.6933, which suggests that the level of corporate carbon emission disclosure is relatively high. The average media exposure (ME) variable is 0.5208, which shows that majority of the companies had media exposure connected to environmental issues and emissions of carbon.

Table 2. Normality Test Results

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
Normal Parameters	Mean	0.000000
	Std. Deviation	0.10725176
Most Extreme Differences	Absolute	0.110
	Positive	0.096
	Negative	-0.110
Test Statistic		0.110
Asymp.Sig (2-tailed) ^c		0.196

Source: Data Processed SPSS Version 31.0, 2025

The results of the normality test show an Asymp. Sig. value of 0.196, which exceeds 0.05, indicating that the data distribution can be considered normal.

Figure 1. Heteroscedasticity test

The heteroscedasticity test reveals that the data distribution points do not exhibit a certain pattern so ensure in the regression model, heteroscedasticity is not present.

Table 3. Multicollinearity Test

Model	N	Unstandartized B	Coefficients Std.Error	Collinearity Tolerance	Statistics VIF
1	(Constant)	0.344	0.053		
	EP	0.034	0.016	0.608	1.646
	EMS	0.155	0.051	0.665	1.503
	IO	0.027	0.065	0.650	1.539
	ME	0.148	0.032	0.774	1.292

a. Dependent Variabel : CED

Source: Data Processed SPSS Version 31.0, 2025

Multicollinearity test findings indicated with each variable having a tolerance value > 0.10 and $VIF < 10$ such the absence of multicollinearity is proven.

Table 4. Autocorrelation Test Results

Model	R	R Square	Adjusted R Square	St. Error Of the Estimate	Durbin Watson
1	0.349	0.122	0.038	0.15078	1.756

Predictors : (Constant), EP, EMS, IO, ME

Dependent Variable : CED

Source: Data Processed SPSS Version 31.0, 2025

The autocorrelation test results obtained a Durbin-Watson value of 1.756 which is between the du and 4-du values, so the regression model is pronounced not to experience the autocorrelation.

Table 5. Multiple Linear Regression Results

Model		Unstandartized B	Coefficients Std.Error	t	Sig.
1	(Constant)	0.364	0.078	4.638	<0.001
	EP	0.038	0.018	2.037	0.048
	EMS	0.130	0.060	2.186	0.034
	IO	0.132	0.034	3.837	<0.001

Dependent Variable : CED

Source: Data Processed SPSS Version 31.0, 2025

The dependent variable is presumed to be fixed if the independent variables are fixed is 0.364. The environmental performance the variable possesses a regression coefficient of 0.038 and a favourable direction, but not statistically significant based having a significance level higher than 0.05, with a value of 0.048. The regression coefficient for the environmental management system variable is 0.130 with a positive direction; However, the result is not statistically significant since the significance value of 0.034 is greater than 0.05. Meanwhile, there exists a positive link between institutional ownership coefficient of 0.132 and significantly has an impact on the revelation of carbon emissions, as shown by a significance level below 0.001 (< 0.05).

Table 6. Moderate Regression Analysis Test Results

Model		Unstandartized B	Coefficients Std.Error	t	Sig.
1	(Constant)	1.175	0.088	7.450	<0.001
	EP	0.047	0.021	2.279	0.028
	EMS	0.221	0.068	3.262	0.002
	IO	-0.135	0.093	-1.460	0.152
	EPXME	0.096	0.021	4.558	<0.001
	EMSXME	-0.170	0.086	-1.968	0.056
	IOXME	-0.061	0.129	-0.472	0.639

Dependent Variable : CED

Source: Data Processed SPSS Version 31.0, 2025

The value of carbon emission disclosure (CED) 1.175 is equivalent to its constant value when the independent variables are assumed to be constant. It is the environmental performance regression coefficient variable is 0.047 it signifies a favourable correlation. This means that carbon emission disclosure will increase by 0.047 as environmental performance improves, assuming other variables remain constant. The variable of the environmental management system is a regression coefficient of 0.221, which suggests a positive relationship. This implies that 0.22% more information about carbon emissions will be disclosed.1 as the implementation of the environmental management system increases, provided that other variables remain constant. The variable of institutional ownership possesses a regression coefficient of -0.135, which suggests a negative relationship. Thus, a spike in institutional ownership correlates with a reduction in carbon emission disclosure by .135. In the moderating variable, the EP×ME interaction has a positive coefficient of 0.096, showing that media exposure can strengthen the interaction of environmental performance and the disclosure of carbon emissions. Concurrently, the EMS×ME interaction of -0.170 and IO×ME of -0.061 suggest a negative relationship. Consequently, media exposure tends to diminish the impact of the institutional ownership and environmental management system on carbon emission disclosure.

Table 7. R² Test Results

Model	R	R Square	Adjusted R Square	St. Error Of the Estimate
1	0.821	0.674	0.626	0.09160

Source: Data Processed SPSS Version 31.0, 2025

The table shows that the dependent variable is 67.4 percent dependent on the independent variable, with a R² value of 0.674. The outcome illustrates that the independent variable accounts for 67.4 percent the dependent variable's variance. Excluded from this analysis are the remaining 32.6 percent. Furthermore, following adjustment, Dependent variable is possibly clarified as the independent variable to the tune of 62.6%. A value of 0.626 for Adjusted R 2.

Table 8 F Test Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.543	4	0.136	5.589	0.001 ^b
	Residual	1.045	43	0.024		
	Total	1.588	47			

a. Predictors : (Constant), EP, EMS, IO, ME

Dependent Variable : CED

Source: Data Processed SPSS Version 31.0, 2025

The significance value obtained according to the results of the F-test in the ANOVA table is $0.001 < 0.05$ with an estimated F value of 5.589. The results of this study show that the independent variabel jointly affect the dependent variabel.

Table 9. T Test Results

Model		Unstandartized B	Coefficients Std.Error	t	Sig.
1	(Constant)	1.175	0,088	7.450	<0.001
	EP	0.047	0.021	2.279	0.028
	EMS	0.221	0.068	3.262	0.002
	IO	-0,135	0.093	-1.460	0.152
	EPXME	0.096	0.021	4.558	<0.001
	EMSXME	-0.170	0.086	-1.968	0.056
	IOXME	-0.061	0.129	-0.472	0.639
Dependent Variable : CED					

Source: Data Processed SPSS Version 31.0, 2025

According to the t-test findings, the variable of Environmental Performance (EP) has a significance value of $0.028 < 0.05$ so that EP has a substantial effect on Carbon Emission Disclosure (CED). The significance value of the Environmental Management System (EMS) variable is $0.002 < 0.05$, so EMS has a substantial effect on CED. Simultaneously, the significance of Institutional Ownership (IO) is $0.152 > 0.05$ hence IO is ineffective in influencing CED. When looking at the moderating variable, EPXME's significant value is $< 0.001 < 0.05$, thus media exposure are able to mitigate the impactEP on CED. Significant value of the EMSXME is $0.056 > 0.05$ so that ME does not modify the effect of EMS on CED. Moreover, the value of significance of IOXME variable is $0.639 > 0.05$ suggesting that media exposure is not able to mitigate the effect of IO on CED

DISCUSSION

The Impact of Environmental Performance on Carbon Emissions Disclosure

The investigation's results indicate environmental performance (EP) significantly influences carbon emission disclosure. This result confirms the excellence of the environmental performance. is an important determinant in encouraging corporate transparency. Firms that do a good job of protecting the environment are financially motivated to disclose their carbon emissions on a broad scale due to such disclosure serves as a means of demonstrating a commitment to sustainability. according to stakeholder theory, businesses fail to oriented towards shareholders, but also with relation to the government's and other parties' interests, the community, and investors who are increasingly demanding transparency of environmental information.

From a legitimacy theory perspective, carbon emission disclosure is utilised as a means to acquire and retain social legitimacy. This finding aligns with research (Desvita & Rahma, 2025; Fortuna & Nazir, 2022; Putri et al., 2024) the disclosure of carbon emissions is significant affected by environmental performance.. Furthermore, (Yanto et al., 2025)it also shows that firms with higher PROPER ratings typically exhibit more transparency. This suggests that improved environmental performance impacts companies' internal operations and makes them more transparent in sustainability reporting. Firms with elevated PROPER PROPER ratings are more likely to reveal supplementary environmental duties than their carbon emission disclosures. Conversely, companies with lower PROPER ratings disclose more carbon emissions.(Angelina & Handoko, 2023)

Carbon emissions disclosure is both a symbolic and substantive strategy for gaining social acceptance. Companies with high environmental performance have a "legitimacy advantage," making them more confident in disclosing information. Conversely, companies with low

performance tend to withhold disclosure due to the potential for negative perceptions. These findings also indicate a synergistic relationship between actual performance and reporting practices, where transparency is driven not only by external pressure but also by the company's internal preparedness. Therefore, these results strengthen the argument that improving the calibre of environmental management will directly influence the quality of disclosure.

The Impact of Environmental Management Systems on Carbon Emission Disclosure

Environmental management systems (EMS) have been shown to significantly impact CED, denoting the presence of an environmental management system serves as an internal infrastructure to support more transparent reporting. An EMS facilitates companies in generating relevant and accountable data by providing a formal mechanism for identifying, measuring, and controlling environmental impacts. Without a structured system, carbon emission disclosures tend to be sporadic and inconsistent. Consequently, possessing an ISO 14001 certificate indicates that a firm has established an method for environmental management that meets the required. Organisations who have adopted this approach also voluntarily share carbon emission statistics, hence increasing the likelihood of providing accurate information.(Fortuna & Nazir, 2022).

From a stakeholder perspective, the existence of an EMS signifies a company's dedication to meeting the demands for environmental information transparency. Meanwhile, legitimacy theory explains that EMS implementation represents compliance with applicable environmental standards, which is then reinforced through public disclosure. This finding aligns with research (Desvita & Rahma, 2025; Fortuna & Nazir, 2022; Yanto et al., 2025) that found EMS implementation exerts a beneficial influence on carbon emission disclosure. Nonetheless, investigation (Ummah & Setiawan, 2021) has shown conflicting results, indicating that EMS implementation is not always followed by increased disclosure, indicating that EMS effectiveness is highly dependent on the level of implementation within a company.

EMS serves as a tool to address accountability demands through the provision of systematic and credible information. Meanwhile, legitimacy theory views an EMS as a form of compliance with applicable environmental norms and standards, which is then reinforced through public disclosure. However, it is important to note that the existence of an EMS does not always guarantee high-quality disclosure if its implementation is symbolic. Therefore, the findings of this investigation suggest that in the context of energy sector companies, an EMS has functioned beyond mere administrative formality and is capable of encouraging better transparency practices.

The Impact of Institutional Ownership on Carbon Emission Disclosure

The study's results indicate that institutional ownership (IO) has no significant effect on CED. This finding is interesting because, theoretically, institutional investors have the power to affect corporate policies, encompassing openness. However, empirical results indicate that pressure from institutional investors has proven ineffective in promoting carbon emission disclosure. It shows that institutional investors remain primarily concentrated on short-term financial factors rather than sustainability.

Within the framework of stakeholder theory, institutional investors should play a strategic role in promoting transparency, but in practice, this influence is not optimal. Meanwhile, legitimacy theory suggests that companies are more oriented towards financial legitimacy than social legitimacy through environmental disclosure. This discovery corresponds with research (Oyerogba et al., 2025; Riantono & Sunarto, 2022; Yanto et al., 2025) that determined institutional ownership exerts no meaningful influence on carbon emissions disclosure. These findings demonstrate that institutional investors lack sufficient power to encourage greater transparency as long as carbon emissions disclosure remains voluntary. Institutional investors feel that carbon emissions disclosure is less impactful on enhancing company value than characteristics like liquidity and profitability (Pratama, 2021).

Institutional investors have not prioritized environmental issues as part of their investment decisions. Meanwhile, legitimacy theory explains that companies focus more on maintaining legitimacy in the eyes of investors through financial performance than through environmental transparency. This finding can also be interpreted as an indication that reporting in Indonesia remains voluntary, and therefore not strong enough to be a primary concern for investors. Thus, the function of Institutional ownership as a supervisory mechanism on environmental issues remains limited and suboptimal.

Media Exposure Moderates the Relationship Between Environmental Performance and Carbon Emission Disclosure

The analysis shows that media exposure can enhance the interaction between environmental performance and carbon emission disclosure. This confirms that the media functions as an external control mechanism that increases reputational pressure on companies. When firms exhibit commendable environmental performance receive media attention, they tend to increase disclosure to strengthen their positive image and maintain public trust. In other words, the media not only conveys information but also shapes stakeholder perceptions and expectations.

From a stakeholder perspective, the media serves as a channel that accelerates the dissemination of information and expands the reach of public pressure. Meanwhile, in legitimacy theory, The media functions as a mechanism for corporations to uphold social legitimacy. Interestingly, these findings suggest that the media is more effective when combined with strong environmental performance. This means that the media does not create transparency from scratch, but rather reinforces the tendency of companies with strong environmental commitments.

Media serves as a channel for information diffusion, increasing public pressure on companies. Meanwhile, in legitimacy theory, the media reinforces the necessity for a firm to uphold social credibility. This conclusion is corroborated by studies (Nurjanah & Herawaty, 2022; Putri et al., 2024; Wiransyah et al., 2024) suggesting that media exposure may improve the transparency of carbon emissions reporting via reputational pressure. Thus, the media is an effective external factor in strengthening the relationship between environmental performance and emissions disclosure.

Media Exposure Moderates the Relationship Between Environmental Management Systems and Carbon Emission Disclosure

Media exposure was not found to regulate the interaction between EMS and CED. This suggests that the existence of an environmental management system is more significantly shaped by internal corporate dynamics than by external influences. Companies with an EMS tend to implement reporting practices based on internal standards and regulations, so additional media pressure does not have a significant impact.

From a legitimacy theory perspective, companies that have implemented an EMS may already feel they have obtained formal legitimacy through compliance with environmental standards. As a result, companies may not perceive additional pressure to increase disclosure despite media attention. This finding also indicates that some companies may implement EMS primarily as a compliance-based approach rather than a transparency-driven approach. Therefore, media exposure is not always effective in influencing reporting behavior when companies consider their internal environmental systems adequate.

Companies that have implemented an EMS likely feel they have met regulatory expectations, and therefore are not motivated to increase disclosure despite media attention. This finding aligns with research (Yanto et al., 2025) demonstrating that media exposure doesn't always influence carbon emissions disclosure. This confirms the media lacks the coercive authority of regulators in shaping corporate policies (Abdullah et al., 2020).

Media Exposure Moderates the Relationship Between Institutional Ownership and Carbon Emission Disclosure.

The results of this study indicate that media exposure does not affect the relationship between IO and CED.. This discovery suggests that media influence is insufficient to effect change the preferences of institutional investors or the corporate policies influenced by those investors. Institutional investors tend to use quantitative and financial information, so non-financial environmental issues have not become a primary consideration.

From a stakeholder theory perspective, this result reflects that not all stakeholder groups respond similarly to media pressure. Institutional investors have different interests from the general public, causing the influence of media exposure on them to be relatively limited. Meanwhile, based on legitimacy theory, companies tend to prioritize legitimacy from stakeholders who possess direct economic power. Consequently, although the media may shape public opinion, its influence on the relationship between institutional ownership and carbon emission disclosure remains limited.

This finding confirms that the effectiveness of media exposure as a moderating variable depends on the characteristics and interests of the stakeholders involved. Institutional investors have more dominant economic interests, so environmental issues are not a top priority. Meanwhile credibility theory posits that firms prioritise gaining credibility from stakeholders with direct economic power. This conclusion is corroborated by studies (Yanto et al., 2025) showing media exposure may not invariably enhance carbon emission disclosure. Therefore, media effectiveness as a moderator depends heavily on the characteristics of the stakeholders involved and their underlying interests.

CONCLUSION

Companies listed on the Indonesia Stock Exchange in the energy sector from 2021 to 2024 will have their carbon emission disclosures analyzed together with their environmental performance, environmental management systems, and institutional ownership. This study uses media exposure as a moderating variable to evaluate how it affects the link between the independent variables and disclosure of carbon emissions. The investigation reveals that environmental performance and environmental management systems contribute positively and substantially to the extent of carbon emission disclosure conducted by corporations. Conversely, institutional ownership does not exhibit a substantial impact on the disclosure of carbon emissions. Firms with greater media coverage are inclined to disseminate more environmental information according to the moderating test, which shows that media exposure can improve the association between environmental performance and carbon emission disclosure. The disclosure of carbon emissions and the impact of institutional ownership and environmental management system has not been shown to be mitigated by exposure to the media

This study has several limitations, including the relatively small sample size of 48 observation data from 12 energy sector companies, the focus on only one sector, and the limited observation period of 2021–2024, which may affect the generalizability of the findings. In addition, media exposure was measured using a dummy variable, which may not fully reflect the intensity of media coverage. Therefore, future research is recommended to use larger samples, include various industrial sectors, extend the observation period, and apply more comprehensive measurements of media exposure and other related variables.

REFERENCES

- Abdullah, M. W., Musriani, R., Syariati, A., & Hanafie, H. (2020). Carbon emission disclosure in Indonesian firms: The test of media-exposure moderating effects. *International Journal of Energy Economics and Policy*, 10(6), 732–741. <https://doi.org/10.32479/IJEEP.10142>
- Ahdiat, A. (2025). *Negara Penyumbang Emisi Gas Rumah Kaca Terbesar pada 2024*. Databoks. 20 Desember 2025 <https://databoks.katadata.co.id/infografik/2025/11/17/negara-penyumbang-emisi-gas-rumah-kaca-terbesar-pada-2024>

- Angelina, A., & Handoko, J. (2023). Pengaruh Kepemilikan Institusional, Komite Audit, dan Kinerja Lingkungan Terhadap Pengungkapan Emisi Karbon. *Kompartemen : Jurnal Ilmiah Akuntansi*, 21(1), 49. <https://doi.org/10.30595/kompartemen.v21i1.15834>
- Bedi, A., & Singh, B. (2025). Does ownership structure affect carbon emission disclosure? *Asian Review of Accounting*, 33(1), 72–88. <https://doi.org/10.1108/ARA-11-2023-0307>
- Choi, B. B., Lee, D., & Psaros, J. (2013). An analysis of Australian company carbon emission disclosures. *Pacific Accounting Review*, 25(1), 58–79. <https://doi.org/10.1108/01140581311318968>
- Desvita, L., & Rahma, Y. (2025). The Effect of Capital Expenditure, Environmental Performance, Environmental Management System, Institutional Ownership and Independent Board of Commissioners on Carbon Emission Disclosure. *Jurnal Akuntansi Bisnis*, 18(1), 126. <https://doi.org/10.30813/jab.v18i1.7415>
- Deutsche Welle. (2024). *Emisi Karbon Global Capai Rekor Tertinggi pada Tahun 2024*. Detikcom. 11 Januari 2026, <https://news.detik.com/dw/d-7638696/emisi-karbon-global-capai-rekor-tertinggi-pada-tahun-2024#:~:text=Laporan bertajuk %22Anggaran Karbon Global,Institute%2C yang memimpin penelitian tersebut>.
- Fortuna, D. F. N., & Nazir, N. (2022). Pengaruh Kinerja Keuangan, Kinerja Lingkungan, Sistem Manajemen Lingkungan, Kepemilikan Manajerial Dan Reputasi KAP Terhadap Carbon Emission Disclosure. *Jurnal Ekonomi Trisakti*, 2(2), 749–762. <https://doi.org/10.25105/jet.v2i2.14485>
- NDC. (2022). *Enhanced Nationally Determined Contribution Republic Of Indonesia*. https://unfccc.int/sites/default/files/NDC/2022-09/23.09.2022_Enhanced NDC Indonesia.pdf
- Nurjanah, I. A., & Herawaty, V. (2022). Pengaruh Corporate Governance Dan Media Exposure Terhadap Carbon Emission Disclosure Dengan Kinerja Lingkungan Sebagai Variabel Moderasi. *Jurnal Ekonomi Trisakti*, 2(2), 1261–1272. <https://doi.org/10.25105/jet.v2i2.14637>
- Oyerogba, E. O., Olugbenro, S. K., Omojola, S. O., Wright, O., Aregbesola, O. D., Akinsola, T. O., & Amu, I. (2025). The Roles of Ownership Structure on Carbon Emission Disclosure Quality of the Listed Oil and Gas Companies in Nigeria. *International Journal of Energy Economics and Policy*, 15(1), 25–35. <https://doi.org/10.32479/ijeep.17230>
- Pirzada, K., Mustapha, M. Z. Bin, & Wickramasinghe, D. (2015). Firm Performance, Institutional Ownership and Capital Structure: A Case of Malaysia. *Procedia - Social and Behavioral Sciences*, 211, 170–176. <https://doi.org/10.1016/j.sbspro.2015.11.025>
- Pratama, Y. M. (2021). Analisis Determinan Pengungkapan Emisi Karbon Di Indonesia. *Modus*, 33(2), 120–137. <https://doi.org/10.24002/modus.v33i2.4644>
- Putri, C. D. P., Mansur, F., & Hernando, R. (2024). Pengaruh Profitabilitas, Solvabilitas, Reputasi Kantor Akuntan Publik, Dan Kinerja Lingkungan Terhadap Pengungkapan Emisi Karbon (Studi Empiris Pada Perusahaan Sektor Energi Yang Terdaftar di Bursa Efek Indonesia). *Management Studies and Entrepreneurship Journal*, 5(2), 6459–6471. <https://doi.org/10.37385/msej.v5i2>
- Ratmono, D., Darsono, D., & Selviana, S. (2021). Effect of carbon performance, company characteristics and environmental performance on carbon emission disclosure: Evidence from Indonesia. *International Journal of Energy Economics and Policy*, 11(1), 101–109. <https://doi.org/10.32479/ijeep.10456>
- Riantono, I. E., & Sunarto, F. W. (2022). Factor Affecting Intentions of Indonesian Companies to Disclose Carbon Emission. *International Journal of Energy Economics and Policy*, 12(3), 451–459. <https://doi.org/10.32479/ijeep.12954>
- Sam, A. G., & Song, D. (2022). ISO 14001 certification and industrial decarbonization: An empirical study. *Journal of Environmental Management*, 323(116–169). <https://doi.org/https://doi.org/10.1016/j.jenvman.2022.116169>

- Shao, J., & He, Z. (2022). How does social media drive corporate carbon disclosure? Evidence from China. *Frontiers in Ecology and Evolution*, 10(August), 1–16. <https://doi.org/10.3389/fevo.2022.971077>
- Ummah, Y. R., & Setiawan, D. (2021). Do Board of Commissioners Characteristic and International Environmental Certification Affect Carbon Disclosure? Evidence from Indonesia. *Jurnal Dinamika Akuntansi Dan Bisnis*, 8(2), 215–228. <https://doi.org/10.24815/jdab.v8i2.21332>
- Wiransyah, A., Husni, T., & Alfarisi, M. F. (2024). The Influence of Independent Commissioners, Board of Directors Size, and Institutional Ownership on Carbon Emission Disclosure Moderated By Environmental Performance in Energy Sector Companies in Bei 2019-2023. *Journal of Economic, Business and Accounting (COSTING)*, 7(5), 4735–4752. <https://doi.org/10.31539/costing.v7i5.12387>
- Yanto, H., Hajawiyah, A., Baroroh, N., Kardiyem, K., Rahman, N. H. A., & Meliana, L. N. (2025). The Effect of Environmental Performance, Environmental Management System, and Institutional Ownership on Carbon Emission Disclosure with Media Exposure as a Moderating Variable. *International Journal of Energy Economics and Policy*, 2(3), 206–218. <https://doi.org/10.32479/ijeep.20659>