

## VOLUNTARY ADOPTION OF SASB STANDARDS AND SUSTAINABILITY REPORTING IN THE BRAZILIAN ELECTRIC POWER SECTOR

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### ABSTRACT

The objective of this study is to assess the level of adherence of sustainability reports issued by publicly traded companies in the Brazilian electric power sector to the SASB standards applicable to the sector. A content analysis was conducted on 72 sustainability reports, focusing on the voluntary disclosure of sustainability reporting metrics established by the Sustainability Accounting Standards Board, covering companies in the Electric Power subsector listed on B3 S.A. – Brasil, Bolsa, Balcão (B3) for the years 2022, 2023, and 2024. The sector is recognized for exhibiting a high level of sustainability disclosure, and companies are subject to a minimum standard of social and environmental disclosure, in accordance with the enforcement required by the regulatory agency. The results indicate that the sector displays different levels of maturity in the disclosure of information aligned with SASB standards, with a few companies showing high adherence and the majority presenting medium to low levels of disclosure. Over the period analyzed, there was only a slight overall increase in the level of adherence. This finding demonstrates that systematic adoption of SASB requirements has not yet been achieved. Seeking such alignment may facilitate the adoption of IFRS sustainability disclosure standards, as well as enhance transparency and comparability of financially material information. The relevance of this study extends beyond the industry and geographic context in which it was applied, as it may serve as a starting point for future research on financial materiality in sustainability disclosure. This analysis provides relevant information for regulators, companies, investors, and other stakeholders.

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## 1 INTRODUCTION

Sustainability disclosure is an important source of information for investors and other stakeholders, as it enables companies to present their impacts and practices related to environmental, social, and governance aspects, in addition to economic performance (Yu et al., 2023). This disclosure trend is most often associated with institutional history, the regulatory environment, risk exposure, pressure from environmental groups, media attention, and political costs, suggesting that high-quality sustainability disclosures not only affect financial statements but also have implications for corporate governance, risk management, reputation, and corporate outlook (Iatridis, 2013).

Sustainability reports initially emerged as a voluntary corporate practice aimed at meeting the demands of shareholders and other stakeholders (Michelon, 2011). In this context, several initiatives have arisen over recent decades proposing standards and frameworks for the disclosure of various sustainability aspects, such as the standards issued by the Sustainability Accounting Standards Board (SASB) (Hales, 2021; IFRS Foundation, 2024a). Disclosures required under SASB standards are grounded in materiality based on the potential significant economic impacts of sustainability issues related to companies' activities (Laine et al., 2022).

SASB standards focus primarily on investors as the main stakeholder group (Laine et al., 2022). Among the 77 industries covered by its disclosure guidelines, the electric power sector presents several characteristics that make the assessment of the quality of its sustainability reporting particularly relevant, including greenhouse gas emissions levels, the use of natural resources in operations, current demands for energy transition, and investments in technological innovation. For the electric power sector, the standard establishes a set of sustainability disclosure topics organized into 19 metrics (IFRS Foundation, 2024a).

In Brazil, the electric power sector is regulated by the National Electric Energy Agency (Aneel) and organized under a public-private system designed to ensure that society has access to this essential service. As one of the ten countries that consume and generate the most energy worldwide, the Brazilian electric power market attracts investors, driven in part by its high potential for clean energy generation, positioning the country among those with the highest levels of electricity generation from renewable sources (Brazil, 2022; Empresa de Pesquisa Energética, 2024). Companies in this sector play an important role in social and environmental responsibility due to their significant economic, environmental, and social impacts through sustainability reporting. For this reason, Aneel establishes basic criteria for the disclosure of social and environmental information, while the choice of more comprehensive reporting standards remains at the discretion of each company (Ribeiro et al., 2017; Aneel, 2022).

Although the literature suggests that customized sustainability metrics, such as those proposed by SASB, increase informational relevance and may generate financial benefits, this evidence is primarily concentrated in international contexts (Busco et al., 2020; Eng et al., 2022; Carvajal and Nadeem, 2023). In the Brazilian electric power sector, studies have been largely limited to analyses of the evolution of environmental disclosure and assessments of the use of general disclosure frameworks (Gubiani et al., 2013; Lugoboni et al., 2015; Binotti and Besen, 2019), leaving the application of sector-specific material metrics and their effects on disclosure quality relatively underexplored. In light of this, considering the role played by Brazilian electric power companies in social and environmental responsibility, the relevance of SASB standards as a complementary guideline to improve transparency, comparability, and the quality of sustainability disclosures, the following research question arises: what is the level of adherence of sustainability reports issued by Brazilian companies in this sector to this standard? The objective

of this study is to assess the level of adherence of sustainability reports issued by publicly traded companies in the Brazilian electric power sector to the SASB standard applicable to the sector.

Due to the voluntary nature of sustainability disclosure, concerns may arise regarding the quality of the information presented (Helfaya and Whittington, 2019). Considering the importance of the sector to the country's economic development, the need to communicate material sustainability-related issues, particularly in the context of environmental concerns, limited resources, and the targets established by the Sustainable Development Goals (SDGs), as well as the imminent mandatory adoption of such disclosure in Brazil, it is essential to assess the current stage of sustainability communication practices (United Nations, 2016; Comissão de Valores Mobiliários [CVM], 2023). This assessment can be carried out based on a clear framework and well-defined metrics, such as those proposed by SASB, enabling the identification of the most appropriate path to ensure improvements in the quality of disclosure of sustainability-related material topics.

## **2 THEORETICAL FRAMEWORK**

Concerns regarding climate change and natural resource management have raised debates over recent decades, including within the field of accounting (Setiawan et al., 2023). At the same time, regulators and corporations have increased their attention to sustainability reporting (Pizzi et al., 2023). Sustainability disclosure can be considered one of the main means through which organizations communicate with their various stakeholders about their performance and impacts related to governance, environmental, and social aspects (ESG), as well as the risks and strategies associated with the impacts generated by their activities (Iatridis, 2013; Zaid and Issa, 2023).

Sustainability disclosure arises from the need for companies to take responsibility for their impacts and for how they manage their resources in order to create value with a focus on sustainable development (Rusu et al., 2024). In addition, there is social pressure for companies to do so, as impacts and risks, particularly those related to climate change, are increasingly being felt worldwide (Mbanyele and Muchenje, 2022). This has led to a shift in societal perspectives, which can be observed, for example, in investor behavior when selecting environmentally and socially responsible companies for portfolio diversification (Foley et al., 2024).

Maechler (2023) points out that environmental information has increasingly attracted the attention of standard setters as it has gradually become relevant to decision making, and that the transition to an environmentally oriented economy depends on the provision of information that meets investors' needs. The reporting of sustainability topics is widely discussed, and several institutions, motivated by organizations' interest in disclosing such information in a more structured manner, have proposed frameworks and standards to guide the reporting of performance on topics beyond financial data (Zaid and Issa, 2023). Initiatives such as GRI, TCFD, Integrated Reporting, and SASB have emerged over recent decades to support organizations in reporting relevant nonfinancial information to their diverse stakeholders (Truant et al., 2017).

In addition to these initiatives, and with the aim of expanding and standardizing sustainability disclosure, the IFRS Foundation, the nonprofit organization responsible for International Financial Reporting Standards, issued two sustainability disclosure standards: IFRS S1, General Requirements for Disclosure of Sustainability-related Financial Information, and IFRS S2, Climate-related Disclosures. These are the first two standards in a set based on materiality that companies may use to disclose information on sustainability-related risks and opportunities (Hales, 2021; IFRS Foundation, 2023).

Within this perspective, even before issuing the IFRS sustainability standards, the International Sustainability Standards Board (ISSB), part of the IFRS Foundation, incorporated the Sustainability Accounting Standards Board (SASB) in 2022, the body responsible for issuing SASB standards (IFRS Foundation, 2024a). SASB principles are based on materiality to define

sustainability disclosure topics and metrics for each industry according to the Sustainable Industry Classification System (SICS), which groups similar companies based on their sustainability-related risks and opportunities (IFRS Foundation, 2024b). Martins (2023) argues that the main benefits of SASB include providing investors with a list of sustainability issues to be considered and enabling companies to identify issues that are important to their activities and how to disclose them.

Eccles and Serafeim (2013) note that many companies launch sustainability programs expecting to be rewarded for good practices, even when such practices are not relevant to their operations and strategies. The authors recommend initiatives that direct these efforts toward financially material aspects, such as the SASB materiality approach. Following its launch and adoption by companies in several countries, numerous studies have examined the application of SASB standards. Carvajal and Nadeem (2023), in a study conducted in Australia, find that there are financial incentives for the disclosure of sustainability information, particularly when aligned with SASB-defined materiality. Busco et al. (2020) analyzed 91 companies that adopted the SASB framework for ESG disclosure and reported promising results, despite the relatively small number of adopting firms at the time. A study conducted in the United States using data from the SASB Navigator and ESG scores from Bloomberg shows that customized sustainability metrics and narratives provide incremental information about market value and stock prices, indicating that SASB materiality may be economically advantageous for companies (Eng et al., 2022).

The Brazilian electric power sector, given its potential and the need for expansion to meet growing demand, has attracted the attention of companies and investors from several countries (Iasco-Pereira, 2023). With respect to sustainability disclosure, many Brazilian companies voluntarily report information on their environmental and social impacts (Rover et al., 2012; Silva et al., 2024). The energy sector interferes with the environment and society and influences the economy (Stern, 2011). Society and stakeholders demand information beyond financial data. In this context, Ferreira et al. (2020) point out that there is concern among companies in the sector about disclosing social and environmental information, even on a voluntary basis. The sector also features an annual award for best disclosure of financial and nonfinancial information, organized by the Brazilian Association of Accountants in the Electric Power Sector (Abraconee) (Abraconee, 2017).

Among the SASB standards is Electric Utilities and Power Generators, which is specifically designed for the electric power industry across generation, transmission, and commercialization activities, covering different energy sources and both regulated and unregulated entities. This standard presents sustainability disclosure topics, topic-specific metrics, and quality metrics for the sector, enabling organizations to report on essential sustainability issues related to their activities (IFRS Foundation, 2023). Previous studies have already evaluated sustainability disclosure in the Brazilian electric power sector, including analyses of environmental information presented in management reports (Gubiani et al., 2013), evidence of progress in sustainability reports using the Global Reporting Initiative (GRI) (Lugoboni et al., 2015), and increases in the disclosure of environmental costs and investments (Binotti & Besen, 2019).

### **3 METHODOLOGICAL PROCEDURES**

This study aims to assess the level of adherence of sustainability reports issued by publicly traded companies in the Brazilian electric power sector to the SASB standard applicable to the sector. The research sample comprises companies belonging to the Public Utilities sector and the Electric Power subsector listed on B3 S.A., Brasil, Bolsa, Balcão (B3). Following the manual collection of sustainability reports from the companies' official websites, as shown in Table 1, the sustainability reports of 24 companies were cataloged and analyzed with respect to the voluntary

disclosure of sustainability reporting metrics established by SASB for the years 2022, 2023, and 2024.

**Table 1**  
*Filtering and selection process of the final study sample*

DESCRIPTION	TOTAL
Companies belonging to the Public Utilities sector and the Electric Power subsector listed on B3 in 2022	64
(-) Companies that did not publish a sustainability report for the year 2022	7
(-) Duplicate sustainability reports, as some companies disclose reports on an aggregated basis for the economic group	33
<b>Total number of companies in the final sample</b>	<b>24</b>

*Note.* The reports were collected from the companies' official websites. When the reports were not available on these websites, the availability of the information was verified in Aneel's database through the Financial Information Center. Source: Prepared by the authors.

The present study adopts the sustainability disclosure metrics proposed by the Sustainability Accounting Standards Board (SASB, now incorporated into the ISSB), one of the major international organizations with a high level of legitimacy (Stolowy and Paugam, 2023). It should be noted that, although the Sustainability Accounting Standards issued by SASB comprise a set of 77 industry-specific standards (SASB, 2023), the assessment in this study is specifically directed at companies operating in the electric power sector. In Brazil, this sector is recognized for exhibiting a high level of sustainability disclosure across the economic, social, and environmental dimensions (Parente et al., 2014). These companies are subject to a minimum standard of social and environmental responsibility disclosure, in accordance with the enforcement required by the sector's regulatory agency, Aneel, while each company retains discretion in choosing how to prepare its reports based on more comprehensive standards (Aneel, 2022; Garcia dos Reis et al., 2015). This flexibility in the choice of complementary standards therefore enables the evaluation of sustainability disclosure based on SASB on a voluntary basis.

Tables 2 and 3 present the topics and metrics of the Sustainability Accounting Standard applicable to companies operating in the electric power sector, namely Electric Utilities and Power Generators. The sustainability disclosure topics for the electric power sector are organized into nine thematic areas, which are subdivided into a total of nineteen metrics, either quantitative or qualitative, in addition to five activity metrics that are exclusively quantitative in nature.

**Table 2**  
*Sustainability disclosure topics and metrics*

Topic	Metrics	Category	Unit of Measurement	Code
Greenhouse Gas Emissions & Energy Resource Planning	(1) Gross global Scope 1 emissions, percentage covered under (2) emissions- limiting regulations and (3) emissions- reporting regulations	Quantitative	Metric tonnes (t) CO <sub>2</sub> -e, Percentage (%)	IF-EU-110a.1
	Greenhouse gas (GHG) emissions associated with power deliveries	Quantitative	Metric tonnes (t) CO <sub>2</sub> -e	IF-EU-110a.2
	Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Discussion and Analysis	n/a	IF-EU-110a.3

Air Quality	Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) particulate matter (PM10), (4) lead (Pb), and (5) mercury (Hg); percentage of each in or near areas of dense population	Quantitative	Metric tonnes (t), Percentage (%)	IF-EU-120a.1
Water Management	(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress	Quantitative	Thousand cubic metres (m <sup>3</sup> ), Percentage (%)	IF-EU-140a.1
	Number of incidents of non-compliance associated with water quality permits, standards and regulations	Quantitative	Number	IF-EU-140a.2
	Description of water management risks and discussion of strategies and practices to mitigate those risks	Discussion and Analysis	n/a	IF-EU-140a.3
Coal Ash Management	(1) Amount of coal combustion products (CCPs) generated, (2) percentage recycled	Quantitative	Metric tonnes (t), Percentage (%)	IF-EU-150a.1
	Description of coal combustion products (CCPs) management policies and procedures for active and inactive operations	Discussions and Analysis	n/a	IF-EU-150a.3
Affordable Energy	Average retail electric rate for (1) residential, (2) commercial, and (3) industrial customers	Quantitative	Rate	IF-EU-240a.1
	(1) Number of residential customer electric disconnections for non-payment, (2) percentage reconnected within 30 days	Quantitative	Number, Percentage (%)	IF-EU-240a.3
	Discussion of impact of external factors on customer affordability of electricity, including the economic conditions of the service territory	Discussion and Analysis	n/a	IF-EU-240a.4
Workforce Health and Safety	(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR) for (a) direct employees and (b) contract employees	Quantitative	Rate	IF-EU-320a.1
End-Use Efficiency and Demand	Percentage of electric load served by smart grid technology	Quantitative	Percentage (%) by megawatt- hours (MWh)	IF-EU-420a.2
	Customer electricity savings from efficiency measures, by market	Quantitative	Megawatt- hours (MWh)	IF-EU-420a.3
Nuclear Safety and Emergency Management	Total number of nuclear power units, broken down by results of most recent independent safety review	Quantitative	Number	IF-EU-540a.1
	Description of efforts to manage nuclear safety and emergency preparedness	Discussion and Analysis	n/a	IF-EU-540a.2
Grid Resilience	Number of incidents of non-compliance with physical or cybersecurity standards or regulations	Quantitative	Number	IF-EU-550a.1
	(1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), and (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days	Quantitative	Minutes, Number	IF-EU-550a.2

Note. "n/a" corresponds to not applicable.  
Source: SASB (2023, pp. 6-7).

**Table 3**  
*Activity metrics*

Activity Metrics	Category	Unit of Measurement	Code
Number of: (1) residential, (2) commercial, and (3) industrial customers served	Quantitative	Number	IF-EU-000.A
Total electricity delivered to: (1) residential, (2) commercial, (3) industrial, (4) all other retail customers, and (5) wholesale customers	Quantitative	Megawatt-hours (MWh)	IF-EU-000.B
Length of transmission and distribution lines	Quantitative	Kilometers (km)	IF-EU-000.C
Total electricity generated, percentage by major energy source, percentage in regulated markets	Quantitative	Megawatt hours (MWh), Percentage (%)	IF-EU-000.D
Total wholesale electricity purchased	Quantitative	Megawatt hours (MWh)	IF-EU-000.E

Source: SASB (2023, pp. 8).

Based on the metrics described above, a checklist was developed, and a content analysis was conducted on the collected sustainability reports following Bardin (2016). This method was chosen due to the large number of metrics included in the standard, the diversity of information presented in the analyzed reports (text, images, and other formats), and the need to process the data in an objective and systematic manner through an analysis that goes beyond simple reading (Cardoso et al., 2021). Based on this analysis, the level of disclosure for each metric was categorized as “Yes” when the company fully met all disclosure requirements of the metric, “Partial” when the company only partially met the disclosure requirements, either in terms of content or the form of information presented, and “No” when the company did not meet the disclosure requirements of the metric. Table 4 presents the score assigned to each metric, from which a disclosure score (0–100%) aligned with the SASB standard applicable to the electric power sector was calculated for each company. To this end, the disclosure score obtained by each company was divided by the maximum possible score (100%), assuming full adherence to all metrics applicable to the company. Some metrics, as recommended by the standard itself, were considered not applicable to certain companies in the sample because they did not fall within their scope and were therefore categorized as “Not Subject to Application (NSA)”.

**Table 4**  
*Score assigned in the disclosure analysis based on the SASB standard*

Categorization	Assigned Score
Yes	1
Partial	0.5
No	0
NSA	-

Source: Prepared by the authors.

Table 5 presents the codifiers derived from the structure of the SASB standard and the analytical strategy used for each of them. Based on these codifiers, it was possible to identify themes and terms that support the process of verifying information in the companies’ sustainability reports.

**Table 5**  
*Codifiers and analytical strategies*

Codifiers	Analytical Strategies
Metrics	The standard specifies the content that the organization is required to disclose for each metric, which makes it possible to identify whether the requested content is included in the document under analysis.
Categories	The standard indicates whether the information should be presented in quantitative or qualitative form (Discussion and Analysis).
Units of Measurement	
Code	The standard provides specific units of measurement for quantitative metrics.

Source: Prepared by the authors.

Finally, the data were organized and analyzed using descriptive statistics, which made it possible to obtain comparable information by topic, metric, company, and year. This approach enabled synthesis and comparison of the results regarding the levels of SASB disclosure among the companies analyzed.

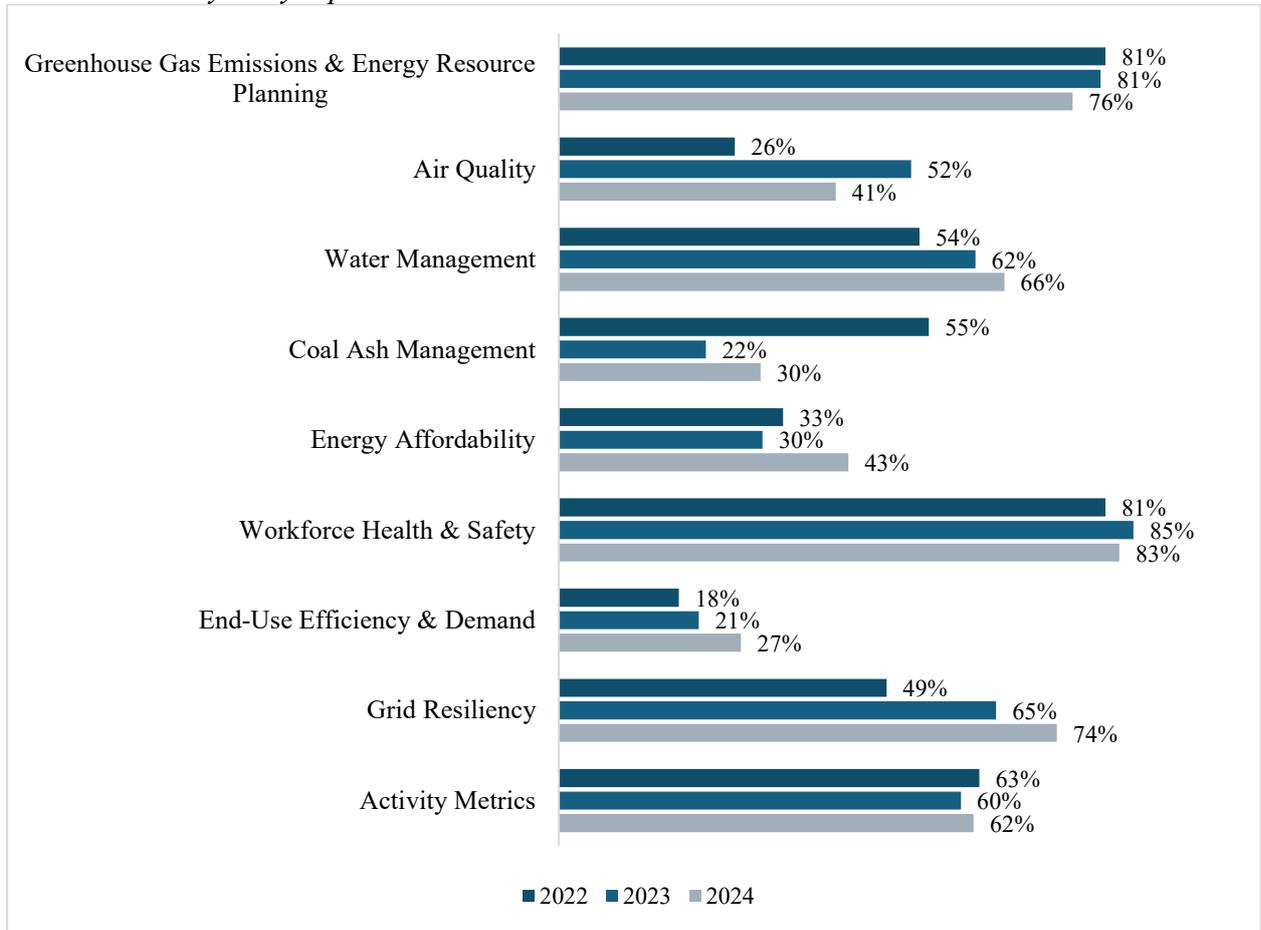
#### 4 RESULTS

Figure 1 shows the level of disclosure by topic, and Table 6 complements the analysis by presenting the level of disclosure by metric. In the topic Greenhouse Gas (GHG) Emissions and Energy Resource Planning, companies in the sector exhibited a good level of disclosure, despite a 5% decrease in the final year of analysis. As shown in Table 6, this result reflects the disclosure of information on GHG emissions inventories [IF-EU-110a.1 and IF-EU-110a.2], which can be explained by the fact that many companies in Brazil publish their GHG inventories (Fundação Getulio Vargas, 2025). By contrast, the discussion of long- and short-term targets and strategies to manage Scope 1 emissions was the metric with the lowest level of disclosure.

In the Air Quality topic, only 41% of the analyzed companies disclosed information on emissions of hazardous air pollutants in 2024. Among companies in the generation segment, most operate energy sources are considered clean. Nevertheless, it is not possible to determine whether their operations emit such pollutants, as this information is not disclosed. Companies may choose not to report on this topic in order to avoid reputational risks associated with air quality impacts arising from their operations (Gohar et al., 2025).

The Affordable Energy topic presents a relatively low level of disclosure, despite an increase in 2024. This indicates that information on tariffs, disconnections, and discussions of external factors affecting access to electricity is limited in the disclosures of most companies. Companies provide little discussion of their impact in this area, particularly when considering its connection to Sustainable Development Goal No. 7, which establishes, among its targets for 2030, the guarantee of universal access to modern energy (United Nations, 2016). Another factor reinforcing the need for greater discussion of affordability is that a portion of the Brazilian population still lacks access to electricity (Instituto de Energia e Meio Ambiente, 2021).

**Figure 1**  
Disclosure analysis by topic



Source: Prepared by the authors.

**Table 6**  
*Disclosure analysis by metric*

Indicator	Year	2022					2023					2024				
		Topic	Yes	P.	NSA	No	%	Yes	P.	NSA	No	%	Yes	P.	NSA	No
<b>Greenhouse Gas (GHG) Emissions and Energy Resource Planning</b>																
IF-EU-110a.1	(1) Gross global Scope 1 emissions, percentage covered under (2) emissions-limiting regulations and (3) emissions-reporting regulations	24	0	0	0	100%	22	0	0	2	92%	22	0	0	2	92%
IF-EU-110a.2	Greenhouse gas (GHG) emissions associated with power deliveries	17	0	0	7	71%	20	0	0	4	83%	18	0	0	6	75%
IF-EU-110a.3	Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	17	1	0	6	73%	14	4	0	6	67%	11	8	0	5	63%
<b>Air Quality</b>																
IF-EU-120a.1	Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) particulate matter (PM10), (4) lead (Pb), and (5) mercury (Hg); percentage of each in or near areas of dense population	3	5	3	12	26%	11	0	3	10	52%	7	0	7	10	41%
<b>Water Management</b>																
IF-EU-140a.1	(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress	9	10	1	4	61%	9	10	1	4	61%	17	2	1	4	78%
IF-EU-140a.2	Number of incidents of non-compliance associated with water quality permits, standards and regulations	4	0	3	17	19%	10	0	2	12	45%	9	0	2	13	41%
IF-EU-140a.3	Description of water management risks and discussion of strategies and practices to mitigate those risks	17	0	3	4	81%	16	3	2	3	80%	17	1	2	4	80%
<b>Coal Ash Management</b>																
IF-EU-150a.1	(1) Amount of coal combustion products (CCPs) generated, (2) percentage recycled	2	1	19	2	50%	1	1	16	6	19%	2	0	19	3	40%
IF-EU-150a.2	Description of coal combustion products (CCPs) management policies and procedures for active and inactive operations	3	0	19	2	60%	2	0	16	6	25%	1	0	19	4	20%
<b>Affordable Energy</b>																
IF-EU-240a.1	Average retail electric rate for (1) residential, (2) commercial, and (3) industrial customers	5	1	8	10	34%	3	0	13	8	27%	3	2	12	7	33%
IF-EU-240a.3	(1) Number of residential customer electric disconnections for non-payment, (2) percentage reconnected within 30 days	2	3	8	11	22%	2	0	13	9	18%	5	0	12	7	42%



IF-EU-240a.4	Discussion of impact of external factors on customer affordability of electricity, including the economic conditions of the service territory	7	0	8	9	44%	5	0	13	6	45%	6	1	12	4	54%
<b>Workforce Health and Safety</b>																
IF-EU-320a.1	(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR) for (a) direct employees and (b) contract employees	18	3	0	3	81%	20	1	0	3	85%	19	2	0	3	83%
<b>End-Use Efficiency and Demand</b>																
IF-EU-420a.2	Percentage of electric load served by smart grid technology	2	0	3	18	10%	2	0	12	10	17%	2	0	12	10	17%
IF-EU-420a.3	Customer electricity savings from efficiency measures, by market	5	1	3	15	26%	3	1	10	10	25%	3	3	12	6	38%
<b>Nuclear Safety and Emergency Management</b>																
IF-EU-540a.1	Total number of nuclear power units, broken down by results of most recent independent safety review	0	0	23	1	0%	0	0	22	2	0%	0	0	22	2	0%
IF-EU-540a.2	Description of efforts to manage nuclear safety and emergency preparedness	0	0	23	1	0%	0	0	22	2	0%	0	0	22	2	0%
<b>Grid Resilience</b>																
IF-EU-550a.1	Number of incidents of non-compliance with physical or cybersecurity standards or regulations	9	0	0	15	38%	12	0	0	12	50%	17	0	0	7	71%
IF-EU-550a.2	(1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), and (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days	9	0	9	6	60%	8	0	14	2	80%	8	1	13	2	77%
<b>Activity Metrics</b>																
IF-EU-000.A	Number of: (1) residential, (2) commercial, and (3) industrial customers served	10	4	6	4	67%	10	2	5	7	58%	11	1	3	9	55%
IF-EU-000.B	Total electricity delivered to: (1) residential, (2) commercial, (3) industrial, (4) all other retail customers, and (5) wholesale customers	6	5	6	7	47%	10	0	3	11	48%	9	4	3	8	52%
IF-EU-000.C	Length of transmission and distribution lines	16	0	7	1	94%	15	0	6	3	83%	13	0	8	3	81%
IF-EU-000.D	Total electricity generated, percentage by major energy source, percentage in regulated markets	17	2	2	3	82%	13	2	4	5	70%	17	2	2	3	82%
IF-EU-000.E	Total wholesale electricity purchased (MWh)	5	0	2	17	23%	8	0	4	12	40%	8	0	3	13	38%

Note. "P." corresponds to partial and "%" corresponds to percentage  
Source: Prepared by the authors.

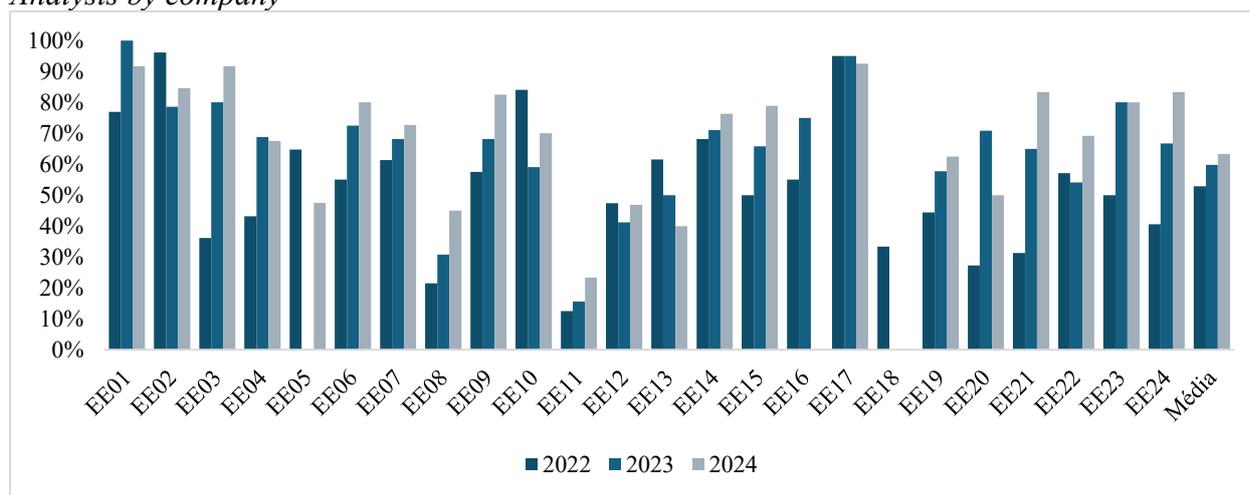
In the topic Workforce Health and Safety, a high level of commitment by companies to information disclosure is observed, with percentages exceeding 80% in all years analyzed. In the electric power sector, this topic mainly involves the disclosure of occupational accidents, given the hazardous nature of essential activities, especially in companies engaged in transmission and network maintenance. In contrast, in the topic End-Use Efficiency and Demand, the disclosure of information on energy efficiency and energy savings remained substantially low throughout the period.

Regarding Grid Resilience, the information disclosed shows a medium level of evidence among the analyzed companies (48%). However, when examining the metrics individually, disclosure related to the number of incidents is relatively low (38%), whereas the metric concerning service interruptions is more widely disclosed (60%). One noteworthy observation is that none of the companies included in this study report information on Nuclear Safety and Emergency Management, as they do not generate energy from this source.

Based on the data presented in Figure 1 and Table 6, it can be observed that, overall, the metrics with the highest levels of disclosure correspond to greenhouse gas (GHG) emissions and workforce health and safety in the analyzed sector. This indicates progress toward mandatory disclosure in line with IFRS S2 – Climate-related Disclosures, although companies still need to better develop qualitative information on strategy, targets, and progress toward these targets. The launch of an IFRS S standard on social capital is expected, making it important for companies to already demonstrate some effort in disclosing information related to this topic.

With respect to GHG emissions disclosure, this result may be explained by company size, the disclosure of indicators proposed by the GRI, and the tendency for companies exposed to higher GHG emission risks to present higher levels of disclosure on these aspects (Prado-Lorenzo, 2009; Gerged et al., 2021). Regarding workforce health and safety, meeting stakeholder demands and the use of these indicators to strengthen corporate social policies and practices are among the main drivers of such disclosures (Monteiro et al., 2023). Finally, Figure 2 presents the results by company for the years analyzed.

**Figura 2**  
*Analysis by company*



Source: Prepared by the authors.

Among the companies analyzed, three achieved adherence levels close to 100% to the sector-specific SASB standard in 2024 (EE01 at 91.67%, EE03 at 91.67%, and EE17 at 95%). This indicates that these companies disclosed information on almost all metrics suggested by the standard, whether qualitative or quantitative, in accordance with the standard’s specifications in

their sustainability reports. In contrast, there are companies with low levels of disclosure (EE02 at 23.33%) or no disclosure of these metrics during the period (EE16 and EE18). The overall average level of disclosure showed a slight increase over the years analyzed, reaching 63.31% in 2024. These findings are consistent with a similar study conducted on electric power companies in the United States, which showed that companies exhibiting high levels of disclosure for one sustainability metric may not demonstrate the same performance across other metrics (Eng and Fikru, 2022).

Finally, the analysis based on SASB metrics makes it possible to compare information across companies within the same sector with respect to the disclosure of financially material sustainability metrics.

## 5 CONCLUSION

The objective of this study was to analyze the level of adherence of sustainability reports issued by publicly traded companies in the Brazilian electric power sector to the SASB standard applicable to the sector. Based on the results presented, the electric power companies analyzed in this study still need to make significant progress in sustainability disclosure, particularly under the SASB guidelines. The findings indicate that the sector exhibits different levels of maturity in the disclosure of information aligned with SASB, with some companies showing high adherence while others demonstrate low performance.

It is also observed that, over the past three years, there has been no substantial growth in adherence levels, which points to a stagnation in the advancement of disclosure practices. The average adherence rate of 63.31 percent in 2024 suggests that the systematic incorporation of the standard's material metrics has not yet been consolidated among the analyzed companies. This indicates that, even in a sector that has produced sustainability reports for several years and operates under a high level of regulation in Brazil, there remains a need to expand the disclosure of financially material sustainability information. This process may be essential to facilitate the future mandatory adoption of IFRS S1 and IFRS S2, as well as other standards that are yet to be issued. In addition, it may strengthen transparency and improve information comparability.

The relevance of this study extends beyond the electric power sector and the geographic context in which it was conducted. It may serve as a foundation for future research aimed at improving sustainability disclosure and contribute to clarifying the implementation of sustainability standards issued by the IFRS Foundation, whether on a voluntary or mandatory basis. Future studies may also explore the relationship between firm characteristics and disclosure levels, as well as conduct comparative analyses using samples from other sectors and across different countries. Regarding to limitations, the methodology employed may be subject to inherent biases, and the study was limited to publicly traded companies in the Brazilian electric power sector.

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## CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest regarding this submitted work.

## DATA AVAILABILITY

The dataset supporting the results of this study is not publicly available.

**AUTHOR CONTRIBUTIONS**

<b>Roles</b>	<b>1° author</b>	<b>2° author</b>	<b>3° author</b>
Conceptualization	♦		♦
Data Curation	♦	♦	♦
Formal Analysis	♦	♦	
Funding Acquisition	♦		
Investigation	♦	♦	
Methodology	♦	♦	
Project Administration	♦		♦
Resources	♦	♦	
Software			♦
Supervision		♦	♦
Validation	♦	♦	♦
Visualization	♦		
Writing – Original Draft	♦	♦	♦