The Possibility of Measuring Environmental Sustainability in the Balance Sheet Based on Electronic Information Disclosure Technologies

Omar Abdulhameed and Fedaa Obaid
Technical College Management / Baghdad, Middle Technical University, 10047 Baghdad, Iraq
dbc2019@mtu.edu.iq, fedaaadnan@mtu.edu.iq

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Abstract: The research aims to analyze the accuracy and credibility of financial information related to environmental sustainability to contribute to understanding and promoting environmental science practices. Moreover, it consolidates the advantage of technologists in the electronic disclosure of information in the company's work. This aim was achieved through an applied study at Karsan Industrial Company from 2017 to 2022. To prove the existence of a measurement relationship between non-financial information related to the environmental aspect, presented in the electronically disclosed sustainability reports, and financial information related to the balance sheet, appearing in the financial statements prepared by IAS1 requirements. The most prominent finding of the research is the ability to evaluate the environmental performance aspect of sustainability related to the balance sheet based on measuring environmental impacts financially. Most prominent suggestion shown by the research is that companies should keep pace with the sustainability standards set by international committees and councils in the application, adhere to them, and keep pace with the related technology standards.

1 INTRODUCTION

Environmental sustainability becomes increasingly important due to the increasing damage caused by human environmental activities. Businesses must adopt sustainable practices to reduce environmental impact and secure the planet's future. Accounting is greatly affected by this constant change. Historically, accounting dealt primarily with financial activities such as profits, revenues, and costs. Companies must now consider many factors, including the environment, in their decision-making processes. Environmental sustainability in financial accounting is about considering the environmental impacts of business operations in financial reporting. Companies must disclose their environmental impact and performance. The GRI and SASB create standards for companies to track and disclose environmental impact. These rules help make informed decisions about the company's behaviour and activities. Environmental sustainability affects how companies evaluate their performance and reporting needs. The feasibility of establishing a measurable link between the information provided in the environmental aspect of sustainable reports and the balance sheet shown in the balance sheet Using sustainability models and the possibility of estimating these amounts is a topic that requires further research. Therefore, the research problem was represented by the following: Is it possible to reach a financial measurement relationship between the information in the environmental report and the balance sheet based on sustainability models, and can we estimate these amounts? The importance of research was focused on monitoring the financial work of environmental sustainability in companies. Also, monitoring the financial aspects of environmental sustainability practices within companies can motivate companies that have not yet integrated sustainable practices into their operations. This can stimulate a shift towards greater sustainability in their business practices. Examining the environmental aspect of sustainable reporting and the reliability of environmental sustainability data is a significant area of interest in environmental science research. This research aims to analyze the accuracy and reliability of financial information related to the environmental sustainability of the financial center to contribute to understanding and promoting environmental and financial practices.

2 CONCEPTUAL FRAMEWORK

2.1 Sustainability

Sustainability means continuing for an indefinite period. We must acknowledge the mathematical fact that steady growth (a constant percentage per year) produces huge numbers in modest periods. For example, a population of 10,000 people growing at 7% per year will become 10,000,000 people in just 100 years [1], from these two lists, we can see that the term sustainable growth means increasing to infinity. This means that the increasing quantity tends to become unlimited in size [2]. The researcher assumes that the term sustainability has become oversaturated in use, which has led to its inclusion in a myriad of concepts but ultimately needing a specific meaning. The researcher has engaged in concepts such as creative politics, innovative individuals, sustainable food systems, cultural sustainability, regional innovation, energy transition, etc. However, it is argued that these concepts must fully summarize sustainability's true essence [3]. The concept of sustainability describes a development capable of covering today's needs for a healthy environment, social justice, and economic prosperity without limiting the ability of future generations to meet their needs. Preserving the natural environment is a prerequisite for a well-functioning economy and social justice, and the Brundtland Conference, in its report Our Common Future, describes sustainability as follows [4].

The United Nations Department for Policy Coordination and Sustainable Development (DPCSD) has developed its program to develop sustainability indicators. Based on input from various UN agencies and several individuals, they decided to use the OECD's Performance Monitoring System as a starting point, but for the potential of scaling up non-environmental dimensions of sustainability were added to the PSR (pressure-state-response) approach, resulting in the emergence of the DSR (driving force -state- response) scheme aims to reflect the economic, social and institutional dimensions of sustainability on an equal footing with environmental concerns.

The researcher believes that the Prism model is a means of understanding sustainability that recognizes the interconnection between the economic, social, and environmental dimensions of sustainability in addition to the institutional dimension. Through it, it is possible to develop policies, balance dimensions, and increase the accuracy of actual information related to sustainable development. In recent years, alternative models of the sustainability triangle have been proposed, among the most interesting being the prism and egg models. The sustainable development perspective adapted from the Wuppertal School stipulates four dimensions:

- Economic dimension (man-made capital).
- Environmental dimension (natural capital).
- Social dimension (human capital).
- Institutional dimension (social capital).

2.2 Sustainability Accounting Standards

2.2.1 SAS Standards

In this context, accounting principles formed within the framework of basic accounting concepts are the theoretical foundations of accounting business; accounting principles are not rules that apply everywhere and at all times. On the other hand, standards are more detailed regulations than accounting principles and ensure that concepts and principles are reflected in practice.

SASB standards serve as a guiding framework for environmental, social and governance of economic units to identify sustainability issues that may affect economic units' financial performance and enterprise value in 77 industries. These industry-specific standards include six disclosure topics and 13 accounting metrics across five critical dimensions of environmental sustainability, social capital, human capital, business model, innovation, leadership and governance [5].

Economic units worldwide use SASB standards for annual reports, financial documents, economic unit websites, and sustainability reports. SASB standards play an essential role in the design of climate-related disclosure and ISSB's sustainability-related financial disclosure. SASB standards enable the effective implementation of an integrated reporting framework, providing the comparability that investors seek. SASB standards recognize sustainability information as financially relevant to understanding how a business creates value. The Global Reporting Initiative (GRI) Sustainability Reporting Standards and the Sustainability Accounting Standards Board (SASB) serve distinct but synergistic goals in sustainability reporting. At their core, the GRI assesses the impacts of an economic entity on the global environment, while the SASB examines the impacts of the global environment on an economic entity [6].

2.2.2 IFRS S1 Standard

IFRS S1 and S2 were issued in June 2023 to develop globally accepted sustainability reporting standards within the current financial reporting framework. These standards also aim to provide consistent and comparable information about an organization's ESG performance, sustainability-related risks, ESG performance opportunities and potential financial impacts of sustainability issues. By including sustainability in financial reporting, the ISSB aims to enhance transparency, accountability and decision-making for stakeholders [7].

According to paragraph B38 of IFRS S1, an economic entity must disclose financial information related to sustainability while adhering to the same reporting limits used for financial reporting objectives [8]. Paragraph 21 of IFRS S1 requires the economic entity to provide information to help primary users understand the links between the elements to which the information relates [9]. Paragraph 34 states that the economic entity must disclose information that enables users of general-purpose financial reports to understand the effects of the risks and opportunities related to sustainability [10].

2.2.3 IFRS S2 Standard

Over the past ten years, society has been concerned with the environment and the actors involved in the economy regarding sustainable development. The definition of sustainability has been explained by several authors [11], but focusing on environmental accounting, further research should be considered on this relationship (Accounting and the Environment), and a further step can be taken to ensure that environmental and financial issues are addressed [12]. Economic units must measure the environmental impact of organizations' social objectives against productive activity. On the other hand, environmental management accounting must be considered in integrated planning, which affects organizational and financial processes [13], [14].

2.3 Environmental Practices

The 21st Council of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) held in December in Paris led to a global agreement on emissions reductions. With the Paris Agreement, the Sustainable Development Goals would have done more to address climate change. Sustainable Development Goal 13 was to consider the United Nations Framework Convention on Climate Change by respecting the process. Building a sustainable global economy in environmental protection will help reduce greenhouse gas emissions that cause climate change [15]-[17].

The SASB has developed sector-specific key performance indicators (KPI) for sustainability, which complement the principles of the CDSB framework on reporting environmental information. In the primary economic unit report (CDSB, 2022), economic unit environmental practices refer to economic unit activities related to the conservation of natural resources and efforts Made to protect the environment; these efforts include reducing environmental impacts and reducing resource consumption by engaging in green practices, solving the problem of pollution and reducing resource consumption [18], [19].

2.4 Statement of Balance Sheet (Balance Sheet)

The balance sheet statement is one of the pillars of accounting, as it is an essential financial statement reported by the economic unit and summarizes the financial balances of the economic unit on a specific date [20], [21]. A statement presentation is essential to accurately reflect the balance sheet of an economic unit within a comprehensive set of financial statements by Generally Accepted Accounting Principles (GAAP) [22]. Purpose of the statement of balance sheet is to summarize the balance sheet of an economic unit at a specific date [23]. And to identify business growth and determine its net worth [24]. Also to explain the sources of funds and how they are used [25]. Then to disclose information related to the company's assets [26], [27].

3 DATA AND HYPOTHESIS

3.1 Hypothesis

The research hypothesis was reached: the existence of a measurement relationship between the non-financial information related to the environmental aspect presented in the electronically disclosed sustainability reports and the financial information related to the balance sheet appearing in the financial statements prepared according to the requirements of IAS1.

3.2 Data

Karsan, which specializes in the automotive and electric vehicle industry, determined the research sample. It relied on the environmental aspect of sustainability reports and the balance sheet from the financial statements for the years 2016 to 2022 to determine the research objectives. The applied aspect is divided into three axes as follows:

3.2.1 The First Axis: Results of the Analysis of the Balance Sheet Statement

The financial data of the company's balance sheet for the years under study were collected and analyzed using horizontal analysis to determine the change rates. After collecting, detailing and analyzing the balance sheet statement data for several years, the result of the balance sheet statement for the years under study was as stated in Table 1.

The percentage of changes in non-current assets was calculated for each year compared to the previous year, Table 2; there was an increase of 3.137% in 2017, and the percentage increased by 15.546% in 2018, while in 2019, there was a decrease represented by (6.691%), followed by 2020 with a slight increase also by 7.137%, then in 2021, it was a noticeable change from its predecessor by 37.554%. The most significant change was for 2022, where it was an increase of 68.601%.

To determine the percentage change in non-current liabilities for each year in 2017, there was an increase of 57.250%, to decline to (24.371%) in 2018. In 2019, the percentage decreased to (37.184%), followed by the year 2020 with a significant increase of 78.113%; in 2021, there was a decline of (31.464%) to rise again in 2022 by 47.126%, Table 3.

Based on the Carson company lists; Table 1 shows the balance sheet over the years under study. Using horizontal analysis of the financial statements, the percentage change in the balance sheet for each year was reached from the previous year; in 2017, there was an increase of 13.654% over 2016 and the percentage increased by 29.235% in 2018 compared to 2017, while in 2019 there was a slight increase of 7.461%, followed by 2020 with a slight increase of 7.137%. As for the year 2021, it was a noticeable change from the previous one by 37.554%, and the most significant change was for 2022, where it was a significant increase of 68.601% over 2021.

The analysis of the rates of change in other short-term provisions revealed a change in 2017 by (47.095%) from 2016, a slight increase to (30.597%) in 2018, and a change in 2019, so there was a jump represented by 62.771%. This was followed by 2020, with a decrease of 28.101%. Then, in 2021, it continued to rise by 67.430% to return to decline in 2022 to be (26.015%), Table 4.

To clarify the percentages of change in short-term allocations for employee benefits for each year compared to the previous year, it changed in 2017 with an increase of 24.375%, continuing the increase by 27.765% in 2018, then decreasing in 2019 to 9.859%, followed by 2020 with an apparent increase of 50.328%, then decreasing slightly in 2021 by 45.508. % to record an increase in 2022 to reach 93.623%, Table 5.

3.2.2 The Second Axis: R of Data Analysis for the Environmental Aspect

Data collected on the environmental aspect from the company's sustainability reports. The environmental report includes everything related to the company's environmental aspect, including environmental concerns, energy, emissions, etc., and includes waste in more than one classification for disclosure. The following changes were reached after collecting, studying, and analyzing the environmental aspect data Using horizontal analysis.

The percentages of change in direct energy consumption - natural gas for each year compared to the previous year were reached, Table 6. In 2020, there was a decrease of -20.52% from 2019, and it continued in the same trend with a very slight change of -2.27% in 2021 compared to 2020. As for 2022, there was an increase represented by 85.84% for 2021. In terms of the percentage change in indirect energy consumption - electricity for each year over the other, in 2020 there was a decrease of -19.08% from the year 2019, and the percentage increased by 0.79% in 2021 from the year 2020, followed by the year 2022, so there was a noticeable increase. Represented by 38.73% for the year 2021. Regarding the percentages of change in savings achieved through energy efficiency for each year, 2020 showed a clear increase of 47.67% over the year 2019. The percentage decreased by 16.82% during the year 2021, and moving to the year 2022, there was a decrease represented by -28.13% for 2021.

Turning to the percentage change in total water consumption - well water, the percentage in 2020 represented a decrease of -41.78% compared to the year 2019, and the percentage increased by 23.52% in the year 2021, and the increase continued in 2022 by 140.73%. Regarding the percentage of total wastewater discharge - wastewater channel (tons) for each year compared to the previous year, in 2020

there was a decrease of -43.81% from the year 2019, and the percentage increased by 7.90% in the year 2021 from the year 2020, but in the year 2022, the increase was large and noticeable, at a rate of 164.70%. For the year 2021.

Continuing to direct emissions of greenhouse gases (Scope 1), the percentage changed in 2020, as there was a decrease of -28.00% from the year 2019, and it continued to decrease by -19.89% in 2021, and moving forward to the year 2022, the increase was large and noticeable by 107.22%. Examining the rates of change in indirect greenhouse gas emissions (Scope 2) for the three years, the year 2020 obtained a rate of -19.14%, showing a decrease from the year 2019, and the rate increased by 6.44% in 2021, and the share for the year 2022 was 46.20%, showing a large and noticeable increase. Regarding greenhouse gas emissions for production (Scope 3), the change in 2020 over 2019 was -1.12%, and the percentage continued to decrease by -97.14% in 2021, and there was a significant increase of 738.12% in 2022. Turning to the average vehicle emissions according to the sector's sales figures for each year, it showed In 2020, there was a decrease of -6.70% compared to the previous year, and it continued to decrease by -50.48% in 2021. There was no impact on the percentage in 2022, so its share was 0%.

Table 1: Amounts and percentages of change in balance sheet.

Year	Amount	% change	Year	Amount	% change
2016	1,606,671,027	-	2020	2,716,947,000	7.137%
2017	1,826,045,346	13.654%	2021	3,737,266,000	37.554%
2018	2,359,885,033	29.235%	2022	6,301,083,000	68.601%
2019	2,535,950,274	7.461%			

Table 2: Amounts and percentages of change in non-current assets.

Year	Amount	% change	Year	Amount	% change
2016	1,111,175,258	-	2020	1,171,830,000	5.160%
2017	1,146,027,496	3.137%	2021	1,811,939,000	54.625%
2018	1,324,188,952	15.546%	2022	3,045,150,000	68.060%
2019	1,235,582,188	6.691%			

Table 3: Amounts and percentages of change in non-current liabilities.

Year	Amount	% change	Year	Amount	% change
2016	664,415,172	-	2020	884,072,000	78.113%
2017	1,044,794,111	57.250%	2021	605,912,000	31.464%
2018	790,166,839	24.371%	2022	891,455,000	47.126%
2019	496,354,546	37.184%			

Table 4: Amounts and percentages of change in other short-term provisions.

Year	Amount	% change	Year	Amount	% change
2016	72,458,068	-	2020	55,474,000	28.101%
2017	38,333,728	47.095%	2021	92,880,000	67.430%
2018	26,604,704	30.597%	2022	68,717,000	26.015%
2019	43,304,844	62.771%			

Table 5: Amounts and percentages of change in short-term provisions for employee benefits.

Year	Amount	% change	Year	Amount	% change
2016	1,802,733	-	2020	4,731,000	50.328%
2017	2,242,153	24.375%	2021	6,884,000	45.508%
2018	2,864,688	27.765%	2022	13,329,000	93.623%
2019	3,147,112	9.859%			

Table 6: Results of the environmental report analysis.

Details	2020	2021	2022
Direct Energy Consumption - Natural Gas (Tons)	-20.52%	-2.27%	85.84%
Indirect power consumption electricity (tons)	-19.08%	0.79%	38.73%
Savings achieved through energy efficiency (tons)	47.67%	16.82%	-28.13%
Total water consumption - Well water (Tons)	-41.78%	23.52%	140.73%
Total wastewater discharge - Wastewater channel (tons)	-43.81%	7.90%	164.70%
Direct emissions (Scope 1) of greenhouse gases (tons)	-28.00%	-19.89%	107.22%
Indirect greenhouse gas emissions (Scope 2) (tons)	-19.14%	6.44%	46.20%
GHG emissions for production (Scope 3) (tons)	-1.12%	-97.14%	738.12%
Average vehicle emissions by sector sales figures (t/kWh)	-6.70%	-50.48%	0%
Total amount of waste (tons)	-43.75%	11.27%	6.47%
Hazardous waste	-49.49%	4.41%	173.78%
Non-hazardous waste	-42.96%	12.11%	-12.53%
Waste components (tons)	-26.53%	9.61%	5.57%
Paper	-47.11%	20.59%	-32.16%
Electronics	-99.42%	27923.08%	-100%
Plastics (plastics)	-43.85%	22.12%	-52.84%
Glass	0%	0%	0%
minerals	-42.81%	20.87%	-36.96%
Industrial sewage sediment	24.33%	-61.20%	-32.00%
Domestic sewage deposits	0%	0%	0%
Other (hazardous)	-38.55%	-12.20%	185.41%
Other (non-hazardous)	70.65%	0.85%	34.37%
Waste diverted for disposal (tons)			
Hazardous waste			
Burn (with energy recovery)	-36.32%	-24.63%	247.20%
Sanitary Landfill	-64.29%	720%	-51.22%
Total	-36.33%	-24.60%	247.04%
Non-hazardous waste			
Burn (with energy recovery)	-22.57%	-1.77%	15.18%
Total	-22.57%	-1.77%	15.18%
Waste not disposed of through the recovery process (tons)			
Hazardous waste			
Recycling	-68.67%	65.35%	31.91%
Other refunds	-86.85%	524.45%	107.44%
Total	-74.65%	143.66%	64.93%
Non-hazardous waste			
Recycling	-45.25%	14.31%	-16.30%
Total	-45.25%	14.31%	-16.30%

The percentage change in the amount of waste was calculated for each year compared to the previous year. In the year 2020, there was a decrease of -43.75% compared to the year 2019, and the percentage increased by 11.27% over the year 2021, but in the year 2022 there was a decrease of 6.47% compared to the previous year. The amount of waste was divided into two classifications: hazardous waste and non-hazardous waste. The percentages of change from year to year were reached by switching to the first section. In 2020, the percentage decreased to -49.49% from the previous one, and the percentage increased by 4.41% in 2020, and recorded an increase again by 173.78%. Year 2022. Non-hazardous waste in 2020 showed a percentage of -42.96%, increased in 2021 to 12.11%, and decreased to -12.53% in 2022. Given the other distribution of waste, the company distributed the percentages and total quantities into other classifications shown in the report, which are also explained in Table 6.

3.2.3 The Third Axis: The Relationship of Variables after Analysis

This axis shows the relationship between the results obtained in the previous two axes and the test of whether it is possible to reach results, which was done Using vertical analysis. Based on the results of the analyses obtained, the relationship between the results for testing the hypothesis will be clarified as in Table 7.

Table 7: The relationship of the environmental report to the statement of balance sheet.

Details	2020	2021	2022	2020	2021	2022
Direct Energy Consumption - Natural Gas	-20.52%	-2.27%	85.84%	(2,382,716)	(10,163,165)	63,977,959
Indirect power consumption electricity	-19.08%	0.79%	38.73%	(2,462,162)	4,008,009	33,686,321
Savings achieved through energy efficiency	47.67%	16.82%	-28.13%	379,829	9,590,592	(3,196,591)
Total water consumption - well water	-41.78%	23.52%	140.73%	(38,138,194)	605,740,105	763,757,584
Wastewater Discharge - Wastewater Channel	-43.81%	7.90%	164.70%	(17,682,437)	86,853,211	333,156,797
Direct (Scope 1) GHG emissions	-28.00%	-19.89%	107.22%	(969,755)	(24,023,562)	17,700,684
Indirect greenhouse gas emissions (Scope 2)	-19.14%	6.44%	46.20%	(1,226,617)	16,170,985	21,061,430
Greenhouse gas emissions (Scope 3)	-1.12%	-97.14%	738.12%	(13,736)	(56,889,259)	2,106,029
Average vehicle emissions by sector sales	-6.70%	-50.48%	0%	(0.05896826)	(20.07930565)	-
Total amount of waste	-43.75%	11.27%	6.47%	(1,256,400)	8,822,104	960,787
Hazardous waste	-49.49%	4.41%	173.78%	(171,980)	374,994	2,632,645
Non-hazardous waste	-42.96%	12.11%	-12.53%	(1,084,420)	8,447,110	(1,671,857)
Waste Components	-26.53%	9.61%	5.57%	(597,206)	7,697,455	834,158
Paper	-47.11%	20.59%	-32.16%	(272,177)	3,047,865	(979,498)
Electronics	-99.42%	27923.08%	-100%	(6,128)	483,133	(82,724)
Plastics (plastics)	-43.85%	22.12%	-52.84%	(110,093)	1,511,288	(752,080)
minerals	-42.81%	20.87%	-36.96%	(320,308)	4,326,703	(1,579,971)
Industrial sewage sediment	24.33%	-61.20%	-32.00%	4,849	(734,682)	(25,433)
Domestic sewage deposits	0%	0%	0%	-	-	-
Other (hazardous)	-38.55%	-12.20%	185.41%	(123,942)	(1,167,106)	2,658,077
Other (non-hazardous)	70.65%	0.85%	34.37%	230,593	230,254	1,595,786
Waste diverted for disposal						
Hazardous waste						
Burn (with energy recovery)	-36.32%	-24.63%	247.20%	(82,869)	(1,733,556)	2,237,167
Sanitary Landfill	-64.29%	720.00%	-51.22%	(12)	2,396	(238)
Total	-36.33%	-24.60%	247.04%	(82,881)	(1,731,160)	2,236,928
Non-hazardous waste						
Burn (with energy recovery)	-22.57%	-1.77%	15.18%	(57,361)	(169,030)	242,519
Total	-22.57%	-1.77%	15.18%	(57,361)	(169,030)	242,519
Waste not disposed of through the recovery						
Hazardous waste						
Recycling	-68.67%	65.35%	31.91%	(55,018)	794,574	109,463
Other refunds	-86.85%	524.45%	107.44%	(34,082)	1,311,580	286,254
Total	-74.65%	143.66%	64.93%	(89,099)	2,106,154	395,716
Non-hazardous waste						
Recycling	-45.25%	14.31%	-16.30%	(1,027,059)	8,616,140	(1,914,376)
Total	-45.25%	14.31%	-16.30%	(1,027,059)	8,616,140	(1,914,376)

The report contained several clear sections, and after analyzing the data and distributing the amounts to all sections in the report, the following results were reached. In the year 2020, considering the direct energy consumption - natural gas, the percentage was 3.74%, representing an amount of 2,382,716,042 -, and the indirect energy consumption - electricity represented by a percentage 3.86% and the amount of -2,462,161.796, and to shift to the savings achieved through energy efficiency, the percentage was -0.60% in the amount of 379,829.493, followed by the total water consumption - well water by 59.82% in the amount of -38,138,194.406, so that the total wastewater discharge - the wastewater canal was 27.74%. The amount of -17,682,437.035, and the percentage of direct emissions (Scope 1) of greenhouse gases was set at 1.52% and the amount of -969,755.218, so that indirect greenhouse gas emissions (Scope 2) increased to 1.92% with the amount of -1,226,616.727, so that we move to greenhouse gas emissions for production (Scope 3) At a rate of 0.02% and an amount of -13,735.910, then it was changed to the average vehicle emissions according to the sector's sales figures so that their percentage was combined at a rate of 0.00000009% and an amount of -0.05896826 so that the share of the total amount of waste was 1.97% and an amount of -1,256,400.300 and it is distributed into hazardous and non-hazardous waste, and the total waste was classified. It is divided into several classifications,

including waste components, waste transferred for disposal, and waste not disposed of through the recovery process.

Moving forward to 2021, the same divisions were adopted in the previous year. However, they achieved different percentages and amounts, as shown: direct energy consumption - natural gas represented the amount of -10,163,164.544 and a rate of -1.59%, while indirect energy consumption - electricity represented a rate of 0.63% and the amount of 4,008,008.553. This was followed by the savings achieved through energy efficiency by 1.50% and 9,590,591.894. In terms of total water consumption - well water by 94.63% and the amount of 605,740,104.840, then the total wastewater discharge - wastewater canal by 86,853,210.938 and 13.57%, then emissions were divided into emissions Direct (Scope 1) greenhouse gas emissions were -3.75% and amounted to -24,023,561.924, indirect (Scope 2) greenhouse gas emissions were 2.53% and amounted to -16,170,984.896, and production (Scope 3) greenhouse gas emissions were -8.89% and amounted to -56,889,258.675, followed by average emissions Vehicles according to sector sales figures With a percentage of -0.0000031% and an amount of -20.07930565, the total amount of waste reached a percentage of 1.38% and an amount of 8,822,104.102 to be divided into hazardous and non-hazardous waste so that the classifications of total waste continue to change.

Continuing until the year 2022, the following percentages and amounts were achieved: in terms of direct energy consumption - natural gas represented 5.19% in the amount of 63,977,958.731, and indirect energy consumption - electricity changed to the amount 33,686,320.554 - 2.73% so that the percentage of savings achieved through energy efficiency was -0.26% and the amount was -3,196,591.398, so that the total water consumption - well water - changed to 61.93% and the amount of 763,757,584.203, and the total wastewater discharge - the wastewater canal by 27.02% and the amount of 333,156,797.492, and from the direct emissions (Scope 1) of greenhouse gases, the percentage was 1.44%, amounting to 17,700,684.051. The signal to indirect greenhouse gas emissions (Scope 2) by 1.71%, amounting to 21,061,429.708, followed by production greenhouse gas emissions (Scope 3) by 0.17%, amounting to 2,106,029.432, so that the average percentage of vehicle emissions according to sector sales figures stabilized at 0%. The total amount of waste accounted for 0.08%. The partial distribution of hazardous and non-hazardous waste will change to 960,787.226, as explained in Table 7.

From the above results of the vertical analysis for accuracy in distributing the amounts of changes for each year in detail and showing the relationship of these amounts with the information reported in the sustainability reports, it was concluded that there is a measurement relationship between the non-financial information related to the environmental aspect, presented in the sustainability reports, and the financial information related to the balance sheet, appearing in the financial statements prepared by the requirements of IAS1

4 CONCLUSIONS

By relying on the results we obtained and the hypothesis proven in the research, we reach the following conclusions: Economic units achieved a significant shift in the investment aspect represented by non-current assets versus the environmental aspect when starting to implement the disclosure of sustainable reports. Even after the environmental indicators were negatively affected after the implementation, economic units continued to improve, and the ability to evaluate the environmental performance aspect of sustainability related to the balance sheet based on measuring environmental impacts financially was observed. In addition, there was a good application of technology in the disclosure of information and information systems in the company. In conclusion, environmental sustainability is of paramount importance for the survival of our planet and future generations. We must understand the importance of protecting our environment and consciously reducing our environmental impact. By promoting sustainable practices such as reducing waste, conserving resources, and supporting renewable energy sources, we can help mitigate the negative impact of human activities on the environment.

Therefore, it may be necessary to develop new or improve existing standards to ensure greater alignment between financial measurement and environmental reporting, thereby enhancing sustainability at the global level. At the domestic level, the findings may lead to strengthening national policies that encourage the integration of environmental and financial reporting. Policymakers should raise awareness in the financial sector about the importance of integrating environmental data into financial reporting by organising workshops and training courses.

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