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Accounting Measurement of Environmental Costs under the Financial Accounting System: A Case Study; Naftal Corporation, Blida Province

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Abstract:

This study aims to examine environmental costs and the methods used to measure them according to the Financial Accounting System (FAS/SCF), while attempting to apply this framework to Naftal Corporation, Blida Province, and to demonstrate the effect of measuring and disclosing this category of costs on both the balance sheet and the income statement. To achieve the objectives of the study, the descriptive-analytical method was adopted alongside a case study approach applied to Naftal Corporation, drawing on its financial reports and statements for the year 2025.

The study concludes that accounting measurement of environmental performance functions as a two-directional indicator: it reveals whether institutions are aware of the environmental issues that may affect their existence, and it also serves as a benchmark for financial statement users to assess environmental events and the efforts of these institutions toward environmental management, together with the resulting financial implications. The study recommends that institutions pay serious attention to the environmental dimension by adopting the measurement and disclosure of environmental accounting information within dedicated and independent statements and reports, separate from the regular financial statements, in order to facilitate the process of environmental oversight and auditing.

Keywords: environmental accounting; environmental costs; environmental accounting measurement; Naftal Corporation; financial statements.
JEL Classification: Q56, M41, M48, Q01, L25.

1. Introduction

Despite the growing interest of managers and accountants in environmental costs, environmental activities have not received sufficient attention for establishing clear principles and rules governing their measurement. This is because institutions are not considered environmentally responsible, a reality that becomes clearly evident through the results of their accounting operations as presented in their financial statements. It is apparent that most of these

institutions overlook the data and information that would clarify their role within the environment in which they operate, while they focus on measuring their own profitability.

The reason for this lies in the difficulty of measuring these costs, owing to their nature, diversity, and impact on employees, the environment, and society, as well as the inadequacy of information systems within institutions in tracking and categorizing this type of cost. This calls for the development of methods to provide environmental information that contributes to addressing these challenges by establishing information databases capable of supplying all types of data that assist in conducting environmental cost measurement.

Research Problem:

In light of the foregoing, the problem of this study addresses can be formulated as follows:

"How is the accounting measurement of environmental costs carried out in accordance with the Financial Accounting System at Naftal Corporation, Blida Province?"

This central question encompasses a set of subsidiary questions, as follows:

- What are environmental costs, and what are their types?
- What are the accounting methods and approaches used to measure environmental costs?
- How is the process of environmental accounting measurement conducted at Naftal Corporation, Blida Province, under the Financial Accounting System?

Research Importance:

The significance of this research lies in the pressing need for studies of this kind, as it addresses the accounting measurement of environmental costs from the constructive perspective that institutions pursue in order to embed the environmental dimension into their future plans and programs. Institutions incur additional financial burdens to protect the environment and to improve their public image. Users of financial information require these disclosures to evaluate the extent to which institutions align with societal expectations. It is therefore necessary to clarify how these environmental costs are incorporated into financial statements through their measurement and disclosure, as part of the institution's contribution to preserving the environment from pollution generated by its industrial activities.

Research Objectives:

This research seeks to achieve the following objectives:

- To identify environmental costs, their importance, and their types.
- To identify the methods and approaches of accounting measurement of environmental costs, and the obstacles that impede their application in institutions.
- To attempt to measure environmental costs at Naftal Corporation, Blida Province, and to demonstrate the effect of disclosing them in accordance with the Financial Accounting System on both the balance sheet and the income statement for the year 2025.

Research Methodology:

This research relies on the descriptive-analytical approach in order to conduct an in-depth study and comprehensive analysis of environmental costs, their types, environmental accounting measurement, its approaches, methods, and difficulties of application, drawing on data obtained from books, journals, prior studies, and websites consulted during the research.

A case study approach was also adopted for Naftal Corporation, Blida Province, to apply the theoretical framework to the field reality.

Research Structure:

This study is structured around three main axes:

- First Axis: The Nature of Environmental Costs.
- Second Axis: The Measurement of Environmental Costs.
- Third Axis: The Measurement and Disclosure of Environmental Costs in the Financial Statements of Naftal Corporation, Blida Province.

2. First Axis: The Nature of Environmental Costs

2.1 The Concept of Environmental Costs

2.1.1 Definition of the Environment

The International Organization for Standardization (ISO) defines the environment as: "the surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation, and extending from within the organization to the global system." (Al-Musawi and Al-Dabbagh, 2016, p. 206)

2.1.2 Definition of Environmental Accounting

Environmental accounting is defined as: "a methodology for measuring and reporting on institutional information that has environmental impact, in order to meet the needs of various parties within society, whether internal or external to the institution, in a manner that enables the monitoring and evaluation of the institution's environmental performance." (Amal Abd Al-Hussein, 2014, p. 293)

2.1.3 Definition of Environmental Costs

Environmental costs carry several different definitions, the most important of which are cited here:

- Environmental costs are defined as "the effects resulting from the activities of society, institutions, and individuals that influence environmental quality. These effects can be expressed in monetary or non-monetary form and include direct costs and intangible costs, as well as the financial consequences that accrue to the institution over the short or long term." (Adam Musa, 2018, p. 25)
- They are also defined as "the costs of actions taken or required to be taken to manage the environmental impacts resulting from an institution's activities in an environmentally responsible manner, in addition to other costs demanded by the institution's environmental goals and requirements, such as waste disposal and avoidance costs, conducting research for products that are more environmentally suitable, and fines imposed on institutions for violating environmental protection laws." (Mansouri and Joudi, 2008, p. 13)

2.2 The Importance of Environmental Costs

Environmental costs carry considerable significance. The most important aspects are outlined below (Ahmad Omar, 2017, p. 25):

- The environment is a national heritage that must be preserved in balance across generations. Environmental costs therefore produce the indicators necessary to verify whether the current generation is meeting the conditions of economic efficiency in the domain of the environment and economic resources.

- The worsening of environmental problems has led to a marked increase in environmental protection costs. It is therefore essential that the environmental accounting system provides data on all these effects so that they can be used in formulating policies and making appropriate decisions, ensuring that the institution's environmental responsibility is disclosed in the required reports.
- The effects of environmental degradation do not stop at national borders: pollutants can move from one country to another as a result of contemporary global developments. It is therefore necessary to estimate the environmental costs attributable to external sources of pollution, so that the countries responsible for this pollution can be called upon to share in bearing the corresponding burdens.
- Ignoring the environmental effects of economic activities on different institutions, and of institutions on one another, leads to a distorted picture of their benefits and costs. Although the difficulty of measuring these effects is acknowledged, this does not justify ignoring them entirely.

2.3 Types of Environmental Costs:

Institutions bear costs that can be measured. These are as follows (Mashri and Massaltha, 2017, pp. 154-155):

2.3.1 Prevention Costs:

These are the costs of activities carried out to prevent the production of pollutants that cause environmental quality degradation. They include: evaluating and selecting pollution prevention or reduction equipment, conducting environmental studies, managing and reusing waste, and similar activities.

2.3.2 Detection Costs:

These are the costs of activities carried out to determine whether products, processes, and systems within the institution conform to appropriate environmental standards, whether mandatory or voluntary. These costs include: the costs of environmental audits, product and process inspection costs, and monitoring pollution rates.

2.3.3 Failure Costs:

These encompass activities aimed at monitoring environmental performance and working to prevent the occurrence of environmental damage. This category includes the costs borne by the institution from the pre-production stage through to the product reaching the consumer. This type of cost is considered one of the value-adding activities, as it leads to a reduction in other environmental performance costs, which in turn increases profits and improves the institution's competitive capacity.

2.3.4 Environmental Performance Monitoring Costs:

These include activities that address environmental damage that previous cost activities failed to prevent. This type of environmental performance cost is considered unnecessary and does not add value. Consequently, the more these costs can be prevented or reduced, the lower the total environmental performance costs and the higher the institution's profits. This category can be subdivided into:

- **Prevention Activity Costs:** These include the costs resulting from all activities undertaken by the institution with the aim of reducing or eliminating the causes that lead to negative

environmental effects in the future. These costs are limited to the costs of redesigning production processes so that toxic or environmentally harmful materials are not used, and they include the following activities: activities involving the use of environmentally friendly materials, and activities involving the use of environmentally friendly production methods.

- **Containment and Measurement Activity Costs**: These include the costs of activities carried out by the institution with the aim of measuring and monitoring potential sources of environmental damage. They include activities for monitoring pollution levels in materials used within the institution, activities for monitoring pollution levels in production-generated waste, activities for monitoring environmental audit processes, and activities for monitoring the relationship between the institution and various environmental bodies.

3. Second Axis: Measurement of Environmental Costs

3.1 Definition of Environmental Cost Measurement

Accounting Measurement: "the assignment of numbers to an institution's past, current, and future events, based on past or current observations and in accordance with specified rules." (Al-Hiyali, 2007, p. 100)

Environmental Cost Measurement: "the determination of values for all cost elements arising from institutions' compliance with their social and environmental responsibilities, whether that compliance is voluntary or compulsory." (Boujaadar and Sayaf, 2017, p. 260)

It is also defined as: "the translation of an institution's activity in the environment in quantitative or financial terms, by means of which environmental information can be obtained that explains the institution's financial statements to their users." (Mazimash et al., 2018, p. 128)

3.2 Approaches to Accounting Measurement of Environmental Costs

The approaches to measuring environmental costs are multiple and are detailed as follows (Tijani and Azza, 2017, pp. 193-194):

3.2.1 Single-Dimensional Quantitative Measurement Approach

This approach is based on measuring things and events quantitatively using a unified standard that reflects a common characteristic between them, so that the information derived from measuring these things and events can possess the property of mathematical aggregation across all their constituent elements. This approach distinguishes between two directions:

a. Measurement Using Social Utility Units: All environmental and social activities share the feature of affecting quality of life, as they revolve around the satisfaction or non-satisfaction of human needs, whether material or non-material. Their measurement should therefore reflect the degree of satisfaction they produce, regardless of the exchange value they contain, especially since many of them have no exchange value. In accordance with what economists agree upon, the degree of satisfaction produced by these activities should be measured using a standard scale that reflects the amount of utility they generate.

b. Measurement Using Monetary Units: Measurement in financial accounting relies on exchange prices; however, these prices are not available in environmental accounting, in addition to the fact that prices may not be an accurate indicator of value when the price does not reflect the utility that a good or service produces. Abt relied in measuring an institution's environmental and social performance on the concept of consumer surplus, on the basis that this surplus reflects the technical and organizational efforts that affect quality of life. To

overcome the difficulty of measuring environmental and social activities in monetary terms, Estes proposed estimating the value of these activities based on certain indirect estimation methods, including:

- **The Alternative Valuation Method:** According to this method, the value of alternative objects and events that are expected to produce the same benefits or sacrifices as the objects and events being measured is used. This method faces the challenge of determining whether appropriate alternatives are available to allow the selection of the appropriate alternative value.
- **The Survey Method:** This method estimates the value of environmental and social activities by analyzing data obtained from the social groups affected by them, whereby these groups are asked about the value of the resulting effects from their perspective.
- **The Rectification or Avoidance Cost Method:** This method measures environmental and social activities by estimating environmental damage on the basis of the amounts required to rectify the damage or the amounts required for the equipment and devices needed to avoid it. This method assumes an inverse relationship between the damage borne by society and the environmental and social activities carried out by the institution to correct or avoid that damage. As an example, one can measure the costs incurred by an institution in cleaning the waterways it uses to dispose of the waste from its operations.

3.2.2 Multi-Dimensional Measurement Approach

This approach is based on using different measurement units to measure the institution's environmental activities and effects, according to the different nature of each type of those activities and effects, without being restricted to a specific method or unit of measurement. This approach includes two types of measurement methods (Ben Ammara, 2011, p. 274):

a. The Multi-Quantitative Measurement Method: In this method, the activity being measured is quantified and then translated financially into monetary terms, or disclosed in a non-financial quantitative form. It includes the following:

- **Financial Quantitative Measurement Methods:** The activity or effect subject to measurement is enumerated in different units and then a monetary value is assigned to these quantities in accordance with historical or estimated values.
- **Non-Financial (Physical) Quantitative Measurement Methods:** In these methods, it is sufficient to perform a quantitative or relative enumeration to measure the environmental activity or effect in question in a non-monetary numerical form, owing to the absence of an exchange price or the impossibility of estimating a value for these quantities.

b. The Descriptive Measurement Method: The descriptive measurement method is based on a narrative description of the characteristics of a given object or event, such that the reader of the description can visualize these characteristics as they appear in the real object or event. This method can be used in cases where quantitative measurement is not feasible. It is characterized by its simplicity, low cost, and ease of understanding, though it cannot be relied upon in isolation from other methods.

3.3 Methods of Accounting Measurement of Environmental Costs

Despite the difficulties facing the accounting measurement of environmental costs, there are many efforts and accounting attempts to accomplish this measurement given its importance, through the use of indirect methods, including (Mahaouate, 2015, pp. 81-82):

3.3.1 The Response or Impact Method

This method relies on estimating the relationships between varying quantities of pollution and their effect on human or physical assets such as buildings, machines, and equipment. This type of method is based on the existence of a causal relationship between pollution and the effect it produces on human, material, and natural wealth. For example, the costs of illness resulting from pollution can be measured through direct costs such as treatment, nursing, healthcare, and medication costs provided to persons suffering from pollution-related diseases, and indirect costs such as the reduced capacity of the affected person to work at the same level of efficiency as before contracting pollution-induced illness. These can be measured through reduced productivity. Examples of this type of cost include the costs of premature death borne by society due to lost productivity.

3.3.2 The Productivity Change Method

This method is based on observing the physical change in output associated with specific changes in the environment. For example, air pollution can negatively affect agricultural productivity, meaning a decline in output both in quantity and quality. Pollution can also lead to the erosion of agricultural soil and consequently a decline in its productivity. To calculate the monetary value of this change or decline in productivity, the quantity of the decline in productivity is multiplied by the sale price per ton of a given product.

3.3.3 The Replacement Cost Change Method

Pollution and environmental degradation may cause damage to various assets and resources such as agricultural land and constructed properties. In such cases, those effects can be calculated financially by computing the costs of replacing the affected asset with a new one, or the costs of restoring it to its original condition. Examples of this type of cost include the costs of replacing or restoring an asset affected by air pollution. It should be noted that the application of this approach is difficult when the affected assets are of historical or cultural value.

3.3.4 The Preventive Costs Method

People generally prefer to avoid risks and give priority to measures that protect them from environmental accidents, disasters, and various types of pollutants such as radiation and nuclear incidents. They therefore prefer to live in areas far from danger, even if property prices in surrounding areas are lower. The price difference reflects the sacrifice that represents environmental costs in this case.

3.3.5 The Property Value Method

The price of a given property, whether land, a building, or other, reflects several factors and characteristics, including the age of the property, quality of construction, and number of rooms, in addition to other factors related to location such as light exposure, view (referred to as air quality), population density, and proximity to service centers, among others.

The property price represents the aggregate of all the foregoing factors. Assuming that all other factors remain constant except for environmental factors, it becomes possible to identify the environmental effect, represented by noise, odors, gases, emitted dust, and all other

forms of pollution, on the property price. Many studies have confirmed the decline in property prices when properties are situated near a pollution source compared to equivalent properties with the same advantages but located in pollution-free areas.

3.3.6 The Wage Differential Method

This method is similar to the property value approach in its theoretical foundations, but differs in that it measures the degree to which individuals accept higher wages in exchange for exposure to health risks such as pollution-related illnesses and premature death, compared to those who perform the same work in a pollution-free area. The difference between the two values represents the cost of pollution that individuals are willing to bear in exchange for tolerating the risks of exposure to pollution.

3.4 Difficulties Facing Accounting Measurement

Some researchers identify several difficulties that arise when determining, measuring, and reporting on environmental costs in practice (Jalit, 2018, p. 104):

3.4.1 Difficulty of Identifying the Elements of Environmental Costs

The problem stems from the fact that the environmental obligation of an institution, which is the activity that generates the expenditure event and causes the occurrence of environmental cost elements, is itself an ill-defined concept, and its dimensions have not been agreed upon conclusively from a practical standpoint. The inability to reach a specific agreement on the nature of environmental obligations and the true nature of their elements automatically means the inability to identify the environmental cost elements generated by them, and to measure and report on them accurately.

3.4.2 Difficulty of Separating Environmental Costs from Economic and Social Costs

The overlap between economic, social, and environmental activities gives rise to one of the fundamental problems associated with objectively measuring the environmental performance of institutions. For example, research and development costs aimed at increasing product safety can be considered social costs necessary for creating a sense of consumer satisfaction and wellbeing regarding the institution's products. They can equally be considered environmental costs aimed at ensuring the safety of consumers when using the products and enabling them to recycle the resulting waste. At the same time, they can be considered economic costs necessary for giving the product a competitive edge and increasing its market share with the aim of maximizing the institution's profitability.

3.4.3 Difficulty of Linking Costs to Environmental Returns

It is generally difficult to judge the effectiveness and efficiency of environmental costs because of the difficulty of linking these costs to environmental returns. That is, it is difficult to match the environmental performance costs during a given time period with the environmental returns generated by that performance during the same period. Environmental returns are characterized by two features:

- They generally cannot be expressed in monetary measurement units; rather, descriptive measurement is more appropriate for them.
- There is a long time lag between the date on which the cost event occurs and the return actually realized from it.

3.4.4 Other Difficulties

Additional difficulties face the measurement of environmental costs. They are as follows:

- The difficulty of precisely identifying the environmental damage resulting from the institution's economic activity.
- It is not always possible to estimate financial values for all environmental damage: some damage has a market value, such as losses to fisheries and tourism, while other damage has no market value, such as harm to human health resulting from pollution.
- Difficulty in clearly establishing the relationship between pollutants and the damage they have caused.
- Some pollutants do not produce their effects until the long term.

4. Third Axis: Measurement and Disclosure of Environmental Costs in the Financial Statements of Naftal Corporation, Blida Province

4.1 General Presentation of Naftal Corporation, Blida Province

4.1.1 Establishment of Naftal Corporation, Blida Province

As part of the restructuring of Sonatrach, the national enterprise Naftal was established by Decree No. 80-101, dated 06/04/1980. The name "Naftal" was selected through a national competition organized specifically for this purpose.

- "Naft": means crude petroleum, denoting the institution's line of activity.
- "al": represents the initial letters of Algeria.

The National Enterprise for Refining and Distribution of Petroleum Products (Entreprise Nationale de Raffinage ET de Distribution des Produits Petroliers) was established under the supervision of the Ministry of Chemical and Petrochemical Industries. Through the transfers affected by Decree 80-102, dated 06/04/1980, over structures, means, assets, and workforce previously belonging to Sonatrach in the field of refining and distributing petroleum products, the corporation commenced operations on 01/01/1980. By virtue of Decree No. 87/189, dated 27/08/1987, Naftal Corporation was restructured without refining authority, under the name of the National Enterprise for Marketing and Distribution of Petroleum Products, Naftal, as a joint-stock company with a capital of 40 billion Algerian Dinars.

4.1.2 Missions and Objectives of Naftal Corporation, Blida Province

Naftal's mission consists of marketing and distributing petroleum products and their derivatives throughout the national territory. These products include all types of fuel (gasoline, diesel, kerosene, and LPG for vehicles), lubricating oils including those used in aviation and marine applications, fuels, rubber tires, all types of oil, and liquefied petroleum gas (butane and propane). The corporation also provides customers with after-sales services for oil products in terms of orders, specifications, and strict compliance monitoring. Naftal Corporation, Blida Province, aims to organize, develop, and manage commercial activities, distribute petroleum products, and store and transport all marketed petroleum products throughout the national territory, while ensuring that the procedures specific to environmental protection and conservation are initiated in coordination with the relevant bodies.

4.2 Presentation of the Balance Sheet and Income Statement of Naftal Corporation for the Year 2025

Financial statements are the mirror that reflects the financial position of an institution and the results of its operations over a specific period. Below is a presentation of the balance sheet and income statement of the institution under study for the year 2025.

4.2.1 The Balance Sheet

The following table presents all balance sheet items of Naftal Corporation:

Table No. (01): Balance Sheet of Naftal Corporation for the Year 2025 (Unit: DZD)

ASSETS	AMOUNTS
NON-CURRENT ASSETS	
Tangible Fixed Assets	252.963.313,47
Assets Under Construction	10.126.750,00
Financial Fixed Assets	18.622.061,54
TOTAL NON-CURRENT ASSETS	**281.712.125.01**
CURRENT ASSETS	
Inventories and WIP	204.515.367,89
Trade Receivables	81.566.637,99
Other Debtors	22.374.545,15
Taxes and Similar Items	9.501.501,05
Cash and Bank Balances	349.955.374,90

LIABILITIES & EQUITY	AMOUNTS
NON-CURRENT LIABILITIES	
EQUITY	
Paid-in Capital	0.00
Net Result (Group Share)	708,096,599.53
TOTAL EQUITY	**708,096,599.53**
OTHER NON-CURRENT LIABILITIES	
Other Non-Current Debts	6,077,523.18
Provisions and Deferred Income	995,391.54
TOTAL OTHER NON-CURRENT LIABILITIES	**7,072,914.72**
TOTAL NON-CURRENT LIABILITIES	**715,169,514.72**
CURRENT LIABILITIES	
Suppliers and Related Accounts	20,746,137.33
Other Current Debts	210,723,145.41

TOTAL CURRENT ASSETS	**664.926.671,98**	**TOTAL CURRENT LIABILITIES**	**213,469,282.74**
TOTAL ASSETS	**946.638.796,99**	**TOTAL LIABILITIES AND EQUITY**	**946,638,796.99**

Source: Prepared by the researchers based on the institution's documents.

4.2.2 The Income Statement

The following table presents all revenues and expenses of Naftal Corporation:

Table No. (02): Income Statement of Naftal Corporation, Blida Province, for the Year 2025 (Unit: DZD)

ITEM	AMOUNTS
Revenue (Turnover)	5,633,963,421.11
Change in Inventories of Finished and In-Progress Goods	170,258.41
Capitalized Production	
Operating Grants	
Total Production for the Fiscal Year (1)	**5,634,133,679.52**
Purchases Consumed	4,591,117,071.16
External Services and Other Consumptions	90,769,246.40
Total Consumption for the Fiscal Year (2)	**4,681,886,317.56**
Operating Value Added = (3) = (1-2)	**952,247,361.96**
Personnel Costs	154,543,454.91
Taxes, Duties, and Similar Payments	71,099,882.57
Gross Operating Surplus (4)	**726,604,024.48**
Other Operating Revenues	5,383,095.02
Other Operating Expenses	236,770.39
Depreciation and Provisions Allowances	23,883,967.36
Reversals on Impairment Losses and Provisions	224,995.59
Operating Result (5)	**708,091,377.34**
Financial Revenues	5,222.19
Financial Expenses	
Financial Result (6)	**5,222.19**
Ordinary Result before Tax = (7) = (5+6)	**708,096,599.53**
Tax Payable on Ordinary Results	
Deferred Tax (Changes) on Ordinary Results	
Total Revenues from Ordinary Activities	
Total Expenses from Ordinary Activities	
Net Result from Ordinary Activities (8)	
Extraordinary Items - Revenues	
Extraordinary Items - Expenses	
Extraordinary Result (9)	

Net Result for the Fiscal Year (10)	**708,096,599.53**

Source: Based on the institution's documents.

4.3 Presentation of Environmental Costs and Assets of Naftal Corporation, Blida Province

4.3.1 Environmental Levies

a. The Petroleum Products Levy: This is a levy imposed by the tax administration on petroleum products, collected through the sale of fuel to consumers. It is calculated as follows: 5 DZD per 100 liters on all types of fuel, collected on behalf of and for the benefit of the public treasury as a result of fuel's contribution to environmental pollution. The following table presents the amount of the petroleum products levy for Naftal Corporation, Blida Province:

Table No. (03): Petroleum Products Levy

Product Code	Description	Quantity (Liters)	TPP Amount (DZD)
13010 - 799	Regular Gasoline (Essence Normale)	266,296.31	133,148,155.00
13020 - 799	Ethyl Super Gasoline (Supercarburant Ethyl)	429,327.53	257,596,518.00
13040 - 799	Unleaded Gasoline (Essence Sans Plomb)	72,387.00	43,432,200.00
16020 - 799	Gas Oil (Diesel)	1,374,580.17	137,458,017.00
TOTAL		**571,634,890.00**	**571,634,890.00**

Source: Prepared by the researchers based on the institution's documents.

c. The Tire Levy: This is a levy imposed on rubber tires by the tax administration. Its amount is calculated on a per-unit basis as follows: Truck tire = 70 DZD, Passenger car tire = 450 DZD. The following table presents the amount of the tire levy for Naftal Corporation:

Table No. (05): Tire Levy

Date	File	Number	Amount (DZD)
23/08/2025	BLF	2999031	20.00
23/08/2025	BLF	2999060	15.00
23/08/2025	BLF	2999061	20.00
TOTAL			**1,260.00**

Source: Prepared by the researchers based on the institution's documents.

b. The Oil Products Levy: This is a levy imposed by the tax administration on all types of oils, calculated according to a special schedule based on the type of oil. It is computed by weight: Levy = Rate x TMQ (weight in tons). Rate = 12,500. The institution acts here as an intermediary that collects this tax, with the burden ultimately borne by the final consumer.

Table No. (04): Oil Products Levy

Date	File	Number	Amount (DZD)
07/11/2025	BLF	798725	4,500.00
07/11/2025	BLF	798728	12,555.00
07/11/2025	BLF	798729	9,000.00

07/11/2025	BLF	798730	2,250.00
07/11/2025	BLF	798731	6,750.00
07/11/2025	BLF	798732	7,646.00
07/11/2025	BLF	798733	4,500.00
07/11/2025	BLF	798734	4,500.00
08/11/2025	BLF	798744	855.00
19/11/2025	BLF	798766	7,391.00
19/11/2025	BLF	798767	2,250.00
19/11/2025	BLF	798768	27,000.00
19/11/2025	BLF	798776	45,000.00
20/12/2025	BLF	798777	2,250.00
20/12/2025	BLF	798797	4,500.00
21/12/2025	BLF	798818	7,781.00
21/12/2025	BLF	798819	2,250.00
21/12/2025	BLF	798865	9,000.00
22/12/2025	BLF	798867	208,100.00
22/12/2025	BLF	798907	2,250.00
22/12/2025	BLF	798913	4,500.00
22/12/2025	BLF	798914	9,000.00
22/12/2025	BLF	798916	855.20
31/12/2025	BLF	940754	11,250.00
25/10/2025	BLF	1348006	3,600.00
25/10/2025	BLF	1348017	7,425.00
25/10/2025	BLF	1348019	2,698.00
26/10/2025	BLF	1348035	7,832.50
26/10/2025	BLF	1348048	4,500.00
26/10/2025	BLF	1348049	4,500.00
26/10/2025	BLF	1348050	15,750.00
12/11/2025	BLF	672991	6,750.00 (Credit)
25/09/2025	BLF	672991	1,342.50 (Credit)
TOTAL			**7,784,428.74**

Source: Prepared by the researchers based on the institution's documents.

4.3.2 Taxes on Environmental Activity

The various environmental taxes paid by the institution under study in return for the pollution effects it causes to the environment are as follows:

Table No. (06): Levy on Environmental Activity

Description	Number	Account Key	Debit	Credit
Pollution Tax	870105	698020	4,181.81	-
Waste Rights	043914	615000	1,000.00	-
Pollution Tax	870513	613020	40,000.00	-
Pollution Tax	Fisc06	615020	132,000.00	-

Pollution Tax	Fisc06	612020	1,040,000.00	-
Pollution Tax	Fisc06	613020	1,040,000.00	-
Pollution Tax	Fisc06	615020	1,000.00 (Credit)	-
Pollution Tax	Fisc06	613020	40,000.00 (Credit)	-
Pollution Tax	870603	614020	1,040,000.00	-
Pollution Tax	870603	311020	1,040,000.00	-
Pollution Tax	Prov15	075020	3,070,000.00	-
TOTAL				

Source: Prepared by the researchers based on the institution's documents.

4.3.3 Environmental Fixed Assets

Acquisition date of the storage tank: 04/02/2025, depreciated using the straight-line method.

Table No. (07): Depreciation of Environmental Fixed Assets

Depreciable Value (DZD)	Useful Life (Years)	Depreciation Date	Accumulated Depreciation (DZD)	Net Book Value (DZD)
2,373,824.20	20	31/12/2025	217,600.55	2,156,223.65

Source: Prepared by the researchers based on the institution's documents.

4.4 Preparation of the Adjusted Balance Sheet and Income Statement for 2025 with Environmental Effects for the Institution Under Study

A proposed model was prepared based on the information provided by the institution relating to the environmental dimension that it uses in its production operations, as well as for environmental protection purposes. Using these costs as presented, together with the environmental fixed assets acquired, the following presents the adjusted financial balance sheet and income statement incorporating environmental effects for the institution under study, Naftal, Blida Province:

4.4.1 Presentation of the Environmentally Adjusted Financial Balance Sheet

Table No. (08): Environmentally Adjusted Financial Balance Sheet (2025), Naftal Corporation, Blida Province

ITEM	Gross Value (DZD)	Depreciation (DZD)	Net Value (DZD)
NON-CURRENT ASSETS			
Economic Fixed Assets	887,120,356.27	636,313,266.45	250,807,089.82
Environmental Fixed Assets	2,373,824.20	217,600.55	(2,156,223.65)
Financial Fixed Assets	18,622,061.54	0.00	18,622,061.54

Economic Works in Progress	10,126,750.00		10,126,750.00
Environmental Works in Progress	0.00	0.00	0.00
TOTAL NON-CURRENT ASSETS	**918,242,992.01**	**636,530,867.00**	**281,712,125.01**
CURRENT ASSETS			
Inventories (Net of Provisions)	208,059,979.63	3,544,611.74	204,515,367.89
Production Supplies Inventory	0.00	0.00	0.00
Environmental Supplies Inventory	0.00	0.00	22,347,545.15
Trade Receivables (Net of Provisions)	22,492,074.87	144,529.72	2,440,169,882.89
Cash and Bank Balances	230,552,054.50	3,689,141.46	
TOTAL CURRENT ASSETS	**670,220,643.14**	**5,293,971.16**	**664,926,671.98**
TOTAL ASSETS	**1,588,463,635.15**	**641,824,838.16**	**946,638,796.99**
Less: Current Liabilities			995,391.54
Economic Obligations	0.00	0.00	0.00
Environmental Obligations	0.00	0.00	0.00
Provisions Related to Economic Activity	0.00	0.00	0.00
Provisions Related to Environmental Activity	0.00	0.00	20,746,137.33
Distribution Creditors	0.00	0.00	
TOTAL CURRENT LIABILITIES			**21,741,528.87**
Working Capital	0.00	0.00	0.00

TOTAL INVESTMENT FINANCED BY:			**0.00**
Shareholders' Equity	0.00	0.00	0.00
Paid-in Capital	0.00	0.00	0.00
Reserves	0.00	0.00	0.00
Retained Earnings	0.00	0.00	0.00
Total Shareholders' Equity	0.00	0.00	708,096,599.53
Current Year Profit	0.00	0.00	
Long-Term Borrowings	0.00	0.00	6,077,523.18
Long-Term Borrowings for Economic Operations	0.00	0.00	0.00
TOTAL LONG-TERM FINANCING	**0.00**	**0.00**	**714,174,122.71**
TOTAL LIABILITIES AND EQUITY			**946,638,796.99**
TOTAL WORKING CAPITAL AND CURRENT ASSETS FINANCING			**0.00**

Source: Prepared by the researchers based on the institution's documents.

Comment: By referring to Table No. (01) relating to the institution's balance sheet for 2025 and comparing it with the table above, after incorporating the environmental fixed assets into the balance sheet, it is observed that the total non-current assets figure, estimated at 281,712,125.01 DZD, is identical in both balance sheets before and after adjustment. Similarly, the current assets have the same value and no change has occurred in the amounts in either balance sheet, estimated at 664,926,671.98 DZD. The difference between the two lies solely in the method of disclosure: the fixed assets are presented in detailed form, distinguishing the environmental assets with a net value of 2,156,223.65 DZD, which makes the balance sheet more comprehensive.

4.4.2 Presentation of the Income Statement Adjusted for Environmental Effects (Environmental Costs)

The following presents the income statement adjusted for environmental costs for the institution under study, Naftal, in which the costs pertaining to the economic dimension are separated from the costs relating to the environmental dimension.

Table No. (09): Income Statement Adjusted for Environmental Costs (2025)

ITEM	AMOUNTS (DZD)
Revenue (Turnover)	5,633,963,421.11
Change in Inventories of Finished and In-Progress Goods	170,258.41
Capitalized Production	
Operating Grants	
Total Production for the Fiscal Year (1)	**5,634,133,679.52**
Purchases Consumed	4,591,117,071.16
External Services and Other Consumptions	90,769,246.40
Total Consumption for the Fiscal Year (2)	**4,681,886,317.56**
Operating Value Added = (3) = (1-2)	**952,247,361.96**
Personnel Costs	154,543,454.91
Medical Treatment Costs	601,680.50
Environmental Personnel Costs	**153,941,774.41**
Taxes, Duties, and Similar Payments	71,099,882.57
Gross Operating Surplus (4)	**726,604,024.48**
Other Operating Revenues	5,383,095.02
Other Operating Expenses	236,770.39
Depreciation and Provisions Allowances	23,883,967.36
Reversals on Impairment Losses and Provisions	224,995.59
Operating Result (5)	**708,091,377.34**
Financial Revenues	5,222.19
Financial Expenses	0.00
Financial Result (6)	**5,222.19**
Ordinary Result before Tax = (7) = (5+6)	**708,096,599.53**
TAX ON ECONOMIC ACTIVITY	
Tax Payable on Ordinary Results	0.00
Deferred Tax (Changes) on Ordinary Results	0.00
Total Tax on Economic Activity (1)	0.00
ENVIRONMENTAL TAXES AND LEVIES	
Tax on Environmental Activity	7,366,181.81
Levies on Environmental Activity	579,420,578.74
Total Environmental Taxes and Levies	**586,786,760.55**
Ordinary Result after Environmental Tax	121,309,838.98
Total Revenues from Ordinary Activities	
Total Expenses from Ordinary Activities	
Net Result from Ordinary Activities (8)	

Extraordinary Items - Revenues	0.00
Extraordinary Items - Expenses	0.00
Extraordinary Result (9)	
Net Result for the Fiscal Year (10)	**121,309,838.98**

Source: Prepared by the researchers based on the institution's documents.

Comment on the Income Statement: The income statement adjusted for environmental costs includes a set of accounts relating to the institution's activity. By comparing Table No. (02) with the table above, it is observed that the total production for the fiscal year is the same in both, estimated at 5,634,133,679.52 DZD. Similarly, the total consumption for the fiscal year is unchanged in both tables, estimated at 4,681,866,317.56 DZD. Consequently, the total operating value added remains the same in both tables, estimated at 952,247,361.96 DZD.

It is also observed that the adjusted income statement includes a set of expenses relating to environmental activities in the environmental personnel costs account, compared to the unadjusted income statement, with a value of 153,941,774.41 DZD, while the total remains the same. The difference lies solely in the method of disclosure. As for the operating result, its value is 708,091,377.34 DZD in both tables and has not changed. Similarly, the ordinary result before tax is the same in Table No. (02) and Table No. (09), estimated at 708,096,599.53 DZD.

As for the net result in Table No. (09), its value was 121,309,838.98 DZD. In Table No. (02) it amounted to 708,096,599.53 DZD. It is noted that the net result for the fiscal year declined as a result of the adjustment, and this decline is attributable to the increase in environmental costs that were incorporated and disclosed comprehensively.

4.5 Comparison of Financial Statements Submitted by the Institution Before and After Incorporating Environmental Assets and Costs

A comparison is drawn between the financial statements submitted by the institution (SCF) and the statements that were prepared and adjusted to include assets and costs relating to environmental activities, specifically the balance sheet and the income statement for the year 2025, as follows:

4.5.1 Comparison Between the Financial Balance Sheet and the Environmental Financial Balance Sheet

The financial balance sheet differs from the environmental financial balance sheet in several respects, and this difference does not negate the existence of points of similarity between them, as observed in the preceding tables. These points are clarified in the table below:

Table No. (10): Similarities and Differences Between the Financial Balance Sheet and the Adjusted Environmental Financial Balance Sheet

Criterion	Financial Balance Sheet (2025)	Environmental Financial Balance Sheet (2025)
Legal basis	The financial balance sheet was prepared in accordance with the Financial Accounting System; it therefore has its own specific legal basis.	It has no specific system or law and remains a proposed model put forward by numerous researchers that has not yet been applied in economic institutions.

Form	A table consisting of two sides: the assets side and the liabilities and equity side, with a specific date.	A table consisting of two sides: the assets side and the liabilities and equity side, with a specific date.
Objective	Prepared for the purpose of achieving the economic objective, i.e., economic profit, and with the aim of evaluating financial performance.	Prepared for the purpose of achieving both the economic objective and the social objective of the institution, and it reflects the institution's environmental performance.
Content	Contains accounting information only, pertaining to both current and non-current assets as well as the liabilities side.	Contains accounting information and additionally includes information related to environmental activities (environmental fixed assets), classified according to the areas of social responsibility, which encompass the environmental domain.
Method of disclosure	Financial and accounting information is disclosed within this statement.	Accounting information is disclosed in detail, covering both financial information and information relating to the environmental dimension.
Accounting basis adopted	Based on general financial accounting in its preparation.	Based on environmental accounting in the preparation of this statement.
Beneficiary parties	Has numerous users including suppliers, customers, lenders, investors, and others.	The environmental financial balance sheet has the same users.

Source: Prepared by the researchers.

4.5.2 Comparison between the Income Statement Submitted by the Institution and the Adjusted Income Statement

Table No. (11): Comparison between the SCF Income Statement and the Adjusted Income Statement

Criterion	SCF Income Statement	Adjusted Income Statement
Legal basis	The income statement operates in accordance with the Financial Accounting System, i.e., it is issued pursuant to a specific law, namely the Financial Accounting System, and is among the most important statements prescribed by it.	Has no specific system or law and remains a proposed model advanced by numerous researchers; it has not yet been applied in economic institutions.

Form	A table comprising a set of costs and revenues.	A table comprising a set of environmental costs and revenues.
Objective	Aims at economic profit.	Aims at both economic and social profit.
Content	Contains the costs borne by the institution.	Contains costs relating to environmental activities.
Method of disclosure	Financial costs are presented in a non-detailed manner.	Environmental costs are presented in detail and with clarity, identifying the most significant costs borne by the institution, particularly in the environmental dimension.
Accounting basis adopted	Prepared using general accounting as its basis.	Prepared using environmental accounting as its basis.
Beneficiary parties	Has user parties consisting of: suppliers, lenders, investors, and others.	Has the same users as the unadjusted income statement.

Source: Prepared by the researchers.

5. Conclusion

Through this study, it becomes clear that institutions must commit to applying environmental accounting, by performing the accounting measurement of environmental costs they bear for the purpose of protecting the environment and reducing the legal, social, and ethical consequences they face toward employees, the environment, and the society as a whole in which they operate. It is equally necessary to disclose these costs within their financial statements, in order to provide the required data and information in sufficient form to the parties that use them, whether internal or external, thereby enabling them to conduct a comprehensive evaluation of the institution's performance and make appropriate decisions. The study also underlines the need for institutions to move beyond traditional accounting, which ignored the entire process of measuring and disclosing environmental activities. The study reached the following **results**:

- Applying environmental accounting in institutions leads to the production of accounting information that is more transparent and more relevant to all parties that use it.
- Adapting the traditional accounting system is the best method for identifying environmental costs, tracking their effects, and determining the environmental benefits they generate. All of this is carried out within the framework of environmental accounting, which provides information on the institution's environmental performance, given that information relating to environmental performance is both financial and quantitative in nature, which gives it a direct effect on the institution's financial position and the results of its activity.

- Accounting measurement and disclosure of environmental costs and assets in institutions' financial statements enables them to achieve a number of intangible objectives, the most important of which is a good reputation.
- Financial statements prepared by the institution differ from environmental financial statements in terms of the property of comprehensiveness: the environmental financial statements are more comprehensive and contain financial and environmental information.
- Accounting measurement of environmental costs contributes to strengthening the confidence of users of accounting information.

Based on this research paper and the results reached, the following **recommendations** can be made:

- Economic institutions must adopt a clear policy of measuring and disclosing environmental costs in their financial statements, in order to increase the transparency of accounting information and assist its users in making their decisions.
- Training workshops and awareness sessions should be organized for economic institutions to educate them about the concept of social and environmental responsibility, so that they keep pace with developments in accounting thought.
- Training and educational programs should be allocated to those responsible for preparing financial statements in order to acquaint them with the requirements of accounting measurement of environmental costs.
- Attention must be paid to measuring environmental costs by institutions, despite the inherent difficulties, with the goal of building a sound accounting information base.
- It is necessary to establish an appropriate and stimulating tax system and customs policy that encourages environmental disclosure.
- An environmental information system should be set up to improve environmental management, as the existence of such systems is a fundamental prerequisite for incorporating environmental considerations into various activities.
- International and national scientific accounting organizations and bodies must fulfill their role by issuing specific accounting standards that require industrial institutions to measure and disclose environmental costs in their financial reports.
- Oversight should be enforced by having statutory auditors fulfill their required role in examining and reporting on the extent to which the institution under audit complies with environmental performance in accordance with the relevant legislation and the required standards.

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