

Environmental Management System, Introduction to Improve Environmental Performance: A Case study of SCAEK, Setif

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Abstract: The purpose of this study is to illustrate how the Environmental Management System (EMS) helps the Cement Company Ain El Kabira Setif (SCAEK) improve its environmental performance in terms of waste, energy use, and dust emission control. Interpreting the numerous concepts and analyzing the various data and statistics gathered for the applied study are done using the descriptive approach. According to the study's findings, EMS adoption improves environmental performance by minimizing and treating waste, regulating emissions, and rationalizing energy use.

Keywords: Environmental Management; Environmental Management System; Environmental Performance.

1. Introduction

The economic institution has been burdened with new duties, responsibilities, and challenges, including the environmental aspect, as concern for environmental protection has become a moral responsibility and an inevitable necessity for economic institutions. This is due to the growing environmental awareness among various segments of society in general, as well as the escalation of environmental risks resulting from the amazing technological development that the world is aware of, such as the ozone layer erosion, the phenomenon of global warming, drought, desertification, air and water pollution, loss of biodiversity, climate change, and the scarcity of natural resources.

Economic organizations have grown increasingly interested in environmental trends, and the majority of them have an environmental policy that outlines their goals and the guidelines they follow when it comes to the environmental focus of their operations. By reducing pollution, treating and properly disposing of waste, improving the use of resources and energy (such as gas, electricity, and water) and rationalizing their consumption, and lowering gas emissions, economic institutions aim to improve their environmental performance in this context. This helps to reduce and preserve the extent of the negative environmental effects.

By adopting the ISO 14001 Environmental Management System, which serves as a mechanism for evaluating and monitoring environmental performance and a tool for

regulating the extent of application of environmental protection requirements and obligations, an economic institution can effectively contribute to the development and protection of its environment by incorporating environmental considerations and trends into the various activities it undertakes. This helps the institution achieve its environmental objectives and improve its environmental performance.

1.1. Research Problematic

In this regard, the Cement Company Ain El Kabira in setif is one of the leading organisations that adopted the ISO 14001 environmental management system since 2008, and has kept abreast of the various developments and changes, the most recent of which was ISO 14001 version 2015, in order to improve its environmental performance and preserve the environment.

Through the above, the main question of this study is as follows:

Does the Environmental Management System (EMS) contribute to improving environmental performance at Ain El Kabira Cement Company in Setif?

The following sub-questions fall under this main question:

- Does the environmental management system contribute to rationalising energy consumption at Ain El Kabira Cement Company in Setif?
- Does the EMS contribute to minimising the volume of gaseous emissions at Ain El Kabira Cement Company?
- Does the EMS contribute to the treatment of various wastes in the cement company Ain El KabiraSetif?

1.2.Hypotheses of the study

-Main hypothesis: The Environmental Management System (EMS) contributes to improving environmental performance at Ain El Kabira Cement Company in Setif .

From this main hypothesis, the following sub-hypotheses emerge:

- EMS contributes to the rationalisation of energy consumption at Ain El Kabira Cement Company in Setif;
- The EMS contributes to minimising the volume of dust emissions at Ain El Kabira Cement Company Setif;
- The environmental management system contributes to protecting the environment from pollution by waste in the cement company Ain El KabiraSetif.

1.3. Research Aims

This study aims to confirm the important role played by the Environmental Management System (EMS) in improving the environmental performance of economic institutions in terms of energy consumption, emissions and waste treatment, and to raise the awareness of economic institutions of the importance of environmental performance and the need to adopt an environmental management system that helps them to improve the environmental aspects of their various activities, which in turn reflects positively on the environment.

1.4. Methodology of the study

The descriptive method, which combines theoretical literature by relying on various references from books, theses, and articles in order to prepare the theoretical aspect of the study, and the analysis of the various information, data, and statistics obtained from the institution under study in the applied aspect, will be used in this study after reviewing the prior research on the topic and taking into account the problem of the study.

1.5. Previous studies

- The study Tinuke Moradeke Fapohunda and others (2021)'s study investigates the Green Training and Development Practices on Environmental Sustainability: Evidence from WAMCO PLC, Journal of Educational Management & Social Sciences (JEMSS), Volume 02, Issue 01, Indonesia.

The study concluded that the development of green skills has a significant impact on environmental awareness, and there it was found that there is a strong and positive relationship between environmental sustainability and environmental management systems (by individuals). Which aims to learn more about how employee commitment to environmental issues and environmental awareness is affected by the acquisition of green skills..

- Iyad Yafi & others (2021), contribute by Impact of Green Training on Environmental Performance through Mediating Role of Competencies and Motivation, Journal of Sustainability, Malaysia, Volume 13, Issue 10. The purpose of this study is to study how green training for human resources affects the environmental performance of economic organizations. It concluded that it is necessary to promote green training for employee behaviors, which contributes to their environmentally friendly practices, and also helps to promote a culture of environmental sustainability within organizations. Where are the environmental approaches of economic organizations helping to create new technologies that reduce emissions and increase the efficiency of the use of natural resources.

- The study by Bentayeb Ali (2021/2022) aimed to determine the impact of applying the integrated management system on achieving sustainability in economic institutions - a case study of a group of institutions, PhD thesis in management sciences, Faculty of Economic, Commercial and Management Sciences, University of Setif1. This study aimed to identify the impact of the application of integrated management systems (ISO 9001, ISO 14001, ISO 45001) on sustainability in an economic organization (overall performance, stakeholder satisfaction, control of economic, social and environmental risks, continuous improvement), and one of the most important findings of the study is that there is a role for the application of integrated management systems (ISO 9001, ISO 14001 and ISO 45001) on achieving sustainability in Algerian economic institutions through a relationship between these systems and improving sustainable performance (economic, social and environmental) of the organizations under study.

2.Theoretical concepts of EMS and environmental performance

The emergence of sustainable development has imposed several challenges on organisations, including the integration of the dimensions of sustainable development (especially environmental) in the practices of the institution, so new areas of performance have emerged beyond profitability.

2.1.Environmental Management

Many organisations have come to see environmental management as a necessity rather than an option, as it enables organisations to implement new environmental practices to achieve their goals.

2.1.1.The concept of environmental management

William R Magrun defines environmental management as a set of procedures and control methods designed to protect the environment, which includes the rational and efficient use of the various available resources and their sustainable use (حسن, 2001, p. 28), and Kafi defined it as a methodology adopted to find ways to rationalise the consumption of water, energy and various primary resources and reduce environmental impacts that negatively affect the environment (الصادقي, 2019, p. 50).

Others define it as the efforts made by organisations to move closer to achieving environmental goals as an essential part of their strategy (سلامة, 2015, p. 03).

The Swiss Society for Quality and Management Systems defines it as the means by which sustainable development is achieved, the promotion of compliance with environmental legislation, continuous improvement in environmental protection, the promotion of environmental responsibility and the application of an open information policy in the field of environmental protection (management, 2008, p. 02).

2.1.2.Advantages of environmental management

The adoption of the concept of environmental management in the organisation achieves many advantages on several levels, the most important of which are the following: (Union Wallone des entreprise, 2020, p. 10)

- Strong employee mobilization: workers are motivated to accomplish particular environmental objectives;
- Environmental risks are effectively identified, evaluated, and solutions are developed to reduce their environmental impact;
- Improve resource efficiency by minimising the consumption of energy and raw materials;
- Minimise waste disposal costs and avoid environmental fines;
- Enhance the company's reputation and image to help it draw in new clients and strengthen its bonds with investors as a conscientious business;
- Improve the organisation's relationships with suppliers and with organisations that share the same values;
- Promote environmental innovation: Developing new environmentally friendly products and services.

2.2.Environmental Management System

It has become essential to include environmental considerations into the various activities of the organization by implementing an environmental management system (EMS) in light of the numerous environmental hazards and incidents that endanger the operations of organizations.

2.2.1.Concept of Environmental Management System

The International Organisation for Standardisation (ISO) defines EMS as a subsystem of the overall management system that includes the organisational structure, planning activities, responsibilities, practices, procedures, processes and resources related to the promotion, implementation, improvement and maintenance of environmental policy (علي, 2022, p. 132) .

EMS is a subsystem of the larger system that is used as an effective tool to maintain sustainability through the functions involved, to apply it and to take responsibility towards the environment and society, thus acting as a link between the organisation and the environment (علاّب, 2016, p. 217).

Thus, it can be said that the EMS is a tool used by environmental management to achieve the goals set in the field of improving environmental performance and achieving sustainability.

Examples of environmental management systems include ISO 14001, an international standard for an environmental management system, and EMAS, a European environmental management system. It is an international standard that aims to reach sustainability and create an effective environmental management system that can be applied by all organisations of all sizes and types (الشيخ, 2018, p. 73) .

2.2.2.Importance of EMS

There are many benefits that organisations reap by implementing an ISO 14001-compliant EMS: (Matuzak, 2009, p. 412)

- Caring for the environment and preserving it;
- Educating staff members on the importance of protecting the environment;
- Making concern for the environment part of the organisation's strategy;
- Integrate the EMS with the quality management system to achieve the required efficiency;
- Contribute to improving the environmental health of the local community surrounding the organization;
- Improve the competitiveness of products in increasingly environmentally constrained global markets;
- Minimise the negative impacts of the organisation's activities on the environment;
- Contribute to increasing market share.

Generally speaking, an organization's benefits from establishing an EMS are included in the benefits it receives from embracing the environmental management concept.

2.3.Environmental Performance

Environmental performance refers to the efficiency of environmental management systems applied by organisations to protect the environment, through environmental policies that focus on the activities of organisations in order to reduce their negative impacts on the environment and the society in which they operate (العابب, 2012, p. 83) .

2.3.1.The concept of environmental performance

According to Jean Jacques Pluchart, an organization's attempts to recognize environmental threats (such as gas emissions, global warming, drought, and water and air pollution) and rationalize its use of energy and raw materials lead to its environmental performance, etc (Pluchart, 2011, p. 105), and Lilly Scheibe defines it as all of an organisation's behaviours towards the environment regardless of whether they affect it or not, i.e. environmental performance is the organisation's impact on the environment, whether positive or negative (عثمان, 2008, p. 524).

2.3.2. Why organisations care about environmental performance

Environmental performance is important because it lowers costs by lowering the prices of raw materials, energy, services, capital, and labor. It also increases revenues by opening up specific markets, diversifying products, and selling specialized technology to reduce pollution (Silva, 2013, p. 06).

These mechanisms can be summarised in the following table:

Table 1: Importance and drivers of an organisation's interest in environmental performance

Mechanisms	Examples/Description
Increasing revenue	
Opportunities to enter new markets	Many organizations are adopting responsible purchasing policies
Product diversification	Cascades is the sole Canadian producer of tissue and fine papers, having obtained a "Totally Chlorine-Free" certification for some of its products
Selling anti-pollution technology	Developing patents for waste recycling technology
Reducing costs	
Risk management and external stakeholder relationships	Mitigating litigation risks associated with environmental incidents and complaints
Cost of raw materials, energy, and services	Organizations can generate significant revenue by utilizing and promoting clean, environmentally friendly technology
Cost of capital	Environmental performance has become a standard for institutions to obtain loans from financial institutions
Labor cost	Occupational health and safety costs for employees can be reduced by improving environmental performance and decreasing employee turnover

Source : Laurent Da Silva, 2013, p 07

2.3.3. Environmental Performance Indicators

An environmental performance indicator is a tool that gives details on an organization's detailed progress on environmental issues. Examples include the quantity of waste generated, the number of environmental targets met, and the evolution of annual water use (Eddy Bauring, 2010, p. 06).

According to Laurent Da Silva, environmental performance indicators are divided into: (Silva, 2013, p. 20)

- Indicators of management performance: These metrics assess the organization's attempts to affect the environmental performance of its operations. Predicting performance changes, determining the primary causes of environmental performance targets being surpassed or not met, and spotting chances for preventive action are all examples of management performance indicators;

- Operational performance indicators: These metrics assess how well an organization's operations produce emissions and waste. They are seen as metrics to measure actions that are not desirable, and they are partly a result of management decisions about environmental management. Some examples of these indicators are: Carbon dioxide emissions, water use, and untreated water outflow;

- Environmental status indicators, which offer details on the local, regional, national, or worldwide state of the environment.

Measurement of environmental performance, information for environmental reporting, integration of the EMS into the organization, continuous improvement of the environment in which the organization operates, measurement and documentation of the decoupling between resource use and profits, and the ability to effectively manage environmental performance are the goals of environmental performance indicators (Engel, 2015, p. 08).

3.SCAEK Cement Company Case Study

SCAEK is one of the leading organisations in the environmental field, as it has been one of the first organisations to obtain the ISO 14001 certification since 2008, up to the latest version of the ISO 14001 Environmental Management System (EMS) in 2015.

3. 1.Environmental Policy of SCAEK Cement Company

In the following, we will briefly review the main themes of SCAEK's environmental policy:

- Protecting the environment from pollution and taking measures at various levels to preserve it by reducing pollution and emissions, recycling and valorising waste;
- Work to respect the conditions related to providing a healthy, safe and risk-free environment to enable its workers to perform their tasks comfortably;
- Ensure compliance with the various laws, regulations and procedures related to respecting quality, occupational health and safety and environmental preservation, as an approach to achieving sustainability in the company;
- Focus on respecting all conditions and procedures that minimise accidents in the workplace;
- Rationalising the consumption of various energy sources (electricity, water, gas), and the efficient and rational use of the various primary resources it uses in its activities;
- Disclose and publish parameters related to environmental protection (accounting information, maintenance costs, training, afforestation, green initiatives, etc.) and enable all stakeholders to have access to them

The following table shows the percentage of SCAEK's compliance with various environmental laws and regulations:

Table 2: Regulatory compliance with environmental regulations at SCAEK

Indicator	Year	Compliance rate	Number of appliedtexts	Number of impementedtexts	Goals
Environmental compliance	2016	%82	23	29	100%
	2017, 2018, 2019, 2020, 2021	%89	25	28	100%

Source: Prepared by the researcher, based on documents provided by the institution

It is clear from the above table that SCAEK complies with environmental laws and rules by 89%, in 2016 the compliance rate was only 82%, due to the lack of compliance with environmental laws in the discharge of liquid waste, and within the framework of the company's environmental responsibility, the company initiated the establishment of a wastewater treatment plant in both production lines 1 and 2 in

2017, and allocated a new place for temporary storage of waste before treatment, which reflected positively on the company's compliance rate with environmental laws and rules, where the compliance rate increased to 89% as of 2017, which is an acceptable rate.

3.2. Energy consumption at SCAEK

In the following, we will try to review some statistics related to energy consumption (water, electricity, gas) from 2017 to 2021

3.2.1. Electricity consumption in SCAEK

The following table shows the degree of electricity consumption by SCAEK during the performance of its various activities.

Table 3: SCAEK's electricity consumption

Years	Electricity consumption			
	Production line 2		Production line 1	
	DZD	KWT	DZD	KWT
2017	356775923.76	146575000	405552683.30	180164000
2018	471707383.51	197863000	397239818.26	172258000
2019	457137731.84	187347468	350246853.53	153736532
2020	371647316.00	162236697	353435402.00	153977157
2021	361820079.00	156918541	318890147.00	138951459

Source: Prepared by the researcher, based on documents provided by the institution

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The table above shows the volume and cost of the total and unitary (per tonne) consumption of electricity at the level of the Ain El Kabira Cement Company in Setif, for the years 2017 to 2021, and through our reading of the table, we note that electricity consumption is decreasing from year to year at the level of production line 1, where the total consumption reached 18016400 kW at a cost of 405552683. 30 DZD for the year 2017, with a consumption of 129.30 kW and 291.07 dj per tonne, while in 2021 the total consumption reached 138951459 kW at a cost of 318890147.00 DZD, with a consumption of 164.75 kW and 378.16 DZD per tonne, which indicates the keenness of the Cement Company Ain El Kabira in Setif to rationalise and rationalise electricity consumption.

At the level of production line 2, we observe during the years 2017, 2018 and 2019 an increase in electricity consumption, from 146575000 kW at a cost of 356775923.76 DZD, by consuming 97.25 kW at a cost of 236.72 DZD per tonne during 2017, to consuming 187347468 kW at a cost of 457137731 DZD. We explain this by considering the recent launch of production line 2, while during the years 2020 and 2021, we notice a noticeable decrease where the total electricity consumption reached 156918541 kW at a cost of 361820079.00 DZD during the year 2021, with a consumption of 156918541 kW at a cost of 361820079.00 DZD.

In general, Ain El Kabira Cement Company in Setif is keen to rationalise and rationalise the consumption of electricity by adopting and implementing several measures, including:

- Work to identify the points that consume high electrical energy;
- Renewing lighting lamps with new ones, with strong lighting and less consumption of electrical energy;
- Operate machines that consume a lot of electricity alternately and avoid operating them all at once, in addition to avoiding operating such machines during

peak periods;

- Replace electrical equipment and fittings with modern ones with rational electricity consumption;
- Installing circuit-level capacitors in various units of the company to optimise the capacity factor.

3.2.2. Gas consumption at SCAEK

The following table shows the degree of gas consumption by SCAEK during the performance of its various activities.

Table 4: Gas consumption at SCAEK

Years	Gas consumption			
	Production line 2		Production line 1	
	DZD	NM3	DZD	NM3
2017	229739346.67	120936225	195302697.70	110077319
2018	215360704.84	108110695	191966166.15	105850743
2019	288997273.32	153933462	179233883.72	97121231
2020	269663917.84	139242936	176889832.70	98687436
2021	260960365.00	135247208	162781605.00	88878779

Source: Prepared by the researcher, based on documents provided by the institution

The table above shows the total and unitary consumption (per tonne) of gas at the Ain El Kabira Cement Company in Setif, for the years 2017 to 2021, and through our reading of the table, we notice at the level of production line 1 that the quantities of gas consumed in the production process decrease from year to year, where we find that it reached 110077319 NM3 at a cost of 195302697. 70 dj during the year 2017, and then began to decrease, reaching 88878779 NM3 at a cost of 162781605.00 dj during the year 2021, while at the level of production line 2, we notice an increase in the quantities of gas consumption during the years 2017 to 2020, with a slight decrease during the year 2021, and the increased gas consumption at the level of production line 2 is due to the large and increasing quantities of production at the level of production line 2.

In general, the Ain El Kabira Cement Company in Setif is keen to rationalise its gas consumption by taking several measures to this end, including replacing the kiln nozzle with another nozzle with a rotating flame, ensuring regular and continuous maintenance of the kiln, and keeping pace with technological development in terms of equipment and equipment used to consume gas.

3.2.3. Water Consumption at Ain El Kebira Cement Company SCAEK

We will review in the following table the water consumption level of the Ain El Kebira Cement Company (SCAEC) during the performance of its various activities.

Table 5: Water consumption at SCAEK

Years	Water consumption			
	Production line 2		Production line 1	
	DZD	M3	DZD	M3
2017	4107874.46	132972	4708074.79	152.401
2018	2096506.44	68.724	3205784.22	105.086
2019	2844646.97	92.632	1809748.15	67.084
2020			382005.66	12.804
2021			369782.11	7.731

Source: Prepared by the researcher, based on documents provided by the institution

The table above shows the total and unit (per ton) water consumption at the Ain El Kebira Cement Company in Setif, for the years 2017 to 2021. From our reading of

the table, we notice that water consumption at the level of production line 1 is continuously decreasing, where the total water consumption reached 152,401 m³ at a cost of 4,708,074.79 DZD in 2017, while it reached 7,731 m³ at a cost of 369,782.11 DZD in 2021. As for production line 2, we notice that when production line 2 was put into service in 2017, the total consumption reached 132,972 m³ at a cost of 41,078,721.46 DZD, and then water consumption began to decrease, reaching 92,632 m³ at a cost of 2,844,646.97 DZD in 2019.

In general, the Ain El Kebira Cement Company in Setif is keen on rationalizing and optimizing its water consumption in various areas and across different stages of the production process. We find that it has initiated a series of measures and actions to rationalize water consumption, including wetting fabric filters, adopting modern techniques for collecting and treating wastewater for reuse, and implementing advanced and modern technology with lower water consumption in production line

Based on the above and according to Tables 3, 4, and 5, which show the total and unit consumption of electricity, gas, and water respectively, it is evident that the adoption of an environmental management system by the Ain El Kebira Cement Company in Setif contributes to rationalizing and optimizing its consumption of electricity, gas, and water. This is based on the measures and procedures taken to achieve acceptable rates of electricity, gas, and water consumption, which confirms the validity of the first sub-hypothesis, stating that the environmental management system contributes to optimizing energy consumption in the Ain El Kebira Cement Company in Setif.

3.3. Dust emissions from Ain El Kebira Cement Company SCAEK

We will review in the following table the amount of dust emissions from the Ain El Kebira Cement Company (SCAEC) during its various activities, noting that the permissible dust amount is 50 MG/NM³ when the factory equipment and facilities are old, and MG/NM³30 when the factory equipment and facilities are new.

Table 6: Dust Emissions at Ain El Kebira Cement Company SCAEK

Statement	Production line 1			
	Years			Allowable dust levelMG/NM ³
	2021	2020	2019	
Filter AAF	7.74	7.85	6.07	50
Coolingfilter L45	6.81	6.29	5.36	50
Coolingfilter L46	6.05	6.47	10.45	50
Cement zon filter N204	6.56	7.43	11.39	50
Cement zon filter N304	7.55	11.17	14.43	50
Statement	Production line 2			
	Years			Allowable dust levelMG/NM ³
	2021	2020	2019	
Furnacefilter for line 2	6.64	3.90	5.17	30
Coolingfilter for line 2	3.31	2.93	2.80	30
Cement zon filter for line 2 BK1	3.29	1.85	2.27	30
Cement zon filter for line 2 BK2	4.57	4.37	2.13	30
Cement zon filter for line 2 BK3	1.98	1.69	4.93	30

Source: Prepared by the researcher, based on documents provided by the institution

The table above shows the volume of dust emissions resulting from the activities of the Ain El Kebira Cement Company in Setif at the level of production lines 1 and 2 for the years 2019, 2020, and 2021. From our reading of the table, we notice that the volume of dust emissions at the level of production line 1 is higher than that of production line 2. We explain this by the modernity of the equipment and machinery used in production line 2 compared to production line 1. On the other hand, we

observe that the volume of dust emissions in various areas of production line 1 is less than the permissible dust amount in the case of old equipment and machinery, represented by MG/NM350. Similarly, the volume of dust emissions in production line 2 is all less than the permissible dust amount in the case of modern equipment, represented by MG/NM330. This means that the Ain El Kebira Cement Company in Setif has succeeded in controlling the volume of its dust emissions, which contributes to environmental preservation and protection. From the above, we conclude that the adoption of an environmental management system by the Ain El Kebira Cement Company in Setif has contributed to reducing the volume of dust emissions, which confirms the validity of the second sub-hypothesis, which states that the environmental management system contributes to reducing the volume of dust emissions at the Ain El Kebira Cement Company in Setif.

3.4. Waste from the Ain El Kebira Cement Company SCAEK

We will present in the following table the quantity and volume of waste resulting from the activities of the Ain El Kebira cement company in Setif, from the year 2019 to the year 2021.

Table 7: Waste Quantity at Ain El Kebira Cement Company SCAEK

Waste type	Years			Unit
	2021	2020	2019	
Healthcare waste	0	0.08	0	KG
Usedoil	64100	60680	71300	Liter
Batteries	251	18	159	Piece
Filters	537	524	126	Piece
Cement bags	107157	135664	117172	Piece
Cement waste	9370	5300	65232	Ton
Flourwaste	22297	26779	32340	Ton
Iron	223.7	247.52	92.2	Ton
Electronicequipment	0.6	0.38	2.4	Ton
Packaging paper and cardboard	49.3	12.65	12.5	Ton

Source: Prepared by the researcher, based on documents provided by the institution

The table above shows the quantities and types of waste produced by the Ain El Kebira Cement Company in Setif for the years 2019, 2020, and 2021. By examining the statistics presented in the table, we find that there are highly controlled wastes, such as healthcare waste, which were absent in 2019 and 2021, and amounted to 0.08 kg in 2020 due to the preventive measures taken during the COVID-19 pandemic. The same applies to electronic equipment waste. Meanwhile, the Ain El Kebira Cement Company in Setif recycles other types of waste by following a set of methods and techniques, including:

- The policy of source reduction through the adoption of advanced technological techniques to control pollution at the source, especially at production line 2;
- Waste valorization policy through sanitary landfilling, incineration, biological treatment, mechanical and biological treatment, solid waste recycling, and reuse.

Regarding the liquid waste from water and its compliance with environmental standards, laboratory tests were conducted at Al-Hayat Laboratory, which is an accredited lab, and the results were as follows:

Table 8: Waste Quantity at Ain El Kebira Cement Company SCAEK

Area	Analysisresults
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Wastewaterfrommills	Not matching
Industrialwastewater, Kitchenwastewaterfrommills, Industrialkitchenwastewater, Well water 1, Well water 2, Well water 3, Storage water in the factory kitchen, Main storage water	Identical
Marjet Said water	Not matching

Source: Prepared by the researcher, based on documents provided by the institution

We observe from the above table a near-total control over the liquid waste from water, as laboratory analyses conducted at the accredited laboratory (accredited by the state) have proven that most of the liquid waste from the Ain El Kebira cement company in Setif complies with environmental protection standards, except for the water used in the mills and the water from the Merja El Saeed.

Through what has been previously discussed and addressed in Tables 7 and 8, we find that the Ain El Kebira Cement Company in Setif is making tremendous efforts to reduce various types of waste, both solid and liquid. The company recycles most of it to reuse in the production process, which positively impacts the institution economically by reusing waste after recycling it as raw materials, and environmentally by contributing to the preservation of the environment from pollution. This confirms the validity of the third sub-hypothesis, which states that the environmental management system contributes to protecting the environment from pollution due to waste at the Ain El Kebira Cement Company in Setif.

Based on the previous discussion through the analysis of tables 3, 4, 5, 6, 7, 8, which we have proven the validity of the sub-hypotheses, where we found that the adoption of the environmental management system by Ain El Kebira Cement Company in Setif contributes to rationalizing and optimizing the consumption of electricity, gas, and water, and helps reduce dust emissions to below the permissible amount according to environmental standards. It also contributes to protecting the environment from pollution by reducing, treating, and reusing waste. We conclude that the environmental management system in Ain El Kebira Cement Company in Setif contributes to improving its environmental performance, which confirms the validity of the main hypothesis.

4. Conclusion

Through the applied study at the Ain El Kebira Cement Company in Setif, where we attempted to examine the aspects of the environmental management system's contribution to improving environmental performance, the following results were reached:

The issue of environmental protection and preservation is a priority for Ain El Kebira Cement Company in Setif, as it incorporates environmental considerations into its various activities;

- Ain El Kebira Cement Company in Setif adheres to various laws and regulations related to environmental protection;

- The Ain El Kebira Cement Company in Setif relies on a pollution reduction policy at the source, by adopting advanced technological techniques and using raw materials that are less polluting to the environment;

- The environmental management system of the Ain El Kebira Cement Company in Setif is regularly and continuously reviewed.;

- Setif's Ain El Kebira Cement Company is committed to purifying wastewater

before releasing it into the environment.;

- The Ain El Kebira Cement Company in Setif is accurately locating the locations with excessive electrical energy consumption and implementing the required corrective actions.;

- During peak hours, the Ain El Kebira Cement Company refrains from running machinery that uses a lot of electricity;

- The Ain El Kebira Cement Company in Setif is dedicated to maintaining a variety of infrastructure and equipment, including kilns and filters of all kinds, on a regular and ongoing basis;

- In accordance with environmental regulations, the Ain El Kebira Cement Company in Setif keeps dust emissions within allowable bounds;

- The Ain El Kebira Cement Company in Setif relies on a waste valorization policy through a set of methods such as sanitary landfilling, biological and mechanical treatment, incineration, and reuse.

A set of the following suggestions has been presented:

- The necessity of working on updating and renewing various equipment and installations at the level of production line 1, to keep up with various eco-friendly technological and technical developments;

- Greater efforts should be made to ensure that the wastewater from the mills and the water from Marja Al-Saeed meet environmental standards;

- Establishing a sales point for a variety of waste such as used oils, batteries, iron, paper, and packaging cardboard, or contracting with private institutions that buy such waste from them;

- Renewing the road network within the company by resurfacing it to further reduce dust accumulation in the area;

- Training specialized frameworks in the environmental field, to better predict environmental problems and work on avoiding or addressing them;

- I have a responsible purchasing policy for various raw materials used in the production process, to make them less polluting and more environmentally friendly;

- The use of phrases and symbols on cement bags, indicating the company's commitment to respecting and protecting the environment from pollution.

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