

**PROMOTION AND ADOPTION OF
ENVIRONMENTAL MANAGEMENT SYSTEMS**

**A CONCEPT PAPER FOR THE
INTEGRATED ENVIRONMENTAL
MANAGEMENT SYSTEM IN THE
10TH OF RAMADAN INDUSTRIAL CITY**

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Purpose

The purpose of this document is to outline an effective and simplified approach to promote the development and adoption of an Environmental Management System (EMS) by individual industrial facilities in the 10th of Ramadan Industrial City. This paper has been prepared for the Egyptian Environmental Policy Program.

The Egyptian Environmental Policy Program (EEPP) is a four-year program to support policy, regulatory, and institutional reforms that promote environmental quality and protect natural resources. The program is focused on accomplishing 15 policy objectives. This paper has been prepared to support policy objective #9: “The Ministry of State for the Environmental Affairs and Egyptian Environmental Affairs Agency (MSEA/EEAA), in cooperation with industrial stakeholders and relevant GOE entities, will develop pollution reduction strategies which will generate higher rates of compliance.” During the first 18 months of EEPP, activities under this objective are focused on assisting EEAA, in association with the Investors’ Association and relevant stakeholders, to design and initiate implementation of the Integrated Environmental Management System for the 10th of Ramadan Industrial City.

Background

The organizing framework for planning, monitoring, reviewing, and improving an organization’s environmental activities is its Environmental Management System (EMS). An EMS is that part of the overall management system which includes organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing, and maintaining an organization’s environmental policy.

The EMS implementation approach described in this paper is designed to illustrate the adoption of a simplified EMS based on ISO 14001. For the purposes of this document, the EMS program will be referred to as “**ISO Lite**.”

The ISO 14001 standard is published in the document, “Environmental Management Systems – Specification with Guidance for Use.” It contains the internationally accepted requirements or specifications for the elements that must be present in an organization’s EMS. This standard is the basis for the approach presented in this paper.

The purpose of ISO 14001 is to:

- Prevent adverse environmental effects;
- Improve environmental performance;
- Promote environmental ethic; and
- Decrease compliance operating costs.

The ISO process facilitates the creation of **voluntary, private sector, and consensus** standards. ISO has no governmental authority to impose standards on anyone, so the standards developed through ISO are voluntary. The basic approach of ISO 14001 asks an

organization to **say** what it is going to do; **do** it; and be able to **demonstrate** that it did it. This standardized process will become the measure and the basis for comparison for judging the value or the quality of an organization's environmental efforts.

Since the publication of the ISO 14001 standard in the fall of 1996, many books and pamphlets have been directed at users to provide them with assistance and guidance for the implementation of EMSs. While much of this information has been generally interesting and somewhat useful for shedding light on the processes and politics for crafting international standards, little of it can actually be applied to the creation and implementation of a working system. The main reason for that is that those works were created while there was still insufficient experience with EMS implementation to draw on real lessons learned, and the tools to facilitate implementation had yet to be developed.

The purpose of the approach to EMS outlined in this paper, then, is to help organizations to implement an ISO 14001 EMS by giving them a clear idea of what that means, what it takes to do so, and what approaches and tools to use to make it as easy as possible. What is not covered here is the history of the development of the ISO 14000 series of standards, standards development politics, and ISO 14001 public policy issues. All of these other topics are valuable and interesting, but there are other books and articles that deal with them. Here, we are only interested with how best to implement an effective and useful EMS in industrial facilities in the 10th of Ramadan and ultimately, throughout Egypt.

ISO Lite Program

Environmental performance has become a competitive factor globally and, increasingly, in Egypt. The ISO 14001 approach builds on market forces that encourage industries to undertake voluntary actions for cleaner operations and more environmentally friendly products. In this context, a simplified EMS based on the ISO 14001 is an excellent tool for enhancing industrial environmental capabilities and overall competitiveness. For the 10th of Ramadan, an EMS based on an internationally accepted standard has the potential to streamline its processes and procedures, improve its operational efficiency, and increase its overall level of performance and export/import market positioning.

If we look at the ISO 14001 standard itself to see how it is structured, we see five key elements that an EMS must contain:

1. **Environmental Policy** – an organization should define its environmental policy and ensure commitment to its EMS.
2. **Planning** – an organization should formulate a plan to fulfill its environmental policy.
3. **Implementation and Operation** – an organization should develop the capabilities and support mechanisms necessary to achieve its environmental policy, objectives and targets.
4. **Checking and Corrective Action** – an organization should measure, monitor and evaluate its environmental performance.

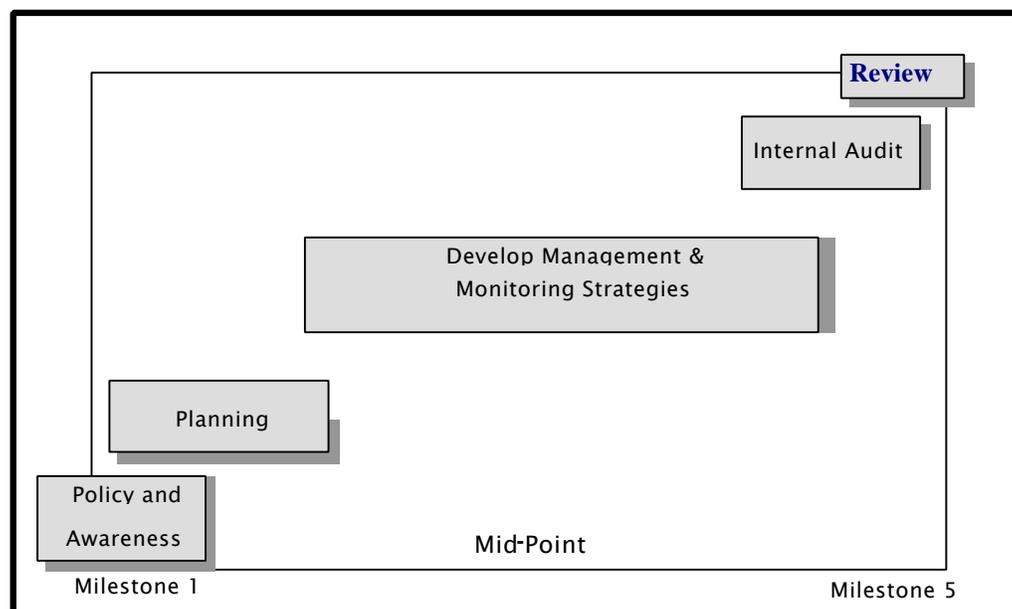
5. **Management Review** – an organization should review and continually improve its environmental management system, with the objective of improving its overall environmental performance.

The ISO Lite program is a customized version of ISO 14001 tailored for industrial enterprises in developing countries. Unlike the conventional ISO 14001 packages, the ISO Lite version recognizes that the environmental management baseline of industrial enterprises in developing countries is not as mature as that of developed-country enterprises. Consequently, the pace of implementation and sequencing of critical elements are appropriately toned down without compromising the quality of the system nor precluding “early-adopters” from pursuing the full breadth of requirements under the international standard.

The ISO Lite implementation strategy addresses the development of a systematic approach, rather than a collection of unconnected requirements and provides a “just-in-time” schedule to train participating staff. This ensures that participants have sufficient knowledge, understanding, and materials to lead their individual and team implementation efforts in completing the EMS requirements. This “lighter” program will help firms in the 10th of Ramadan focus on a strategic critical path to accomplish the five critical elements, and incorporate an environmental ethic into their day-to-day activities. As the participating firms reach each of their milestones, they can share information and strategic guidance with other firms within the 10th of Ramadan or in other cities.

The firms will fulfill critical steps during the EMS program development. Program duration for each firm runs between one to six months, depending on the scope of resources and guidance the firm dedicates to program implementation. Exhibit 1 illustrates ISO Lite’s phased approach to EMS implementation.

Exhibit 1. Phased Approach to ISO Lite Implementation



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This approach helps firms cut the EMS implementation time from the average 12 to 18 months down to one to six months, depending on the environmental management experience of the industry. There is no timeframe shown in Exhibit 1 because this will vary from firm to firm. For example, some firms may already have a working environmental management program in place complete with a policy and education program for employees. Other firms, however, may only be starting to consider the integrated approach to managing their environmental impacts. The simplified ISO Lite approach helps firms focus on the **necessary and sufficient** milestones of an EMS to keep the cost definite and reasonable and provide the strong foundation to build a program as expansive and integrative as desired. Throughout the design and construction of the EMS, firms will be encouraged to share lessons learned with one another as well as other Egyptian industrial cities in order to leverage knowledge, skills, and tools.

The ISO Lite approach shown in Table 1 will not only encourage the firms to follow a strategic EMS roadmap, but also prepare the firms for the world-class ISO 14001 standard if they choose to continue developing a more expansive system.

Table 1. ISO Lite Task Description

| Task Number | Task Description |
|-------------|---|
| 1. | Establish Environmental Policy |
| 2. | Distribute Policy and Create Employee Awareness |
| 3. | Establish an Implementation Plan and Employee Education Programs |
| 4. | Select Significant Aspects |
| 5. | Establish Environmental Management Programs and Indicators of Performance |
| 6. | Establish Reporting Procedures |
| 7. | Establish Internal Environmental Auditing |
| 8. | Management Review |

The approach is basic yet robust. Firms can create workgroups, share lessons learned, and promote their successes to vendors, suppliers, and parent companies. The ISO Lite program implementation approach will serve dual sub-goals under EEPP:

- First, firms that implement EMS also improve their productivity and product quality because they use cleaner, more disciplined production methods. Such firms will be **strategically positioned for eventual implementation** of the full ISO 14001 EMS and certification. ISO 14001 certification is becoming a positive differentiator in selling to the global marketplace. Finally, firms that have better environmental performance reduce their risks and liabilities.

- Second, EMS speaks directly to **better management of the environment and natural resources** in targeted sectors. Unlike the command and control demands of regulatory and compliance authorities, environmental management systems connote a company-wide commitment to continual improvement. While the former approach is narrowly focused on preventing harmful releases from end-of-pipe processes, the latter method has a broader scope, offering alternative strategies including pollution prevention, improved utilization of input resources and energy, investing in cleaner production technologies, recycling, and other innovative strategies that go well beyond compliance. The EMS approach is continuous, operates across functions and helps reduce costs and improves productivity.

The steps to the ISO Lite program implementation are described in further detail below.

Step 1 – Establish an Environmental Policy

During this initial and critical step, each firm implementing ISO Lite will develop its Environmental Policy:

- written to satisfy requirements of ISO 14001 for “compliance,” continual improvement” and “prevention of pollution;” and
- appropriate to the nature, scale and environmental dimensions of the organization.

Further, to establish appropriate expedient implementation procedures and management plans that minimize the chances of unexpected obstacles, firms will be encouraged to address the following needs at the beginning of program implementation to ensure success:

- Clarify organizational and communication issues, roles, responsibilities, and authorities of all parties involved and establish clear lines of communication; and
- Assure management involvement and commitment of project participants.

The objective is to avoid implementation glitches by understanding and communicating both benefits and costs as early as possible to all members of the organization.

Step 2 – Distribute the Policy and Create Employee Awareness

The second step in the program requires top management to distribute the environmental policy to employees and take the following actions:

- Inform employees of the new focus; and
- Ask for assistance in highlighting and selecting environmental aspects of the production process.

Management must also appoint a management representative to be the EMS Coordinator, who will be, in effect, the designated “champion” for EMS implementation. This person must be available and committed to EMS implementation and should be relieved

of any other responsibilities during implementation. Similarly, building the Implementation Team is critical to successful project implementation. Key personnel will be chosen by top management to serve as the multi-disciplinary team that can keep the lines of communication open to all areas of the firm.

Step 3 – Establish Employee Education Program

One- to two-day awareness session with guidance on employee involvement will be necessary for those employees that the firm relies on to address the significant aspects and achieve objectives and targets. This training ensures the competency of designated employees associated with significant aspects. The firms may choose to hold the classes in a public facility such as a local university classroom or do the awareness training courses in an auditorium for several firms at a time.

Curriculum for awareness sessions will be provided by the Secretariat for the Integrated Environmental Management System in the 10th of Ramadan, with the support of the EEPP-PSU. The curriculum will be designed to train employees on the basic and critical elements of the firm's environmental efforts and explain their role in the EMS. The training programs will be practical and can be done on-site. Joe Cascio, chair of the U.S. Technical Advisory Group and leader of the U.S. delegation for ISO 14000, will be available to assist the Secretariat and the EEPP-PSU in developing and delivering the training.

Step 4 – Select Significant Aspects

The firms implementing ISO Lite will identify significant environmental aspects of their production processes and determine any legal requirements associated with those aspects. These aspects (and any others that have high potential for cost savings or for avoiding significant environmental risk) will be selected as the significant aspects.

Step 5 – Establish Environmental Management Program and Indicators of Performance

Each firm implementing ISO Lite will need to establish brief programs (one to three pages in length) to address each significant environmental aspects and achieve the regulatory objectives and other established targets. These programs will specify the resources to be applied, the authorities and responsibilities of personnel, the timeframes, and most importantly, the operational controls to ensure proper and lawful operation. The Secretariat for the Integrated Environmental Management System in the 10th of Ramadan, with the support of the EEPP-PSU, will provide each of the firms with an easy-to-read form along with a guidance document containing all of the critical categories to be filled out by employees responsible for the management of the EMS.

The firms will then establish indicators and the methods to monitor and measure indicators, so that the organization can be sure to stay in compliance and can stay current on its progress in achieving objectives and targets. Firms can also use these indicators to benchmark their baseline performance for internal management and external comparison with other firms in the same sector.

Step 6 – Establish Reporting Procedures

Reporting procedures will be written and implemented to provide for the collection and formatting of data so that accurate and useful information can be reported to management, regulators, and stakeholders.

Step 7 – Establish Internal Environmental Auditing

The ISO Lite program relies upon periodic assessments of the EMS itself. This is a program whereby a team of trained internal firm employee auditors periodically audits the environmental (regulatory and system) elements of the organization. The Secretariat for the Integrated Environmental Management System in the 10th of Ramadan, with the support of the EPPP-PSU, will help the firms identify an EMS internal audit team and provide a one-day training course for the team, including guidance on audit plan development.

Step 8 – Management Review

Here, structured procedures are developed to allow top management to review the function and progress of the organization’s EMS and other environmental efforts. Successful EMS implementation requires that management have a realistic understanding of how much effort it involves, has carefully considered the reasons for wanting an EMS, and has effectively communicated those reasons to all employees.

Ensuring Success

Implementing an EMS takes planning, strategy, commitment, and resources. It also requires careful consideration of key activities in order to ensure the long-term viability of the EMS. Exhibit 2 highlights key elements – the “secrets to success” – that will ensure successful EMS implementation at the 10th of Ramadan and beyond.

Exhibit 2: Ensuring Success

| | Ingredient for Success | Proactive Tasks |
|----|---|---|
| 1. | <i>Establish an “employee-owned” program.</i> | <ul style="list-style-type: none"> • Through training, define the importance of the EMS Coordinator and his or her functional requirements. • Provide clear benefits for adopting an EMS approach to promote top management buy-in. • Work closely with key personnel to develop messages and involvement. |
| 2. | <i>The EMS Coordinator shares responsibilities with others.</i> | <ul style="list-style-type: none"> • Create a positive environment to foster involvement. • Through training, provide tools and understanding for EMS Coordinators and key staff to promote participation, such as: <ul style="list-style-type: none"> ○ Help the EMS Coordinator develop cross-functional teams and create open communication pathways among the team members. ○ Obtain inputs across departments -- procurement, legal, internal trainers, environmental safety, and health. |

| | Ingredient for Success | Proactive Tasks |
|----|---|--|
| 3. | <i>Ensure that there is not an over-reliance on consultants.</i> | <ul style="list-style-type: none"> • Provide tools and understanding that empower the firm's personnel to take ownership. • Involve participating staff in deriving reasons for EMS implementation as opposed to a consultant doing it for them. |
| 4. | <i>Assign the EMS Coordinator full-time responsibility for the EMS.</i> | <ul style="list-style-type: none"> • Make the Coordinator available throughout the performance period. • Provide guidance and support to help the EMS Coordinator acquire the confidence and skills to be successful. |
| 5. | <i>Provide effective communications between, and "buy-in" from, staff.</i> | <ul style="list-style-type: none"> • Provide a framework that demonstrates the value of an EMS approach. • Provide suggestions for maximizing internal communications. |
| 6. | <i>Focus on building the system and not on registration/self-declaration.</i> | <ul style="list-style-type: none"> • Assist the firm in moving responsibly toward system implementation. • Focus on putting the system in place and ensuring that each employee feels part of the program. |
| 7. | <i>Bring employees in at the start.</i> | <ul style="list-style-type: none"> • Provide Awareness Training to all employees at the onset of program implementation. |

The objective is to avoid implementation glitches by understanding and communicating both benefits and costs as early as possible to all members of the organization. The success will act as fuel for implementation momentum. As successes are secured in the 10th of Ramadan, EEPP could promote replication of ISO Lite in other industrial cities in Egypt. The Firms completing the steps to ISO Lite will serve as models for other companies that wish to begin the process of instituting an EMS.

EMS Awareness

The success of an EMS depends on employee involvement, commitment, attitudes, and behavior changes. Motivational techniques can help accomplish these desirable outcomes. Many organizations have used promotional strategies to increase employee awareness and involvement. However, these promotional efforts must lead logically and substantively to the desired action or EMS result. The Implementation Team as mentioned in Step 2, above, might seek assistance from the human resources department for this aspect of EMS promotion.

The EMS must also promote awareness among interested parties. During the development and implementation of the ISO Lite program, each firm should consider the views of interested parties when it sets its objectives and targets. Interested parties are individuals or groups concerned with or affected by the environmental performance of the firm. A review of the components of the EMS can help identify interested parties:

- Technology (e.g., suppliers);

- Corporate image (e.g., executive management, community neighbors, schools);
- Operations (e.g., employees and their families);
- Transportation (e.g., employees, Department of Transportation);
- Laws and regulations (i.e., politicians, legal counsel, environmental organizations);
and
- Environmental impacts (e.g., local and national grass-roots organizations, neighbors).

The firm's EMS Coordinator should identify awareness needs for interested parties and, where applicable, coordinate those activities with existing communications and public relations efforts. Activities that the firm may undertake on an as-needed basis include:

1. Developing a promotional strategy to provide ideas to increase firm and community awareness regarding the EMS implementation effort;
2. Providing EMS talking points on an as-needed basis to the City officials, executives, and other parties supporting the implementation effort; and
3. Writing a Case Study about the lessons learned during the EMS implementation effort.