INTRODUCTION TO ENVIRONMENTAL MANAGEMENT SYSTEMS

WHAT IS AN ENVIRONMENTAL MANAGEMENT SYSTEM?

Informal Description

An environmental management system (EMS) is like a tool box equipped with a complete set of all the various types of tools and implements needed by organizations to build and maintain policies and procedures for effective, efficient management of environmental issues. Examples of the kinds of 'tools' needed to construct and support an environmental management system include:

- Knowledge and awareness of environmental concerns, and plans for dealing with them.
- Trained, competent personnel at all levels in the organization with clear roles, responsibilities, and accountabilities for handling environmental matters.
- Consistent operating, communication, reporting, and recording procedures for all activities that have a potential for affecting the environment. These procedures must be designed to eliminate or at least minimize impacts by the organization on the environment.
- Frequent monitoring and recording of the performance of individuals, departments, and operations.
- Timely and appropriate response to environmental problems focusing on immediate corrective actions, and follow-up measures to prevent recurrence.
- Two-way communication of essential information on environmental performance and issues, both vertically and horizontally within the organization, and between the organization and external 'stakeholders'.

Official ISO 14001 Standard Definition

The part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing, and maintaining the environmental policy.

ABOUT ISO – INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO was founded in 1947, and has its headquarters in Geneva, Switzerland. There are currently 136 member countries in ISO, each represented by their National Standards body; 91 are full member countries; 34 are 'correspondent' countries; and there are 11 subscriber members. Thailand (Thai Industrial Standards Institute – TISI) and Vietnam (Directorate for Standards and Quality – TCVN) are full members of ISO. Cambodia (Industrial Standards Bureau - ISC) is a subscriber member, which entitles representatives in the country to receive information on draft standards but not to vote on them. Lao PDR is not yet represented in ISO.

The objective of ISO is to promote consistency and standardization of design and performance criteria worldwide, with the purpose of improving the safety of product applications, and assisting the exchange of goods and services across national boundaries. Because ISO is multinational in composition, the organization also strives to foster cooperation in intellectual, scientific, technological, and economic areas.

ISO functions through almost 3,000 technical committees and working groups, which develop standards in areas such as health; safety; environment; quality; engineering and materials technologies; telecommunications; construction; transportation by road, rail, air, and sea. Electronics and electrical engineering standards are developed separately by IEC (International Electrotechnical Commission).

Each Standard is developed by a committee of experts from ISO member countries, and is circulated to all ISO members in a series of drafts for comments. When consensus has been achieved, the Standard is issued. The process can take several years.

ISO is not an abbreviation for the International Organization for Standardization, but is derived from the Greek word, 'isos', meaning equal (i.e., as in isobar, isotherm, isosceles, isotope, isometric, isomer). ISO is intended to indicate the Organization's purpose, namely standardization or consistent and equal application of procedures. Using the word 'ISO' avoids the possibility of many abbreviations for the organization when translated into different languages.

ISO Standards

ISO had issued more than 13,000 standards by the end of the year 2000. Almost all apply to industrial manufacturing, services, or measurements. Some of the better known standards relate to:

- Photographic film speed (e.g., ISO 100, 200, 400)
- Uniform thickness and dimensions of phone cards and credit cards
- Dimensions and design of containers for freight shipments by sea, rail, and road
- Standardized pitch of threads on screws and bolts so they can be used worldwide
- Standard paper sizes for use in offices (e.g., A4, letter, legal)
- Inside the front cover of every book there is an ISBN number which characterises the book according to its topic and key words; this is an ISO designation
- Many environmental sampling and analytical procedures.

ISO Definition of a Standard

Documented agreement containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics to ensure that materials, products, processes and services are fit for their purpose.

Two fairly recent series of ISO Standards represent a break from the traditional format and focus. The ISO 9000 series on Quality Systems was launched in 1987, and revised in 1994 and 2000. The ISO 14000 series of Environmental Management System standards was first issued in 1996 and is being reviewed in 2001. Both sets of standards are applicable to all types of organizations, and specify requirements for a management system framework. In contrast to other ISO Standards, neither the ISO 9000 nor the ISO 14000 series prescribe specific, quantified data.

ISO 14000 Series of Standards

There are approximately 20 Standards published or in draft form in the ISO 14000 series. The following table summarizes the principle titles.

ISO 14001 Environmental Management Systems Standard

ISO 14001 is the only Standard in the series to which a company can be 'Registered' (i.e., Certified) following audit by an independent, accredited body. Certification agencies must be accredited by a country's National Standards body. Continual efforts are being made by the International Accreditation Forum (IAF) to maintain and improve the vigilance with which certifications are awarded so as to preserve their value and reputation. At the start of the year 2001, almost 23,000 registrations to ISO 14001 had been completed worldwide.

Some Common Misunderstandings About ISO 14001

A common misconception is that an 'ISO 14001 certificate' is issued to an organization. In fact, ISO does not offer

ISO 14001	Environmental Management Systems – Specification with Guidance for Use
ISO 14004	Environmental Management Systems – General Guidelines on Principles, Systems, and Supporting Techniques
ISO 14010	Guidelines for Environmental Auditing – General Principles on Environmental Auditing
ISO 14011	Guidelines for Environmental Auditing – Audit Procedures – Auditing of Environmental Management Systems
ISO 14012	Guidelines for Environmental Auditing – Qualification Criteria for Environmental Auditors
ISO 14020 – 14025	Environmental Labels and Declarations
ISO 14031	Evaluation of Environmental Performance
ISO 14040 – 14048	Life Cycle Assessment
ISO 14050	Environmental Management Vocabulary
ISO 14061	Information to Assist Forestry Organizations in the Use of Environmental Management Systems Standards ISO 14001 and ISO 14004
ISO Guide 64	Guide for the Inclusion of Environmental Aspects in Product Standards

certification. Instead, an organization's environmental management system is assessed in comparison with the requirements of the ISO 14001 Standard and, if it is adequate, may be 'certified/registered to the Standard'. It is incorrect for a company to claim they are 'ISO-Certified'. Registration to ISO 14001 is not a certificate of approval by or from ISO, and does not imply that a product or service is environmentally friendly, though clearly that should be one of the aims of implementing ISO 14001 EMS.

ISO 14001 is not a legal Standard; it is voluntary, although some governments are moving to incorporate compliance with the Standard into their legal framework. The various elements of the Standard do not prescribe performance requirements or specify maximum permissible emission levels. Implementation of the Standard is intended to complement and augment the traditional regulatory 'command and control' approach to environmental compliance by offering a structured means for self-imposed performance goals and self-monitoring of progress towards those goals. All improvement goals must at least meet, and preferably exceed existing legislated standards in the country of operation. Again, however, an ISO 14001 certificate does not guarantee that the organization continually complies with all environmental laws and regulations, since upsets and emergencies inevitably occur from time to time.

BENEFITS AND COSTS OF IMPLEMENTING ISO 14001 EMS

Operational Benefits

Environmental compliance has been seen traditionally by company executives and managers as a cost of doing business, and not as an opportunity for improving 'bottom-line' performance. However, companies with vision will do more than merely try to stay out of trouble with government inspectors, since this mentality is reactive, non-productive, and tiring. Forward-looking companies have found that implementing an EMS that meets ISO 14001 specifications helps them to 'get ahead of the game', and in doing so, saves them money and effort.

The consistent operating practices required under ISO 14001 assist a company to maintain high standards of performance, decrease accidents and incidents, and demonstrate 'due diligence' or reasonable care. Government regulators and courts of law recognize such efforts and are more likely to be understanding if an occasional deviation from exemplary performance occurs.

An ISO 14001 EMS is a risk management tool, which helps to pinpoint vulnerable areas, activities, and equipment in a facility, and guides appropriate corrective and preventive measures. 'Crisis management' of recurring environmental emergencies becomes a thing of the past.

Marketing and Public Relations Benefits

A well-implemented and operated ISO 14001 EMS helps to improve the reputation and public image of a company. Government regulators, customers, local communities, non government organizations (NGO), insurers, lenders, shareholders, and employees all appreciate an organization's demonstrated responsible attitude towards the local, regional, and national environment.

ISO 14001 certification is also becoming a passport to international trade, opening doors by providing evidence of an organization's concern for environmental management. Such recognition helps a company's marketing initiatives and expands investment prospects.

In a survey of companies with registration to ISO 14001, ISO found that competitive advantage and pressure from customers were significant motivators in the decision to embark on ISO 14001 implementation. When several competitors in an industrial sector have achieved registration to ISO 14001, those without such recognition are clearly at a disadvantage. Obvious benefits also were realized in terms of better organization of environmental management activities.

Challenges in Implementing ISO 14001 EMS

The road to ISO 14001 certification can be strenuous and daunting. Business must continue as normal while additional efforts to plan and implement ISO 14001 are demanded from managers and staff whose time is already fully committed to everyday operating needs. Internal resources (e.g., personnel, expertise, equipment, time, and money) can be limiting factors in an organization's decision to pursue ISO 14001 registration. Active support by top management can relieve some of the stresses accompanying the planning and implementation effort. In fact, unless senior managers demonstrate commitment with more than fine words and exhortations, the journey to ISO 14001 is almost sure to be a test of endurance, and may even become stalled.

SUMMARY OF KEY POINTS

- ISO – the International Organization for Standardization issues technical and management systems standards to assist international trade.
- ISO is made up of the National Standards bodies from 136 countries.
- The ISO 14000 series consists of Standards for environmental management systems, environmental auditing, eco-labelling, environmental performance evaluation, and life cycle assessment.
- ISO 14001 is a voluntary Standard, which provides a framework for an EMS that can be assessed by an independent third party accredited certification body.
- Benefits from registration to ISO 14001 include:
  - improved environmental performance
  - Savings in operating costs
  - Improved relations with governments, customers, lenders, insurers, NGO, local communities, and other stakeholders
  - New business, investment, and marketing opportunities
  - Clarity in decision making concerning environmental issues
  - Greater motivation and involvement of all personnel in environmental management.