
**Environmental management systems —
Guidelines for the phased implementation
of an environmental management system,
including the use of environmental
performance evaluation**

*Systèmes de management environnemental — Lignes directrices pour
la mise en application par phases d'un système de management
environnemental, incluant l'utilisation d'une évaluation de performance
environnementale*

ISO 14005:2010

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 14005 was prepared by Technical Committee ISO/TC 207, *Environmental management*, Subcommittee SC 1, *Environmental management systems*.

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Introduction

The purpose of this International Standard is to encourage and guide organizations, especially small- and medium-sized enterprises (SMEs), to develop and implement an environmental management system (EMS) that meets the requirements of ISO 14001. The guidance does not go beyond ISO 14001, except for the inclusion of environmental performance evaluation and is not intended to be used for the interpretation of ISO 14001 nor for certification purposes.

Many organizations have profited from having a formal environmental management system. But many more organizations, especially SMEs, do not have such a system, even though it could benefit them greatly. This International Standard uses a phased approach to implement an environmental management system that can grow, to meet the requirements of the International Standard for environmental management systems, ISO 14001.

A phased approach offers several advantages. Users can readily evaluate how the time and money put into an EMS provides a return. They can see how environmental improvements help to reduce costs, improve their community relations, assist them in demonstrating compliance with legal and other requirements, and help them live up to customer expectations. They can track the benefits of their EMS while they implement their system step by step, adding or expanding elements as they provide value to the organization. When the scope of the EMS includes all of the organization's activities, products and services that it wishes to cover and these are addressed using all the elements of this International Standard to their full extent, the organization would have developed and implemented a system that meets the requirements of ISO 14001.

ISO 14001, the most widely accepted international EMS standard, is a structured approach to managing an organization's environmental matters. It is consistent with, and forms the basis of, many other regional management system approaches.

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Environmental management systems — Guidelines for the phased implementation of an environmental management system, including the use of environmental performance evaluation

1 Scope

This International Standard provides guidance for all organizations, but particularly small- and medium-sized enterprises (SMEs), on the phased development, implementation, maintenance and improvement of an environmental management system. It also includes advice on the integration and use of environmental performance evaluation techniques.

This International Standard is applicable to any organization, regardless of its level of development, the nature of the activities undertaken or the location at which they occur.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1

auditor

person with the competence to conduct an audit

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[ISO 14050:2009, 5.31.1]

2.2

audit findings

results of the evaluation of the collected audit evidence against audit criteria

NOTE Audit findings can indicate either conformity or nonconformity with audit criteria or opportunities for improvement.

[ISO 14050:2009, 5.23]

2.3

audit programme

set of one or more audits planned for a specific time frame and directed towards a specific purpose

NOTE An audit programme includes all activities necessary for planning, organizing and conducting the audits.

[ISO 1450:2009, 5.32]

2.4

continual improvement

recurring process of enhancing the environmental management system in order to achieve improvements in overall environmental performance consistent with the organization's environmental policy

NOTE The process need not take place in all areas of activity simultaneously.

[ISO 14050:2009, 4.7]

2.5

corrective action

action to eliminate the cause of a detected nonconformity

[ISO 14050:2009, 4.4.2]

2.6

document

information and its supporting medium

NOTE 1 The medium can be paper, magnetic, electronic or optical computer disc, photograph or master sample, or a combination thereof.

NOTE 2 Adapted from ISO 9000:2005, 3.7.2.

[ISO 14050:2009, 4.5]

2.7

environment

surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation

NOTE Surroundings in this context extend from within an organization to the global system.

[ISO 14050:2009, 3.1]

2.8

environmental aspect

element of an organization's activities or products or services that can interact with the environment

NOTE A significant environmental aspect has or can have a significant environmental impact.

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[ISO 14050:2009, 3.2]

2.9

environmental impact

any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects

[ISO 14050:2009, 3.3]

2.10

environmental management system

EMS

part of an organization's management system used to develop and implement its environmental policy and manage its environmental aspects

NOTE 1 A management system is a set of interrelated elements used to establish policy and objectives and to achieve those objectives.

NOTE 2 A management system includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources.

[ISO 14050:2009, 4.1]

2.11

environmental objective

overall environmental goal, consistent with the environmental policy, that an organization sets itself to achieve

[ISO 14050:2009, 4.1.2]

2.12**environmental performance**

measurable results of an organization's management of its environmental aspects

NOTE In the context of environmental management systems, results can be measured against the organization's environmental policy, environmental objectives, environmental targets and other environmental performance requirements.

[ISO 14050:2009, 3.16]

2.13**environmental performance evaluation****EPE**

process to facilitate management decisions regarding an organization's environmental performance by selecting indicators, collecting and analysing data, assessing information against environmental performance criteria, reporting and communicating, and periodically reviewing and improving this process

[ISO 14050:2009, 3.16.1]

2.14**environmental performance indicator****EPI**

specific expression that provides information about an organization's environmental performance

[ISO 14050:2009, 3.16.4]

2.15**environmental policy**

overall intentions and direction of an organization related to its environmental performance as formally expressed by top management

NOTE The environmental policy provides a framework for action and for the setting of environmental objectives and environmental targets.

[ISO 14050:2009, 4.1.1]

2.16**environmental target**

detailed performance requirement, applicable to the organization or part thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives

[ISO 14050:2009, 4.1.3]

2.17**interested party**

person or group having an interest in the performance or outcome of an organization or a system

NOTE 1 "Outcome" includes products and agreements. "System" includes product systems and environmental labelling and declaration systems.

NOTE 2 This generic definition is not taken directly from any other document. The concept is defined specifically from the point of view of environmental performance in ISO 14001 (with identical definition in ISO 14004 and ISO 14031), type I environmental labelling in ISO 14024, type III environmental declaration in ISO 14025, and life cycle assessment in ISO 14040.

[ISO 14050:2009, 3.6]

2.18

internal audit

systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the environmental management system audit criteria set by the organization are fulfilled

NOTE In many cases, particularly in smaller organizations, independence can be demonstrated by the freedom from responsibility for the activity being audited.

[ISO 14050:2009, 5.18.1]

2.19

management performance indicator

MPI

environmental performance indicator that provides information about the management efforts to influence an organization's environmental performance

[ISO 14050:2009, 3.16.5]

2.20

nonconformity

non-fulfilment of a requirement

[ISO 14050:2009, 4.3]

2.21

operational performance indicator

OPI

environmental performance indicator that provides information about the environmental performance of an organization's operation

[ISO 14050:2009, 3.16.6]

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2.22

organization

company, corporation, firm, enterprise, authority or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration

NOTE For organizations with more than one operating unit, a single operating unit may be defined as an organization.

[ISO 14050:2009, 3.4]

2.23

phased implementation

any combination of steps, that can be delivered in a sequential way, to fulfil the requirements of an EMS and as determined by the user to suit their needs and resources

2.24

preventive action

action to eliminate the cause of a potential nonconformity

[ISO 14050:2009, 4.4.3]

2.25

prevention of pollution

use of processes, practices, techniques, materials, products, services or energy to avoid, reduce or control (separately or in combination) the creation, emission or discharge of any type of pollutant or waste, in order to reduce adverse environmental impacts

NOTE Prevention of pollution can include source reduction or elimination, process, product or service changes, efficient use of resources, material and energy substitution, reuse, recovery, recycling, reclamation and treatment.

[ISO 14050:2009, 3.11]

2.26**procedure**

specified way to carry out an activity or a process

NOTE Procedures can be documented or not.

[ISO 14050:2009, 4.2]

2.27**record**

document stating results achieved or providing evidence of activities performed

[ISO 14050:2009, 4.6]

3 Phased implementation process**3.1 General**

An organization may decide to apply a systematic approach to managing its environmental aspects in order to solve an individual problem or capitalize on a specific opportunity. Alternatively, the organization may seek to implement an environmental management system (EMS) that enables it to manage its full range of environmental aspects, in order to meet the requirements of ISO 14001.

There are many potential benefits to be gained by an organization from managing its environmental aspects. However, organizations can be deterred from applying a systematic approach to environmental management, if they perceive this as being an inflexible, limiting, bureaucratic or costly process. They can also be overwhelmed by the apparent size of the task.

The model outlined in this International Standard has been developed to help an organization to implement an EMS in a particular way, while growing the extent and scope of the system, through time, in line with the objectives of the organization and the resources available.

Before implementing a phased approach, an organization may need to consider:

- its size;
- its location;
- existing management structures;
- the extent to which environmental issues have been incorporated into day-to-day operational activities;
- cultural needs and aspirations;
- staff availability and expertise;
- limitation of resources.

3.2 Importance of support, commitment and involvement from management and staff

In order to successfully implement an effective EMS which adds value to the organization's activities, it is essential to ensure and maintain support, commitment and involvement from management, including top management and staff. If this is not the case in a particular organization, Clause 4 outlines a possible approach that can be applied to gain sufficient support and commitment to begin implementing an EMS.

More usually, support and commitment grow as people become more involved in the process and begin to benefit from the rewards that can come from managing their environmental aspects.

Management commitment should be reflected in statements of support, such as a policy, but should be followed up by making available the necessary human, financial and other resources to support effective EMS implementation. Those working on the organization's behalf should be motivated to participate in and contribute to the implementation process. Participation and contribution may, among other things, take the form of attendance at meetings, provision of suggestions and use of initiative to promote the understanding and acceptance of the phased implementation process among peers.

3.3 Structure of this International Standard

The content of this International Standard is divided into three key clauses (Clauses 4, 5 and 6).

Clause 4 provides an overview of how an EMS can be applied to environment-related projects. Following the example outlined in Annex D should provide an organization with demonstrable benefits which help to secure sufficient internal commitment and support for environmental management activities to be able to implement an EMS. It can be that the organization decides to conduct several projects, either at the same time or sequentially, in order to secure sufficient commitment and support or to progressively build its level of environmental action.

Alternatively, the organization may decide that it wishes to start implementing immediately an EMS which conforms to the requirements of ISO 14001. In this situation, the organization can move directly to use Clauses 5 and 6. However, the organization can still find it useful to read and refer to the guidance provided in Clause 4 and Annex D throughout this process.

Clause 5 provides the supporting elements that an organization should consider as it plans its phased implementation.

Clause 6 sets out how to identify and manage the environmental aspects that an organization needs to address its environmental issues. An organization that implements, in full, Clauses 5 and 6 would have an EMS that meets the requirements of ISO 14001 (see Annex A).

Annex A (Table A.1) provides a tabular overview of the main and supporting elements required to implement an EMS. Reading across each row suggests a logical series of steps that can be taken to carry out each element. It is not always necessary to complete one element before starting another. In some cases, it may even be necessary to use the outputs from a step in one element to input to a step in a different element.

When reviewing Annex A, many organizations will be able to identify a number of steps that they have already taken, often for reasons other than environmental ones (e.g. cost savings, responding to customer requirements). Demonstrating in this way that the organization has already made progress towards implementing an EMS, helps to build support and commitment to expand the activities which meet all of the requirements of ISO 14001. This review also shows the organization the extent of the task remaining and an indication of the likely effort required to complete the EMS implementation.

Annexes B and C are examples of how an EMS can be implemented in phases.

Annex D shows how a small company could have initiated a project that ended with the commitment of the management to proceed to a full EMS. Tables inserted in the text show the initial steps of addressing some elements of the future EMS. These elements are presented in the same sequence as in Annex A, such that the whole example can be applicable to any of the three phased approaches, described in Annex C. Below the description of how this company started addressing each element, a table shows an approximate evaluation of the degree of progress towards full completion of each element.

3.4 Scope of the EMS

The organization should define the scope of its EMS, i.e. the activities, products and services for inclusion in the EMS. It should decide if the EMS will be applicable to single or multiple locations. It should consider whether there is a reason to limit it to only part of a location or some products or services, e.g. if part of the location is owned and controlled by another organization. Once defined, the full scope of activities, products and services should be covered by the EMS.

3.5 The phased implementation process of an EMS

It may be useful for an organization that is uncertain as to which approach might be best, to undertake a single project, as indicated in Clause 4, as a starting point to understanding and applying a systematic approach to environmental management.

The following two different approaches to the phased implementation of an EMS are suggested in this International Standard:

- a) using fixed steps to follow a progression of elements (see Clauses 5 and 6). This approach can suit organizations, which after carrying out an initial environmental project (see Clause 4), decide to adopt this structured approach to managing their environmental aspects (see example in Annex B);
- b) using a selection of steps that may be implemented consecutively or concurrently to meet the specific requirements of ISO 14001. This selection of steps may be chosen to address specific environmental issues, such as demonstrating legal compliance, meeting the needs of interested parties, such as a customer requirement, or improving environmental performance. This approach may suit organizations that wish to grow at their own pace and within the resources available to them to make their EMS more effective (see example in Annex C).

An implementation plan should be developed that identifies the:

- approach to be adopted;
- timescale in which it should be achieved;
- resources required;
- roles and responsibilities of those implementing the plan;
- records required;
- methods by which progress can be consistently monitored and measured.

Progress can be measured in terms of achievement of the implementation outcomes specified at the end of each phase and compliance with the implementation plan. The phased implementation process also enables the organization to evaluate its progress towards implementing ISO 14001. Measuring progress towards implementing an EMS is useful to ensure the efficient use of resources and achieve the organization's objective.

4 Undertaking an environment-related project to secure management support and commitment to begin the phased implementation of an EMS

4.1 Purpose

Before starting to implement an EMS and in order to secure new, or strengthen existing commitment, an organization may find it helpful to run a limited scope project. This would provide familiarity with the basic constituents of an EMS, experience of some of the benefits of managing environmental aspects in a systematic way and help improve environmental performance.

This may be done by considering a small project focusing on just one or a limited number of environmental aspects of particular and immediate interest to the organization, for example:

- specific waste stream for which disposal is costly or difficult;
- regulatory requirements which have to be addressed;

- high raw material or energy costs which require reduction;
- improvements in pollution control measures which can possibly enhance relations with local communities or customers.

The number of environmental aspects considered and the extent to which they are addressed or resolved may be progressively increased as tangible benefits are secured and additional resources are made available.

4.2 Methodology

4.2.1 General

The steps described in this subclause represent the basic constituents of an EMS. They follow the “Plan-Do-Check-Act” (PDCA) management model:

- P = Plan: identify and select a project and prepare a preliminary environmental action plan;
- D = Do: implement the action plan, including assigning roles and responsibilities;
- C = Check: monitor, measure and evaluate the achievements;
- A = Act: review the process and decide on further action in a management review.

The PDCA model is also used as the basis for a number of other management system standards.

4.2.2 Involvement of top management

It is essential to obtain the involvement, commitment and support of people within the organization who have the authority to ensure that action is taken and who have control over the resources needed to support the successful implementation of the EMS. The term “top management” is often used to describe these people. These people should understand the importance of their commitment and support, which should be additionally communicated to others within the organization.

Top managers should appoint a project leader who acts as a focal point for their environmental project. When implementing an EMS that meets the requirements of ISO 14001, this person is known as the management representative. For the purposes of the guidance given in this International Standard, the term “management representative” is also used to mean “project leader”, depending upon whether it is a matter of implementing a fully ISO 14001-compliant EMS or a smaller scale environmental project.

4.2.3 Identification and selection of a project

In deciding which environmental project(s) might generate environmental improvements and business benefits that would encourage commitment and support, it can be helpful to collect information on a wide range of environmental issues facing the organization. These can include regulatory compliance, environment-related complaints (e.g. smoke, noise, odours), obvious negative impacts on the environment (e.g. air or water pollution), costs associated with energy, waste, water and raw materials use, requests from customers, suggestions from staff or the views of other or interested parties.

The selected project should be of sufficiently limited scope to be manageable with limited resources, but also to be able to produce demonstrable value to the organization within a reasonable period of time, in order to secure support for further environmental projects or the implementation of a full EMS.

Attention should be given to the level of effort required, resources and return on investment, including potential benefits and opportunities. The selected project with its defined scope, expected benefits, necessary budget and potential downsides should be submitted to top management in order to secure its approval.

4.2.4 Planning and implementation of the selected project

Before starting work on the selected project, it is good practice to prepare an action plan. This may be very short, especially for small organizations, but it should at least briefly outline what the project is intended to deliver, why this will be of value to the organization and how it can be achieved. The plan may also include expected costs.

It may start by conducting a review in order to identify and analyse:

- a) the main legal environmental requirements applicable to the organization's activities, products and services included in the scope of the project. Some consideration may also be given to other requirements (e.g. contractual requirements);
- b) the main impact(s) on the environment of its activities, products and services. In doing so, the organization may examine permits issued by authorities and information available from trade associations concerning discharges to air, water, and land, handling and disposal of waste, the use and production of harmful substances, and the consideration of the views of interested parties.

It is not expected that the review be exhaustive, but it should be thorough and focus on key elements in order to provide a reliable assessment of the value that an EMS could add to the organization.

It may be necessary to perform some quantitative evaluation of the environmental aspects and their associated costs, where such information does not already exist (e.g. mass of waste, volumes of liquid effluents, money lost due to potentially recoverable products being discarded or sent for waste disposal, number of complaints, composition of the effluents). These values are called performance indicators; it is practicable to express them per level of activity (e.g. mass of finished product).

NOTE Further explanations of how performance indicators can be used are included in 6.8.

Following the identification of performance indicators, objectives and targets for improvement should be identified, for example the reduction in the use of energy and the decrease of harmful discharges. Objectives and targets should be quantified as much as possible and should be linked to appropriate indicators as described above. A prioritization of objectives and targets is necessary, taking into consideration business operations, available resources, goals of management and other issues concerning the organization.

The associated action plan should eventually define:

- the actions necessary to reach these objectives and targets;
- the corresponding resources (human and financial);
- timescales, in particular a precise time limit should be set for the completion of the project;
- adequate responsibilities for its implementation.

The project action plan should be submitted to top management for approval.

Responsibilities should be assigned to specific persons in the organization and adequate resources provided according to the specifications of the action plan. All the actions included in the plan should be implemented and additional training may be required to effectively achieve some of them.