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Environmental management — Environmental performance evaluation — Guidelines

Management environnemental — Évaluation de la performance environnementale — Lignes directrices

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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The committee responsible for this document is ISO/TC 207, *Environmental management*, Subcommittee SC4, *Environmental performance evaluation*.

This second edition cancels and replaces the first edition (ISO 14031:1999), which has been technically revised.

Introduction

Many organizations seek ways to understand, demonstrate and improve their environmental performance. This can be achieved by effectively managing those elements of their activities, products and services that can significantly impact the environment.

This International Standard sets out a process called environmental performance evaluation (EPE) (see 3.10) which enables organizations to measure, evaluate and communicate their environmental performance using key performance indicators (KPIs), based on reliable and verifiable information.

EPE is equally applicable to small and large enterprises and can be used to support an environmental management system (EMS) (see 3.7), or used independently. An organization with an EMS in place can assess its environmental performance against its environmental policy, objectives, targets and other environmental performance objectives.

Data and information generated by EPE can be used by an organization to implement other environmental management tools and techniques in a coherent, transparent and cost effective way, e.g. other standards developed by ISO/TC 207 such as those relating to environmental management systems (ISO 14001, ISO 14004, ISO 14005, ISO 14006), to environmental declarations (ISO 14025), to environmental labelling (ISO 14024) and to life cycle assessment (ISO 14040, ISO 14044). A full list is given in the Bibliography. This International Standard can also be used independently.

Environmental performance evaluation and environmental audits are complementary tools that can be used to assess environmental performance and identify areas for improvement. The key aspects (and differences) of these tools are the following:

— EPE is an ongoing process of collection and assessment of data and information to provide a current evaluation of performance, as well as performance trends over time;

— environmental audits can be used to gather such data and information, either as part of EPE, or as part of an environmental management system, to verify whether objectives and targets are being met;

— environmental management system audits are conducted periodically to verify conformity with specifications and compliance with legal and other requirements (guidance on auditing an EMS is provided in ISO 19011).

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Environmental management — Environmental performance evaluation — Guidelines

1 Scope

This International Standard gives guidance on the design and use of environmental performance evaluation (EPE) within an organization. It is applicable to all organizations, regardless of type, size, location and complexity.

This International Standard does not establish environmental performance levels.

The guidance in this International Standard can be used to support an organization's own approach to EPE, including its commitments to compliance with legal and other requirements, the prevention of pollution, and continual improvement.

NOTE   This International Standard is a generic standard and does not include guidance on specific methods for valuing or weighting different kinds of impacts in different kinds of sectors, disciplines, etc. Depending on the nature of the organization's activities, it is often necessary to refer to other sources for additional information and guidance on sector-specific topics, different subject matters, or different scientific disciplines.

2 Normative references

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There are no normative references.

3 Terms and definitions

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

3.1
benchmark
reference point against which comparisons can be made

Note 1 to entry: Benchmarking is the process for making a comparison.

[SOURCE: ISO/IEC 29155-1:2011, 2.1, modified]

3.2
combined indicator
indicator which includes information on more than one aspect

Note 1 to entry: A combined indicator may also be referred to as a composite indicator.

3.3
environment
surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation

Note 1 to entry: Surroundings in this context extend from within an organization to the global system.

[SOURCE: ISO 14001:2004, 3.5]

3.4
environmental aspect
element of an organization's activities or products or services that can interact with the environment

Note 1 to entry: A significant environmental aspect has or can have a significant environmental impact.

[SOURCE: ISO 14001:2004, 3.6]

3.5
environmental condition indicators
ECI
environmental performance indicators that provide information about the local, regional, national or global condition of the environment

Note 1 to entry: "Regional" may refer to a state, a province, or a group of states within a country, or it may refer to a group of countries or a continent, depending on the scale of the condition of the environment that the organization chooses to consider.

3.6
environmental impact
any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects

[SOURCE: ISO 14001:2004, 3.7]

3.7
environmental management system
EMS
part of an organization's management system used to develop and implement its environmental policy and manage its environmental aspects

[SOURCE: ISO 14001:2004, 3.8, modified]

3.8
environmental objective
overall environmental goal, consistent with the environmental policy, that an organization sets itself to achieve

[SOURCE: ISO 14001:2004, 3.9]

3.9
environmental performance
measurable results of an organization's management of its environmental aspects

Note 1 to entry: 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.

[SOURCE: ISO 14001:2004, 3.10]

3.10
environmental performance evaluation
EPE
process to facilitate management decisions regarding an organization's environmental performance by selecting indicators, collecting and analysing data, assessing information about environmental performance, reporting and communicating, and periodically reviewing and improving this process

3.11
environmental performance indicator
EPI
indicator that provides information about an organization's environmental performance

3.12
environmental policy
overall intentions and direction of an organization related to its environmental performance as formally expressed by top management

[SOURCE: ISO 14001:2004, 3.11, modified]

3.13
environmental target
detailed performance requirement, applicable to the organization or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives

[SOURCE: ISO 14001:2004, 3.12]

3.14
function
combination of processes, products or services that achieve a specific, predetermined end, usually on a repetitive basis

3.15
indicator
measurable representation of the condition or status of operations, management, or conditions

3.16
interested party
individual or group concerned with or affected by the environmental performance of an organization

[SOURCE: ISO 14001:2004, 3.13]

3.17
key performance indicator
KPI
indicator of performance deemed by an organization to be significant and giving prominence and attention to certain aspects

3.18
management performance indicator
MPI
environmental performance indicator that provides information about the management activities to influence an organization's environmental performance

3.19
operational performance indicator
OPI
environmental performance indicator that provides information about the environmental performance of an organization's operational process

3.20
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 1 to entry: For organizations with more than one operating unit, a single operating unit may be defined as an organization.

[SOURCE: ISO 14001:2004, 3.16]

4   Environmental performance evaluation

4.1   General overview

4.1.1   EPE process

Environmental performance evaluation (EPE) is a management process that uses key performance indicators to compare an organization's past and present environmental performance with its

environmental objectives and targets. The information generated by EPE can help an organization to do the following:

— identify its environmental aspects and determine which aspects it will treat as significant;

— set objectives and targets for improving environmental performance and assess performance against these objectives and targets;

— identify opportunities for better management of its environmental aspects;

— identify trends in its environmental performance;

— review and improve efficiency and effectiveness;

— identify strategic opportunities;

— evaluate compliance or risk of non compliance with legal requirements and other requirements to which the organization subscribes related to its environmental aspects;

— report and communicate environmental performance internally and externally.

Management commitment to EPE is essential and it should be part of the regular business functions and activities of an organization. EPE should be appropriate to the size, location, and type of organization and its needs and priorities.

Internally, EPE can help the organization to achieve its environmental performance objectives and targets and also to enlist the involvement of an EMS. EPE can also be used to report and communicate information on the organization's environmental performance to external interested parties to demonstrate its commitment to improvement.

EPE, as detailed in this International Standard, follows a "Plan-Do-Check-Act" (PDCA) management model. The steps of this on-going process are as follows.

a) **Plan**

Preparing to implement performance evaluation:

— planning EPE;

— selecting indicators for EPE (the process of selecting indicators for objectives and targets may include both choosing from existing indicators and developing new indicators).

b) **Do**

Managing data and information, which includes:

— collecting data relevant to the selected indicators (for guidance on data collection, see ISO/TS 14033);

— analysing and converting data into information describing the organization's environmental performance;

— assessing information describing the organization's environmental performance in comparison with the organization's environmental performance objectives;

— reporting and communicating information describing the organization's environmental performance.

c) **Check and Act**

Reviewing and improving EPE.

4.1.2 Indicators for EPE

4.1.2.1 General

This International Standard describes two categories of indicators for EPE.

Environmental condition indicators (ECIs) provide information about the condition of the environment which could be impacted by the organization. This information can help an organization to better understand the actual impact or potential impact of its environmental aspects (e.g. process emissions). ECIs are often difficult to link directly to one organization's operations unless they are the only source emitting a particular pollutant. Care should be taken to account for any other sources or factors that might have similar impacts on the environment. ECIs can be used (e.g. by regulators or other local government agencies) to calculate condition baselines, monitor trends, establish permit limits for pollutants, and create incentives.

Environmental performance indicators (EPIs) provide information related to the organization's management of its significant environmental aspects, and demonstrate the results of its environmental management programmes. These may be KPIs that an organization chooses to use for general business purposes:

— management performance indicators (MPIs) provide information about management efforts to influence the environmental performance of the organization's management;

— operational performance indicators (OPIs) provide information about the environmental performance of the organization's operations.

Figure 1 illustrates the interrelationships among an organization's management, operations, and the condition of the environment, noting the type of indicator in brackets for EPE related to each of these elements.

Key

⟶ information flows

- - -⟶ input and output flows related to the organization's operations
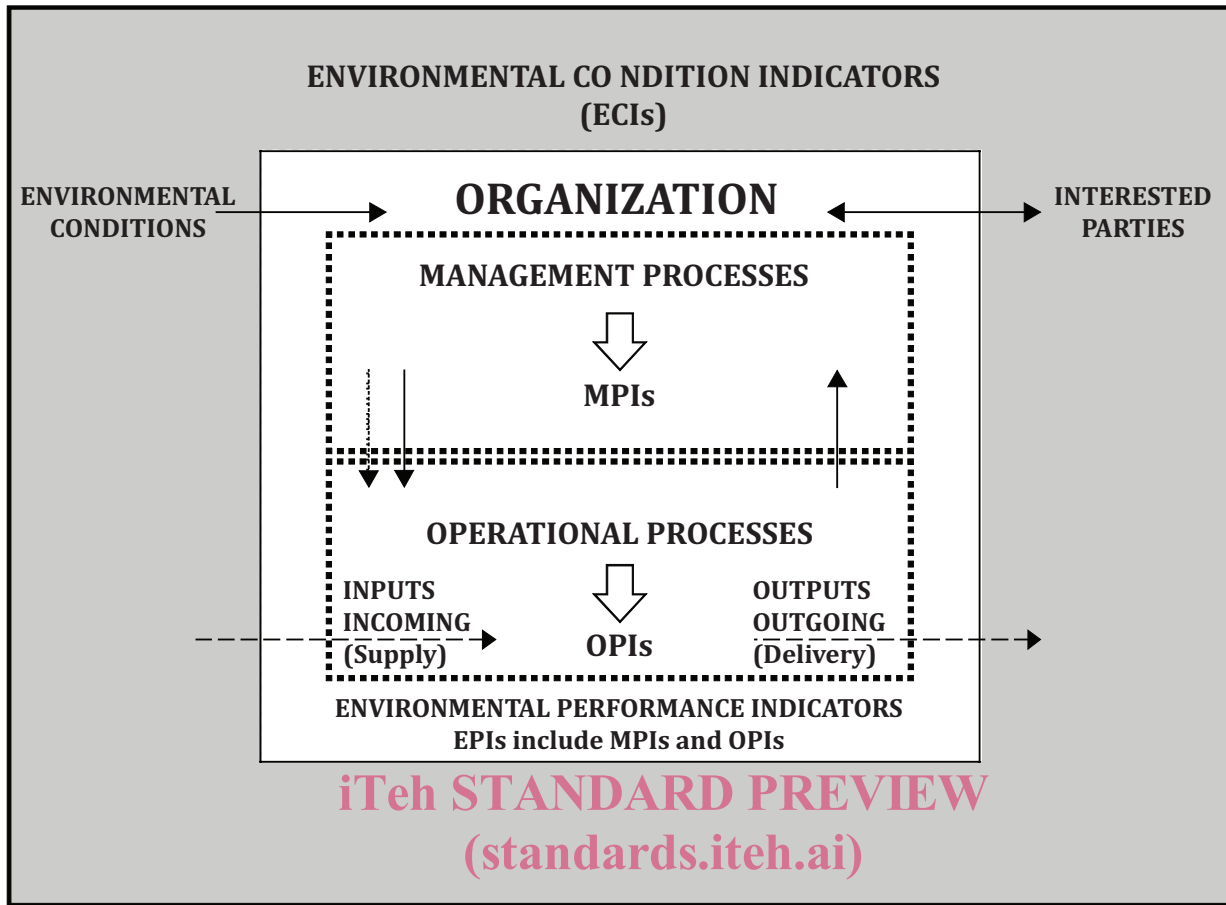
·······⟶ decision flows

Figure 1 — Understanding the organization and its context

4.1.2.2   Relating EPE indicators to environmental, social and economic aspects of sustainability

EPIs and ECIs can be used to demonstrate how an organization addresses the three pillars of sustainability (social, economic and environmental) through the management of its significant environmental aspects.

MPIs can show improvements in the social dimension (e.g. indicators that show how training is being done or will be done so as to improve certain environmental aspects) or in the economic dimension (e.g. investments on new technologies so as to address environmental aspects and cost savings due to improved environmental performance).

OPIs can be linked to the context of the environment (e.g. emission reductions, reduction in the use of energy and water resources).

ECIs might not be linked directly with the organization's processes, but in certain instances can be linked to the success of its environmental management, which itself can reflect on all three dimensions of sustainability, e.g.

— improved quality of water resources (environmental);

— improved quality of life - more people having access to drinking water (social);

— reduced costs for obtaining drinking water (economic).

The decisions and actions of an organization's management are closely related to the performance of its operations. Figure 2 provides an outline of EPE, with references to the numbers and titles of relevant clauses in this International Standard. Annex A provides supplemental guidance to support EPE.
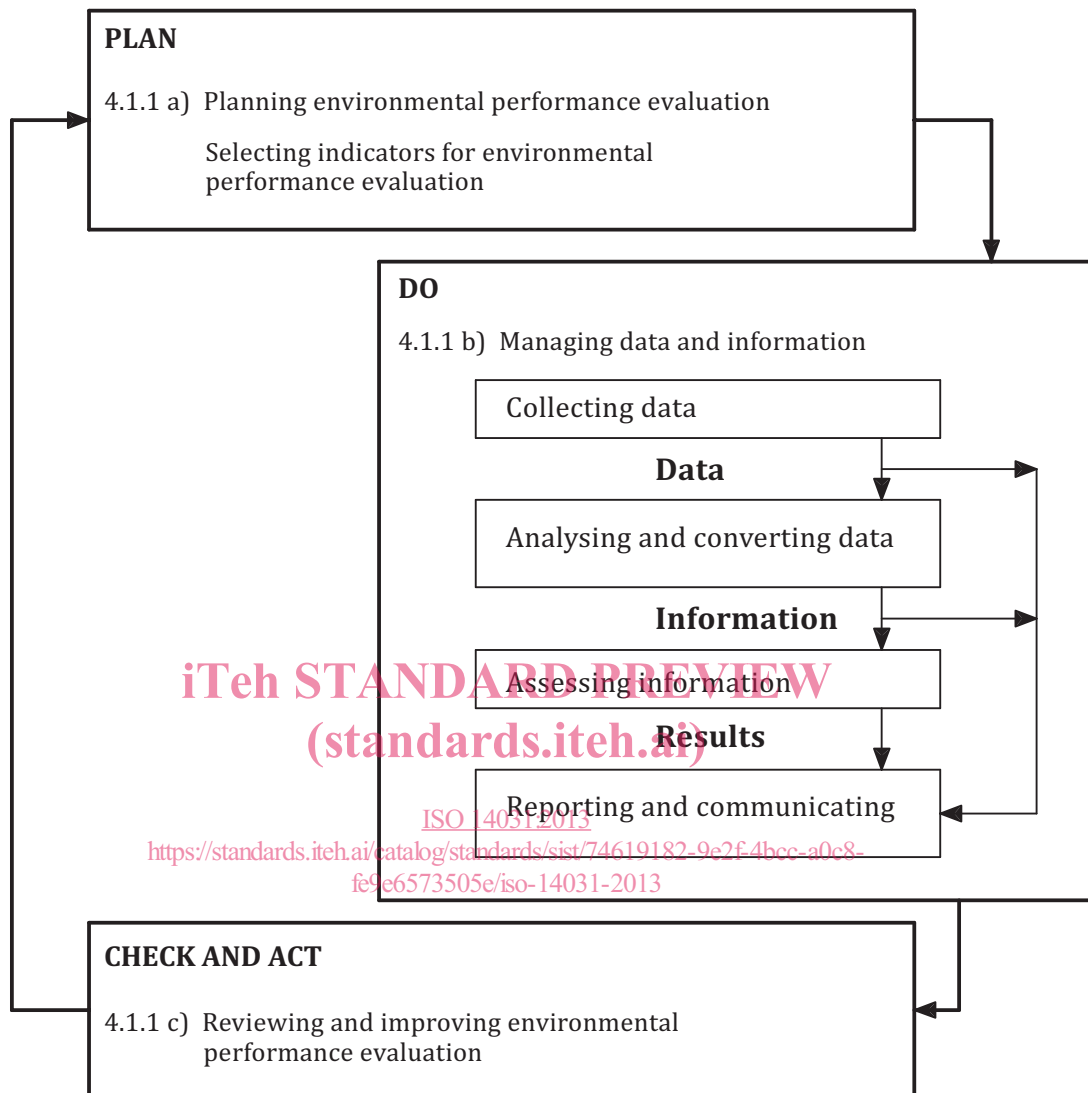
NOTE   References in this figure are to subclause 4.1.1. Annex A provides supplemental guidance.

Figure 2 — Outline of EPE (following PDCA model)

4.1.3   EPE principles

EPE principles for performance information include the following:

— relevance: performance information should be relevant to the organization's efforts to manage its environmental aspects;

— completeness: performance information should be complete to ensure that all factors will be addressed;

— consistency and accuracy: performance information should be consistent and accurate to allow valid comparisons of past, present and future performance;

— transparency: performance information should be clear and transparent, so that the intended users have access and understanding of performance data to make decisions with reasonable confidence.