

Environmental management:



Weighing up Environmental Performance Evaluation (EPE) ⁽¹⁾



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Why is EPE needed?

Throughout this last decade of the 20th century, the worldwide business community has seen:

- An increasing need for industry and commerce to address environmental aspects and to meet the increasing expectations of stakeholders for improved environmental performance;
- The evolution of governmental environmental regulation and legislation and the relationship of voluntary standards to these government instruments; and

- The emergence of new environmental management tools to identify and address the environmental aspects of an organization's activities, products and services.

Just as the management of quality, health and safety is established as essential to effective business practice, so, too, is the management of environmental issues. Increasing concern about environmental issues has significantly affected global industrial practices in recent years as organizations strive to be responsive to government regulations, shareholder concerns and stakeholder expectations all at the same time.

Many organizations have therefore been seeking ways to understand, demonstrate and improve their environmental perform-

ance, which can be achieved by better managing the elements of their activities, products and services that can significantly impact the environment. ISO 14001:1996, *Environmental management systems – Specification with guidance for use*, specifies that those utilizing ISO 14001 must evaluate and improve the performance of their environmental management systems. Thus, a tool to help organizations measure and evaluate their environmental performance is considered necessary. And this has led to the work ISO/TC 207/SC 4 in the area of environmental performance evaluation (EPE).

EPE assists an organization to:

- determine any necessary actions to achieve its environmental goals, targets and objectives;
- identify significant environmental aspects;

“Environmental Performance Evaluation (EPE) is an internal management process that provides information to facilitate management decisions regarding an organization’s environmental performance.”

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Dorothy P Bowers, Vice President of Environmental and Safety Policy for Merck & Company, Inc., has over 30 years of experience in environmental programme management in a wide variety of industries (including pharmaceutical, chemical, paint and ink, pulp and paper, trout and oyster farming). Dorothy Bowers has a broad technical and regulatory background and has been active in almost every major regulatory area in the USA as a proponent of more flexible regulatory systems such as emissions trading and alternative paths (EPA's Project XL, P4 Project).

Steven P. Cornish, Program Manager of International Policy for the American National Standards Institute, has been with ANSI for over 10 years, working with a wide variety of industries and subjects, including image technology, medical technology, safety and health, healthcare informatics and environmental management. He has served as Secretary of ISO/TC 207/SC 4 since its formation in 1993. In addition, Steven Cornish provides support for the development of ANSI positions on the business of the ISO Technical Management Board and the ISO Council and supports ANSI representatives to these groups.

- identify opportunities for better management of its environmental aspects (e.g., prevention of pollution);
- identify trends in its environmental performance;
- increase the organization's efficiency and effectiveness;
- identify strategic opportunities.

While the international spotlight to date has been focused mostly on the initial development and the more recent compatibility concerns of the ISO/TC 207 environmental management systems and environmental auditing standards, ISO/TC 207/SC 4 has marched quietly onwards, developing international guidance on EPE. It is important to note that, at the start of our efforts, there were no national, regional or international standards providing general guidance on EPE (while there were for the other ISO/TC 207 fields of environmental management systems, environmental auditing, eco-labelling, and life cycle assessment). We were truly breaking new ground. In the end, we believe we have been successful in achieving international understanding and consensus on the concepts, components of EPE, and guidance on the implementation of EPE. ISO 14031, *Environmental management – Environmental performance evaluation – Guidelines* that has just appeared is a witness to this.

What is ISO 14031 all about?

The scope statement in ISO 14031 is as follows:

This International Standard gives guidance on the design and use of environmental performance evaluation within an organization. All organizations, regardless of type, size, location and complexity, can use this International Standard.

This International Standard does not establish environmental performance levels. It is not intended for use as a specification standard for certification/registration purposes or for the establishment of any other environmental management system conformance requirements.

ISO/TC 207/SC 4 decided early in the development of ISO 14031 that the standard should be broadly applicable to all organizations wishing to evaluate their environmental performance, whether or not they have established environmental management systems.

In addition, ISO 14031 is written to be applicable to any environmental management system, including those that are not based on ISO 14001. It is important to note that ISO 14031 was written to support Section 4.4.1 of ISO 14001, which calls for an organization to record information to track its environmental performance. However, ISO 14001 does not require that ISO 14031 be used to accomplish this, and there may be other means of doing so.

Indicators that support EPE

ISO 14031 describes two general categories of indicators to support the implementation of EPE:

- environmental performance indicators (EPIs); and
- environmental condition indicators (ECIs).

Management performance indicators (MPIs) are a type of EPI, and they provide

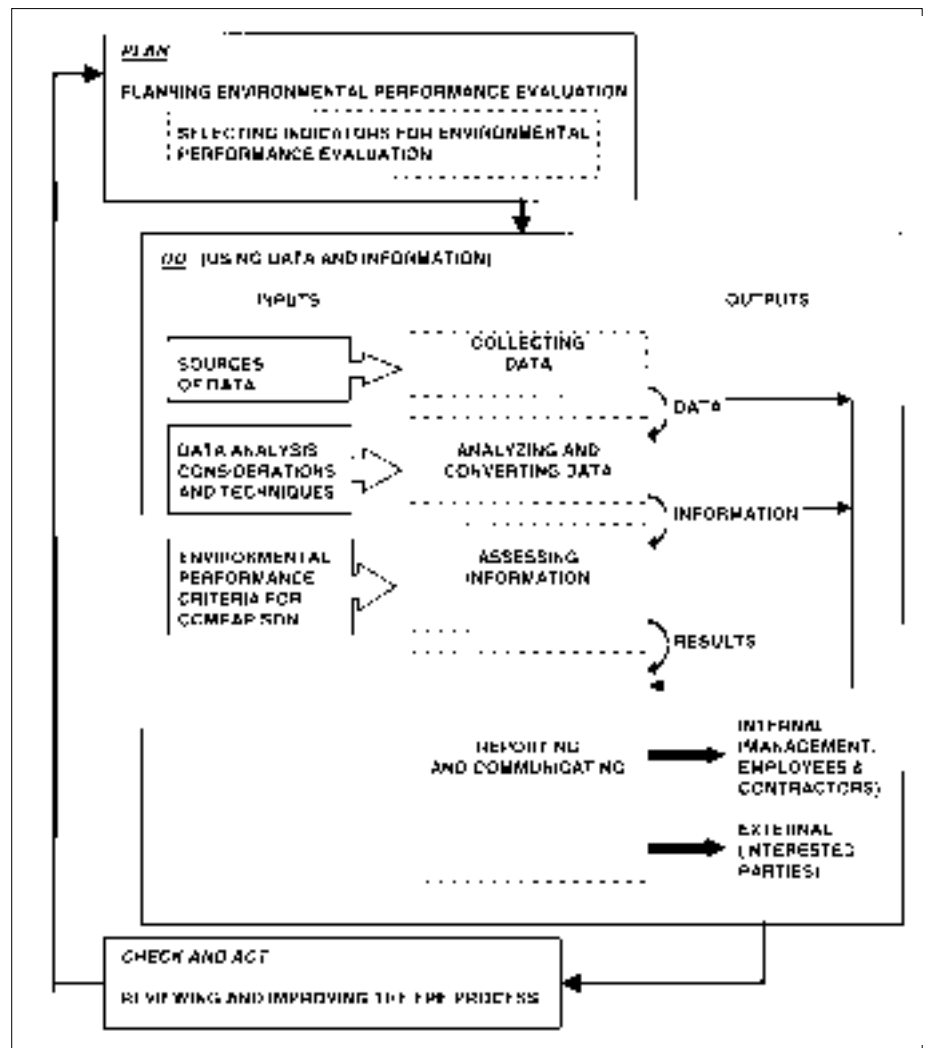


Figure 1 – The EPE Process described in ISO 14031. ISO 14031 describes two general categories of indicators to support the implementation of EPE: 1) Environmental performance indicators (EPIs); and 2) Environmental condition indicators (ECIs).

information to support the evaluation of management efforts to influence the environmental performance of the organization's operations. MPIs relate to the policy, people, planning activities, practices, procedures, decisions and actions at all levels of the organization.

Operational performance indicators (OPIs) are a type of EPI, and they provide management with information on the environmental performance of the organization's operations. OPIs relate to:

- inputs: materials (e.g., processed, recycled, reused, or raw materials; natural resources), energy and services;
- the supply of inputs to the organization's operations;
- the design, installation, operation (including emergency events and non-routine operation), and maintenance of the physical facilities and equipment of the organization.
- outputs: products (e.g., main products, by-products, recycled and reused materials), services, wastes, (e.g., solid, liquid, hazardous, non-hazardous, recyclable, reusable), and emissions (e.g., emissions to air, effluents to water or land, noise, vibration, heat, radiation, light) resulting from the organization's operations;
- the delivery of outputs resulting from the organization's operations.

EClis provide information about the local, regional, national or global condition of the environment. This information may help an organization to better understand the actual impact or potential impact of its environmental aspects, and thus assist in the planning and implementation of EPE.

ISO 14031 also includes supplemental guidance on:

- guidance on identifying the views of interested parties in the context of EPE;
- considerations the organization should take into account when selecting indicators for EPE;
- examples of approaches for selecting indicators for EPE; and
- examples of indicators for EPE.

ISO/TR 14032 provides real-life examples

Because EPE is likely to be a relatively new discipline for many organizations and the guidance provided in ISO 14031 is certainly new and has not yet been widely tested, ISO/

Organizations figuring in ISO/TR 14032 with examples

Organization	Description of Business	Country	Number Employees	Existence of Certified EMS
Schreinerei Schmid	Cabinetry/furniture making shop	Germany	11	Certified (EMAS)
Clemens Harle	Brewery	Germany	33	
Frederiksborg Linnedservice A/S	Industrial laundry	Denmark	70	Certified (ISO 14001)
Perusahaan Pelindung Getah	Natural rubber medical glove manufacturer	Malaysia	100	
Katayama Shokuhin	Food processing company (Pickles)	Japan	200	
Envases Alvher	Flexible laminated packaging manufacturer	Argentina	210	
Petroquímica Cuyo S.A.I.C.	Chemical processing company	Argentina	230	Certified (ISO 14001)
Immenstadt Clinic	180 bed hospital	Germany	260	
YPF Lujan de Cuyo Refinery	Petroleum refinery operation	Argentina	570	Certified (ISO 14001)
Hipp Company	Food processing company (Baby food)	Germany	750	Certified (EMAS and ISO 14001)
Spolek	Chemical company	Czech Republic	2 000	Certified (ISO 14001)
Danish National Railway Agency	National railway infrastructure management company	Denmark	3 400	
Elkem Fiskaa	Silicon metal production facility	Norway	5 300	
Electrolux AB	Household and commercial appliances manufacturer	Multi-national based in Sweden	112 300 worldwide	Individual sites may be certified to EMAS or ISO 14001
ICI	Chemical company	Multi-national based in the UK	67 500 worldwide	11 ICI sites are certified to EMAS and ISO 14001
City of Seattle, Washington, USA	Local government	USA	10 000	
Silicon Valley Environmental Partnership	A non-profit, non-governmental organization using environmental indicators to track regional environmental conditions	USA	Not applicable	

TC 207/SC 4 approved a new work item: to develop an ISO Technical Report as a companion document to ISO 14031 with the understanding that many organizations would benefit from examples illustrating how environmental performance evaluation (EPE) has been applied by a variety of organizations. This new ISO Technical Report provides real-life examples for the consideration of organizations undertaking EPE, and its designation and title are ISO/TR 14032, *Environmental management – Examples of Environmental performance evaluation*.

When soliciting real-life examples, we received over 30 submittals for consideration, written by organizations or individuals and submitted to ISO/TC 207/SC 4 through their ISO members. The large number was certainly surprising and almost all of the examples were very good. ISO/TC 207/SC 4 selected 17 of these examples for inclusion in ISO/TR 14032, which were then edited for consistent presentation and to reflect the structure of the EPE process described in ISO 14031.

The examples of EPE represent a range of applications from simple to elaborate, and they aim to encourage and assist organizations, particularly small and medium-sized enterprises, interested in implementing EPE. The subcommittee also worked to ensure that the examples represent a range of organizations (e.g., manufacturing and service companies; non-governmental organizations; government agencies; small, medium and large enterprises; organizations with and without certified environmental management systems) and geographic locations. On page 9, we show something of the great diversity among the real organizations whose examples are included in ISO/TR 14032.

Address questions to the ISO member body in your country

At its June 1999 meeting in Seoul, Republic of Korea, ISO/TC 207/SC 4 took the actions regarding future initiatives noted below.

It agreed that it would not form a formal interpretations mechanism for ISO 14031, and that parties with questions on the content of ISO 14031 should be directed to their ISO member body for response in a timely manner. Responses of ISO member bodies shall indicate that they are not official ISO/TC 207/SC 4 interpretations of ISO 14031. It was noted that ISO member bodies may establish their own national interpretation mechanisms for ISO 14031 if they so wish. It was further agreed that if the ISO/TC secre-

tary receives any such questions directly, he will refer them to the ISO member body in the country from which the question is submitted. ISO member bodies were also encouraged to provide copies of all questions and the answers given to them to the ISO/TC 207/SC 4 secretariat who will collect and present them on the ISO/TC 207/SC 4 website.

ISO/TC 207/SC 4 agreed to the formation of an ad hoc editing group to edit additional examples of EPE and the use of ISO 14031. Additional examples will be solicited in order to gain more information on the use of EPE and the implementation of the guidance in ISO 14031 for consideration in the future revision of the standard. All new examples should be submitted to the ISO/TC 207/SC 4 Secretary by an ISO member that is a member of the subcommittee.

A section of ISO/TC 207/SC 4 website will be established to provide public access to the collected examples to foster greater understanding and implementation of EPE and ISO 14031.

Actions to make ISO 14031 known and used

ISO/TC 207/SC 4 agrees to the formation of an ad hoc group dedicated to assisting the subcommittee Chair and Secretary in promoting ISO 14031 and conducting ongoing outreach. Some of the specific activities of this ad hoc group will include:

- Development of tools, as needed, to assist member bodies in promoting the implementation of ISO 14031;
- Development of a structure for workshops on ISO 14031 tailored for an audience of business managers and other interested parties that can be presented in any country or region;

“...Copies of all questions and the answers [provided will be forwarded] to the ISO/TC 207/SC 4 secretariat who will collect and present them on the ISO/TC 207/SC 4 website.”

- Development of a set of presentation materials on ISO 14031 and the work of ISO/TC 207/SC 4; and
- Organization of an EPE workshop, according to the agreed structure, to be held in conjunction with the June 2000 ISO/TC 207 meetings in Stockholm (Sweden).

The recommendation was accepted that ISO/TC 207 should organize a roundtable summit session on environmental management at the June 2000 ISO/TC 207 meetings in Stockholm. The intent of this roundtable session is to bring together those organizations engaged in international environmental management and environmental performance initiatives as equal parties to establish a dialogue among them and to foster a better common understanding of efforts. Our subcommittee has long recognized that regional, national and global indicators related to environmental performance or sustainable development are being developed by other government agencies, non-governmental organizations, and scientific and research institutions (such as the United Nations Commission on Sustainable Development and the Organization for Economic Cooperation and Development). For this reason, text has been provided in ISO 14031 encouraging organizations selecting indicators for EPE to consider indicators developed by such entities and compatibility between the guidance in ISO 14031 and the guidance from those entities. ISO/TC 207/SC 4 felt such a roundtable session would be helpful not just in the area of EPE and indicators, but for the overall field of environmental management.

The ISO/TC 207/SC 4 Chair and Secretary would like to extend their greatest appreciation to our working group convenors and secretaries (Ross Stevens of the USA, Kjell Stenstadvold, Per Arne Syrrist and Einar Bache all of Norway, and Kristian Loekegaard of Denmark), to our ISO member body delegates and experts, and to all of the host countries for our meetings. Without your hard work, technical expertise, generosity, goodwill and genuine friendship over the past six years, ISO/TC 207/SC 4 would not have realized the successful and rewarding completion of ISO 14031 and ISO TR 14032. □