

## Environmental Management System Resources Guide

An environmental management system (EMS) provides a framework for organizations or businesses that are interested in continually improving environmental performance. Through this framework, environmental stewardship becomes the responsibility of all employees—not just the environmental department—and is integrated into everyday business operations. EMS offers organizations a method and opportunity to systematically establish and achieve pollution prevention objectives for superior environmental performance.

An effective EMS makes good business sense. It is ultimately less expensive to prevent pollution than to manage waste caused by pollution later on. Some manufacturers are now requiring their suppliers to have an EMS because it indicates a higher level of environmental commitment, which in turn ties into product quality and future liability concerns. Benefits of an EMS include:

- Increased competitive advantage in the marketplace
- Reduced liability
- Improved environmental performance
- Improved public image
- Reduced production costs
- Organized and accessible environmental records

An effective EMS creates a balance between providing structure for tracking environmental information and serving as a forum for bringing new ideas and improvements forward. To be effective, an EMS also needs to go beyond simply meeting environmental compliance and regulatory requirements. An enhanced EMS includes objectives for reducing waste and considering environmental attributes in the design of products.

Depending upon the size and culture of your facility, establishing an EMS—or enhancing an EMS that is currently in place—may require a variety of resources. You may already have some of the framework for an EMS in place in your facility, especially if you are using a quality management system. The work that goes into establishing a quality management system such as ISO 9000 puts the addition of an *environmental* management system like ISO 14001 easily within reach.

The purpose of this guide is to provide sources for information about what an environmental management is, how to implement an EMS, and list resources for EMS implementation and enhancement.



“One of the most significant benefits of becoming ISO 14001-certified is organization. Because of this system, our environmental records and documentation are readily accessible and in order for reporting and regulatory inspections.”

*Marc Daniels, Environmental Control Engineer, St. Paul Ford Motor Plant*

**What is the relationship between EMS, ISO 9000, and ISO 14001?**

ISO 9000 and ISO 14001 are series of international standards developed by the International Organization for Standardization (ISO) to ensure consistent management systems in organizations.

ISO 9000 is a quality management system that was established in 1987. ISO 14001, an environmental management system, was developed more recently. At this time, many more organizations have ISO 9000 certification than ISO 14001. Even though the emphasis of the two management systems is different, once an organization has ISO 9000 certification in place, it is relatively easy to expand the system to become ISO 14001-certified as well. Continual improvement and external auditing are required for remaining certified under the ISO 14001 program.

An organization can have an EMS program without taking the formal steps to become ISO 14001-certified. One option is to build an EMS program so that it is "ISO14001-ready." This is accomplished by structuring an EMS within the ISO 14001 framework without taking the steps to become accredited. These options need to be thoroughly considered before structuring your EMS program. There is no right or wrong option for EMS—the goal is to establish the framework that best fits your facility.

Some large manufacturers are requiring suppliers to have ISO 14001 certification in place. In these instances, EMS status has a direct effect on market share.

**Enhancing an EMS**

An environmental management system that goes beyond mere compliance with regulations can lead to superior environmental performance. But how does an EMS go beyond meeting regulatory requirements? An EMS is enhanced by building pollution prevention and design for the environment (DfE) activities into the system plan. The benefits to the organization include cost savings, reduced liability, and improved employee morale.

**Incorporating pollution prevention activities**

The Minnesota Toxic Pollution Prevention Act defines pollution prevention as: "...eliminating or reducing at the source the use, generation, or release of toxic pollutants... Methods of reducing pollution include, but are not limited to, process modification, inventory control measures, feedstock substitutions, various housekeeping and management practices, and improved efficiency of machinery."

As part of the EMS development process, members of the organization identify "objectives and targets." This is the "action" section of the EMS that lists specific activities that will lead to the accomplishment of the goals. "Reduce energy use" is an example of an objective that has a pollution prevention orientation. The corresponding target would be "reduce electricity use by 8 percent in 2001" and "reduce natural gas use by 11 percent in 2002." Another example of an objective could be "reduce hazardous materials use," with a corresponding target of "reduce the use of high VOC paints by 50 percent in 2002."

**Success Story:****Federal Foam Technologies**

Upper management support for an EMS was in place when Federal Foam Technologies (New Richmond, Wis.) successfully achieved ISO 14001 certification. One of the areas Federal Foam began to analyze was the amount of waste they were sending to the landfill—essentially foam bought and processed, but not used. The numbers showed them that if they could reduce their landfill costs by 40 percent they could save \$15,000 annually. In order to see a similar effect on the balance sheet from sales alone, Federal Foam would have to create an additional \$60,000 in sales. Suddenly, reducing waste became one of their best options for cutting costs—and increasing profits.

We asked, "What level of impact do we have on our natural resources?"...

It became clear that there were some significant and immediate cost reduction benefits in this area. We also realized that we could achieve greater results in this area with a more formalized and structured way of managing these issues. That is when we began to develop our EMS.

*Wyman D. Smith, President, Federal Foam Technologies*

## **Incorporating Design for the Environment activities**

Another method of enhancing an EMS is to include Design for the Environment (DfE) elements in the management system. DfE is a systematic way of incorporating environmental attributes into the design of a product. For example, when DfE is used during product design, the design team considers all of the environmental impacts that product will have throughout its lifecycle. As a result of using DfE, an electronic product, for instance, may be designed to be easily disassembled without tools by using “snaps” to hold components in place. This means the product can be easily disassembled for repair, reuse and recycling. (For more information, refer to the DfE Toolkit, online at [www.moea.state.mn.us/berc/DFEtoolkit.cfm](http://www.moea.state.mn.us/berc/DFEtoolkit.cfm).)

Design for the Environment activities should also be built into the objectives and targets section of an EMS plan. An example of an objective with a DfE focus would be “to reduce waste generation”. The corresponding target would be to “design products that are easy to disassembly.”

## **Resources**

### **Implementing an EMS**

There is a wide variety of EMS and ISO 14001 implementation case studies and support information on the Internet. Here’s a partial list of these online resources.

- ▶ The U.S. EPA’s “Environmental Management Systems: An Implementation Guide for Small and Medium Sized Organizations” can be found at [www.epa.gov/OWM/wm046200.htm](http://www.epa.gov/OWM/wm046200.htm). The guide explains how you can develop and implement an effective EMS and how it can support your organization’s missions and goals. The guide is primarily for use by EMS implementers—the people who will lead the EMS development effort. The guide uses ISO 14001 as a model for an EMS.
- ▶ The Ford Motor Company has made its ISO 14001 implementation manual available on the Kentucky Pollution Prevention Center web site: [www.kppc.org/ems/emspubs.cfm](http://www.kppc.org/ems/emspubs.cfm).
- ▶ The International Organization for Standardization (ISO): [www.iso.ch](http://www.iso.ch).
- ▶ Purchase ISO standards from the American National Standards Institute: [www.ansi.org](http://www.ansi.org).

### **Enhancing an EMS**

These Internet resources can assist with preventing waste and pollution by integrating pollution prevention and Design for the Environment (DfE) into an EMS.

- ▶ “Improving Environmental Performance and Compliance” is a guidance document for moving environmental management systems beyond regulatory compliance. Written by the Commission for Environmental Cooperation, it’s online at [www.cec.org](http://www.cec.org).
- ▶ “A Design for the Environment Approach” guide book created by the U.S. EPA Office of Pollution Prevention and Toxics is a comprehensive manual that assists users with developing an effective EMS based on a DfE approach: [www.kppc.org/ems/emspubs.cfm](http://www.kppc.org/ems/emspubs.cfm).

### **General EMS Information**

There are many sources of information about EMS on the Web. The information varies from case studies to printed information and lists of accredited companies. The following sites are some of the most comprehensive:

- ▶ [www.epa.gov/ems/](http://www.epa.gov/ems/) — This web page contains links to key information about EPA’s efforts to develop policies and related materials about environmental management systems (EMS).
- ▶ [www.dep.state.pa.us/dep/deputate/pollprev/Iso14001/iso14000.htm](http://www.dep.state.pa.us/dep/deputate/pollprev/Iso14001/iso14000.htm) — The Pennsylvania Department of Environmental Policy provides links to various EMS/ISO 14001 resources and publications.

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- ▶ [www.epa.gov/performance-track/](http://www.epa.gov/performance-track/) has the latest information on U.S. EPA's incentives for companies with environmental management systems.
- ▶ The ISO Registrar Accreditation Board (RAB) web site lists certified Environmental Management Systems Auditors, listed by state: [www.rabnet.com/qa\\_dir.htm](http://www.rabnet.com/qa_dir.htm).

**More information**

For additional information and resources on environmental management systems, contact Fran Kurk at the Minnesota Office of Environmental Assistance at (651) 215-0242.

