Review Article

ISO 14001: A Brief review

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Abstract

Protecting our environment and preventing our companies from having a negative impact on the environment are two of the most important challenges that companies face today. One of the greatest benefits of implementing an environmental management system is the recognition that comes with being one of those companies that cares enough about reducing its environmental footprint. This can give your business better relationships with customers, the public, and the wider community. ISO 14001 is an international standard for the design and implementation of an environmental management system (EMS). The ISO 14001 requirements provide a framework and guidelines for creating your environmental management system so that you do not miss any important elements that are required for an EMS to be successful. There is an ISO 14001 cycle, but the last one was published in 2015 and was called "ISO: 2015".ISO 14001 is divided into ten sections: scope, normative references, terms and definitions, organizational context, Leadership, planning, support, operation, performance, evaluation. The ISO 1400 series contains many standards, but the most popular of the ISO 14000 series is ISO 14001: Environmental management system specification with instructions for use.

Introduction

The ISO 14000 series of global standards was introduced by the ISO (International Organization for Standardization, an international organization that creates and disseminates globally accepted standards) in 1996 for the design and implementation of an environmental management system (EMS).

An Environmental Management System (EMS) requires that a company discover general environmental goals and targets and develop an environmental policy. It additionally desires to set up management and operational control, tracking and dimension approaches and programmes for its environmental influences. Meanwhile, employee training programmes are also vital to make certain that personnel are aware of any established environmental policy and objectives.

ISO 14001 developed by the International Organization for Standardization (ISO) is an environmental management system (EMS). Most countries approved the standard prior to its publication and update and as such has become an internationally recognized standard. In 1999, after three years the ISO 14001 certification was about 10,000 worldwide. Also 46,000 and 88,000 certifications in 2002 and 2005 around the world, a 100% growth in almost 3 years. The maximum number of certifications occurred from the developed countries. The number of certifications increased at a pace of 100% per year in the emerging nations.

ISO 14001 Cycle

The latest version of the requirements for the environmental management system was published in 2015 and is known as "ISO 14001: 2015".There are also older versions that have now been retired. They are:

Table 1: ISO 14001 cycle

ISO 14001:1996	Environmental management systems — Specification with guidance for use
ISO 14001:2004	Environmental management systems — Requirements with guidance for use
ISO 14001:2004/COR 1:2009	Environmental management systems — Requirements with guidance for use — Technical Corrigendum 1
ISO 14001:2015	Environmental management systems — Requirements with guidance for use

Environmental management system

An environmental management system, often referred to as EMS, consists of policies, processes, plans, practices, and records that define the rules for how your company treats the environment. This system must be tailored to your specific business, because only your business has the exact legal requirements and environmental interactions that correspond to your specific business processes. However, the requirements of ISO 14001 provide a framework and guidelines for creating your environmental management system so that you do not miss important elements for the success of an EMS.

Results and Discussion

The ISO 14000 series and how ISO 14001 differs from the others

The ISO 14000 series contains many standards, but the most popular of the ISO 14000 series is ISO 14001: Environmental management system specification with instructions for use.

Table 2: The full ISO 14000 series

ISO 14000	EMS- General Guidelines on Principles, Systems and Supporting Techniques
ISO 14001	EMS- Specification with Guidance for Use
ISO 14004	EMS - General Guidelines on Systems, Principles and Supporting Techniques
ISO 14010	EA- General Principles of Environmental Auditing
ISO 14011	EA- Auditing of Environmental Management Systems
ISO 14012	EA- Qualification Criteria for Environmental Auditors
ISO 14013	Management of Environmental Audit Programs
ISO 14014	Initial Reviews
ISO 14015	Environmental Site Assessments
ISO 14020	EL- Basic Principles of Environmental Labeling
ISO 14021	EL- Self Declaration- Environmental Claims- Terms and Definitions
ISO 14022	EL- Symbols
ISO 14023	EL- Testing and Verification Methodologies
ISO 14024	EL- Practitioner Programs- Guiding principles, practices and certification procedures of multiple criteria (type1)
ISO 14031	Environmental Performance Evaluation
ISO 14040	LCA- General Principles and Practices
ISO 14041	LCA- Goal and Definition/Scope and Inventory Assessment
ISO 14042	LCA- Impact Assessment
ISO 14043	LCA- Improvement Assessment
ISO 14050	Terms and Definitions
ISO 14060	Guide for the Inclusion of Environmental Aspects in Product Standards

Sections/Clauses of ISO 14001

The structure of ISO 14001 is divided into ten sections. The first three are introductory, the last seven contain the requirements for the environmental management system.

Table 3: Sections in ISO 14001

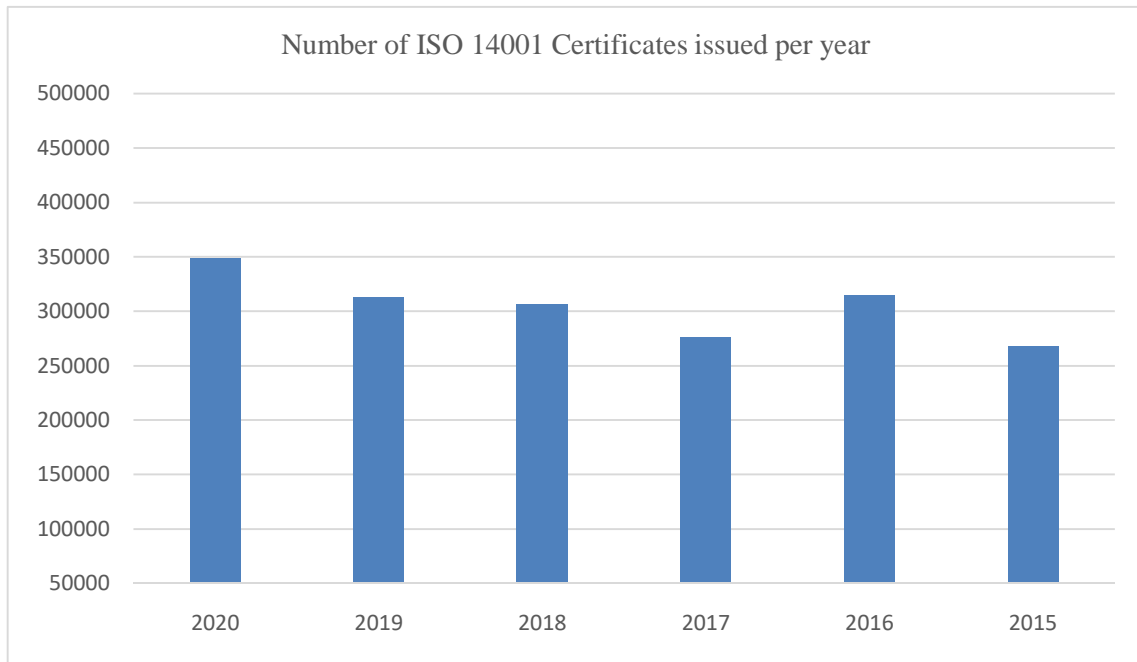| Sections	About
Scope	Describes the scope of EMS. It must be in line with the organization's environmental policy. Expected results should aim to improve your environmental performance and meet compliance obligations.
Normative References	There are no normative references in ISO 14001: 2015. This clause has been added to keep the numbering identical to previous editions.
Terms & Definitions	This section explains all relevant terms and definitions, which are divided into four categories: Organization& leadership Planning Support & operation Performance evaluation & improvement

Context of the Organizations	The environmental problems that affect an organization vary widely according to its size and its industry. In this section, you need to identify internal and external issues that could affect your business or stakeholders, as well as the compliance regulations that you must adhere to.
Leadership	As with most ISO standards, it is necessary to describe the roles and responsibilities of employees within the management system. The standard also highlights the importance of involving senior managers in the implementation, maintenance and continuous improvement of the EMS.
Planning	This section of ISO 14001 relates to identifying risks or opportunities that could affect the organization's EMS and planning to address them, if any. More precisely, you must define your objectives and how you intend to achieve them within the EMS.
Support	This is the largest section of ISO 14001 that covers resource, communication and documentation requirements. You must ensure that your employees at all levels are aware of your EMS policies, understand their role in contributing to success, and are competent enough to do so effectively.
Operation	This clause establishes that you must evaluate which of your activities have a significant impact on the environment and establish written procedures for activities within the scope of the EMS. This could include manufacturing, transportation, disposal of products, etc. These processes must include solutions for the risks identified in Section 6. You should also describe how you plan to prepare for and respond to emergency situations that could have a negative impact on the environment.
Performance Evaluation	Here you must explain how you monitor, measure, analyze and evaluate your environmental management system. This should include plans for an internal audit program and periodic management reviews.
Improvement	This last section contains the requirements to improve your EMS over time. This includes the need to assess process deviations and take corrective action for the processes.

Survey of ISO 14001 certification

The ISO Certification Survey is an annual survey of the number of valid certificates according to the ISO management system standards worldwide. Below are the results of the number of companies that have implemented an ISO 14001 certification at the end of 2020.

Column Chart 1: Number of ISO 14001 Certificates per year

Number of ISO 14001 Certificates issued per year

Conclusion

The advantages of ISO 14001 cannot be underestimated; Companies large and small, as mentioned above, have used this standard with great success. Here are just a few of those benefits:

Improve your image and credibility: By assuring your clients that you are committed to demonstrably managing their environmental impact, you can improve your image and market share by maintaining a good public image and maintaining improved relationships. With the communities.

Improve cost control: one improvement that all companies look for is cost reduction. EMS can help by saving energy and materials, while reducing incidents that could lead to liability costs for a business, and improving environmental controls can help secure insurance at a lower cost to the business.

Use evidence-based decision making - By ensuring that you use accurate data to help you make decisions about what to improve, you can greatly increase the chances that your improvements will be successful the first time, rather than having multiple failed attempts. By using this data to track your progress, you can correct these improvement initiatives before they "get out of hand", which can save you time and money.

Build a culture of continuous improvement - Continual improvement allows you to systematically work towards better processes and lower environmental impacts to improve your public image and potentially reduce your costs, as described above. By creating a culture of improvement, people are always looking for ways to improve their processes, making EMS maintenance easier.

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