Journal of Basic and Applied Engineering Research
p-ISSN: 2350-0077; e-ISSN: 2350-0255; Volume 3, Issue 2; January-March, 2016, pp. 158-161

http://www.krishisanskriti.org/Publication.html

Introspection: ISO 14001-EMS (Enviornmental Management System)

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Abstract—*Our impact on environment is increasing, there's no denying that .And we need better understanding and management for our impact. Responding to our planet ecological changes, the ISO 14001 supports organizations in reducing their environmental impact and understanding the effect the environment has on their business. So, it's essential for organizations to understand the ISO 14001, benefits associated with this and implementation phases, so that organizations adopt Environmental Management System like ISO 14001.We also point out some interesting facts regarding ISO 14001-EMS (Environmental Management System).*

Keywords*: ISO 14001, EMS, Environment, Implementation*

1. INTRODUCTION

In the last few years, there has been a growing necessity, interest, and reactions to the concepts of preserving the environment. Environmental issues are one of the most common "hot topics" in the world now days. (Margit Inno 2005). Rapid industrialization produce positive effect on economic development but also seriously threatened the world's natural environment balance. That's why organizations are constantly under pressure to develop and implement Environmental Management System (EMS). An EMS, in its simple form asks us to control our activities so that any environmental impacts are minimised.

The ISO 14000 series of environmental management standards are helping the organizations to manage the environmental effect of their business practices (Cynthia J. Martincic 1997). The ISO 14000 series emerged primarily as a result of the Uruguay round of the GATT negotiations and the Rio Summit on the Environment held in 1992. While GATT concentrates on the need to reduce non-tariff barriers to trade. ISO 14001 is an internationally accepted standard that gives direction to implement effective EMS. ISO 14001 requires organizations to control its impacts on the environment.

With ISO 14001 company management can measured and improved environmental impact (Clements, R.B 1996). Organizations are using ISO14001 standard targeting to meet a growing "Green Market" demand by keeping the Government Environmental Regulations in the mind. (Ervin and Casey, 2001).

During the last few years, ISO 14001 certification has experienced a massive international growth (Marmion, Casadesús & Heras**,** 2010). According to ISO Survey 2013 (www.iso.org/iso/iso-survey) until the end of December 2013, at least 301,647 ISO 14001:2004 certificates had been issued in 171 countries. ISO 14001 requires Organization's commitment to prevent the pollution and continual improvement as part of the normal work cycle (Ammenberg, 2005). ISO 14001 is independent from types and sizes of organizations. (Hillary 2001).

2. ISO 14001 SOME INTERESTING FACTS AND FIGURE

- The standard was first published in 1996.
- ISO 14001 certificates have been issued in 171 countries.
- Certification shows that environmental impact is being measured and improved.

Environmental Issues issue	How ISO 14001 helps
➢ Pressure to grow sustainably is a challenge for any organization.	It identifies and establishes the significance of all your environmental impacts It implements effective operational controls to manage your environmental Impacts It improves the efficient use of natural materials
➢ Organizations need to stay up to date with legislation and remain compliant.	It makes you take account of legal requirements when setting up, implementing and maintaining your ISO 14001 system. It ensures you commit to complying with applicable legal requirements
➢ A poor environmental record can quickly damage an organizations reputation.	It shows that environmental impacts are priority. It makes sure you continually improve your sustainable development

➢ Increasingly supply chains demand that organizations manage their environmental impact.	It demonstrates that you are an ethical and credible organization It is internationally recognized It helps to establish lasting partnerships with customers and suppliers.

- In last 10 years, the number of ISO 14001 certificates has increased by 258%.
- Namakkal municipality, Tamil Nadu, India received ISO 14001:2004 certification.
- India's certification of ISO 14001 increase from 111(1999) to 5872(2013).

3. BENEFITS OF ISO 14001 STANDARDS

According to ISO 14001, an EMS will enhance your organization's environmental performance because it will:

- Positive impact on a Company's asset value (Van der Veldt, 1997).
- Placing the Organization in a better position to operate in the International market place (Potokis & Prakash 1997)
- Enhanced external relationship & reduced institutional pressure (Boiral 1998)
- Identification of potential savings & reduced waste (Tibor 1999)
- Reduced overhead risk and compliance cost (Sheger 2000)
- Improved internal organizational efficiency (Vastag 2000)
- Generation of positive image (Prakash 2001)
- Better internal Operations, Marketing effects and improved supplier relations (Zeng, Tian & Shi 2005)
- Improved Environmental performance & Business performance (Link & Naveh 2006)
- Productivity benefits, Market benefits, Financial benefits and societal benefits (Gavronski, Ferrer & Paiva 2008)

Source: bsigroup.com

4. LITERATURE REVIEW

The International Standardization Organization's ISO 14001 was adopted in 1996. And generally ISO reviews each standard after five years for its adequacy and relevance. . From an academic point of view the organizations have advantages of implementing ISO 14001 (Bayramoglu & Wiele, 2012). Tari, Molina-Azorín and Heras (2012) also suggest that ISO 14001 has clear benefits on people, organizational, operational, and customer results. Studies have found the internal factors led to better results than external motivations (Tarí et al., 2012).

The top three countries for the total number of certificates issued were China, Italy and Japan. In 2013 the top three for growth in the number of certificates were China, Italy and India. (source ISO Survey, 2013, available at www.iso.org). Her as and Boiral (2013) position that in order to analyse the real perceptions of the various stakeholders regarding the adoption of meta-standards attentive observational studies are necessary.

Chai Tew Ang and Norhashimah Morad et al. (2014) identify a number of factors that motivates an organization to adopt the ISO 14001 standards. Erla Björk Sigurgeirsdóttir et al. (2014) showed there is no statistically significant financial benefit for the Icelandic companies after implementing ISO 14001.

Aliza Ramli and Faizah Darus et al. (2014) explain and explore the environmental management accounting practices; within Malaysian organizations and to overcome the problem of traditional management accounting like environmental hidden costs.

Maria-del-Val Segarra, Angel Peiro-Signes, Rohit Verma et al. (2014) study and results imply that acquiring ISO 14001 certification may leads hotels to a competitive advantage over similar non-certified properties. S.N. Kalnins et al. (2014) find out that there is a lack of practical studies assessing the role of environmental management systems to the improvement of the wood fuel production sector.

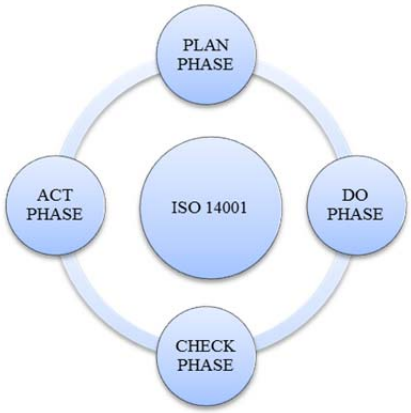
Caroline Kairu N. et al. 2014 clarify the most influential factors are the role of top management, organization's market position and the relationship with stakeholders.

Hristina Harizanova et al. 2015 find out which are the main sectors in Bulgaria, and the main reason to follow which ISO 14001 could be implemented.

Luis Miguel Ciravegna Martins da Fonseca et al.(2015) discuss the Sustainability approach through the use of Environmental Management Standards (EMS).

5. IMPLEMENTATION PHASES

This International Standard is based on the methodology known as **Plan-Do-Check-Act (PDCA)**.



In ISO 14001 it is relatively easy to see how the requirements of the standard follow the conventional improvement cycle of Plan-Do-Check-Act. With ISO 14001, it is easier to see this in the way that the requirements follow the plan-do-check-act cycle in order.

6. PLAN PHASE

- Develop procedures for identifying environmental aspects
- Develop procedures for identifying applicable legislation and other requirements
- Establish environmental objectives and targets aimed at reducing the organisation's significant environmental aspects. Consider the inputs, outputs and processes/activities of the business in relation to; emissions to air, releases to water, waste management, contamination of land, use of raw materials and natural resources and other local environmental and community issues.

Do Phase (Implement the processes)

Putting in place procedures and support mechanisms to achieve the environmental objectives and targets and result in a continual improvement in environmental management

- Define responsibilities within the organization for different aspects of the EMS.
- Training and awareness of employees and contractors.
- Communication – internally and externally.
- Establishing the EMS documentation.
- Document control procedures.
- Implement operational controls for those processes / activities associated with significant environmental aspects.

Emergency preparedness and response Implement procedures to address reasonably foreseeable emergencies and to minimise their impact should they occur. (eg. Fire, major spillages of hazardous materials, explosion risks etc.)

Check Phase (Monitor and measure processes against environmental policy, objectives, targets, legal and other requirements, and report the results.)

- Monitor those activities / processes having significant environmental impacts.
- Procedures for checking compliance with legislation.
- Procedures for addressing failures in the EMS ('non-conformities')
- Procedures for controlling records e.g. monitoring records
- Procedures to establish regular internal auditing of the EMS
- Implement procedures to enable appropriate corrective and subsequent preventive action to be taken where breaches of the EMS occur (eg. process control problems, delays in project process, noncompliance with legislation, incidents etc.). Implement procedures to keep records generated by the environmental management system. Implement a procedure to carry out audits of each part of the EMS and company activities and operations to verify both compliance with the EMS and with ISO 14001. Audit results must be reported to top management. A typical audit cycle is one year but more critical activities will require auditing more frequently.

Act Phase (Take actions to continually improve performance of the environmental management system).

- After the checking stage, a management review is conducted to ensure that the objectives of the EMS are being met, and the extent to which they are being met.
- To evaluate changing circumstances, such as legal requirements, in order to make recommendations for further improvement of the system
- This Act phase allows the plans to be modified so that the cycle of improvement.
- At regular intervals (typically annual), top management must conduct through meetings and record minutes of a review of the EMS, to determine that it is still appropriate and effective or to make changes where necessary.
- Top management will need to consider audit results, project progress, changing circumstances and the requirement of ISO 14001 for continual improvement, through setting and achieving further environmental targets.

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