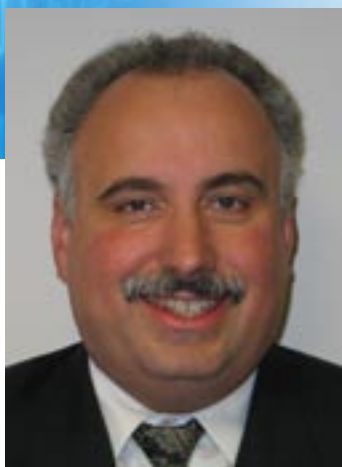


ISO 50001: Setting the Standard for Industrial Energy Management

by Edwin Piñero



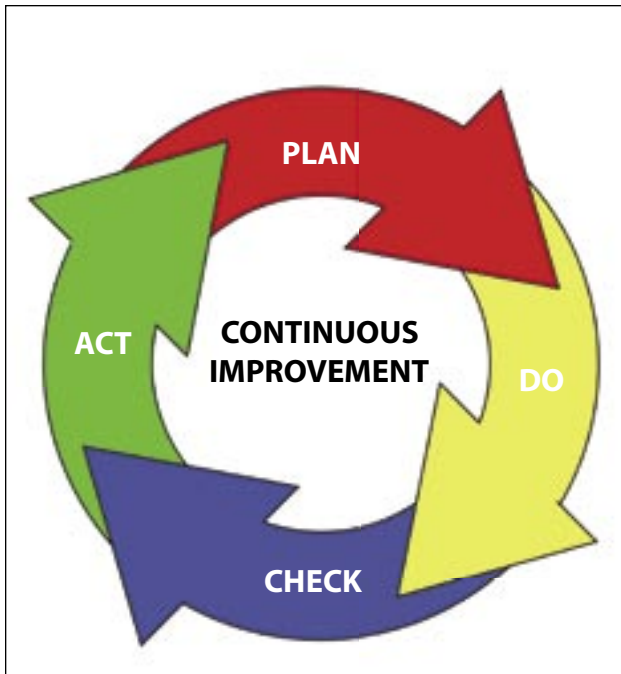
Edwin Piñero is Chairman of ISO PC 242 and Manager of Sustainable Development for the Energy, Systems, and Security Division of Parsons

Corporation. He has more than 29 years of experience in earth and environmental sciences, environmental management, and implementation of sustainable practices. He has been involved in the ISO standards process for the past 14 years. In 2004, he was appointed by the President to serve as the White House Federal Environmental Executive, responsible to develop national policy on, and promote and implement, sustainability throughout the Federal government. Additionally, he has served as the Director for the Bureau of Environmental Sustainability at the Pennsylvania Department of Environmental Protection, which included the Governor's Green Government Council, promoting the greening of the state government. Piñero also served as the Pennsylvania State Energy Director.

Introduction

There is probably no topic more in the public eye right now than energy and climate change. Whether it is the price of energy, the impacts of climate change, or the anxiety over dependence on foreign oil, we hear about it on a daily basis. And nearly all sectors and elements of the population are doing something about energy. Whether it is being more prudent at home, governments setting policies and incentives, or businesses doing what they can to save energy, everyone is trying to do his or her part. Effective energy management is a priority focus because of the significant potential to save energy and reduce greenhouse gas (GHG) emissions worldwide.

An equally growing movement is the use of international management system standards as tools to improve organizational efficiency and productivity. Product standards have been around for a long time, but the use of international standards to manage “how” an organization functions, rather than the nature of its product, has been growing. One of the leading organizations creating these types of management system standards is the International Organization for Standardization (ISO). Existing ISO standards for quality management practices (ISO 9000 series) and environmental management systems (ISO 14000 series) have successfully stimulated substantial, continuous efficiency improvements within organizations around the globe. Work is underway in the area of security



ISO 50001 will employ the Plan-Do-Check-Act approach similar to other continuous improvement standards.

management, health and safety management, and even corporate social responsibility.

We are now experiencing an interesting nexus of the need for effective energy management and the successful growth of international, consensus-based management system standards. So it is clear that an energy management system standard's time has come. ISO has identified energy management as one of the top five fields meriting the development and promotion of international standards. And clearly the first major users of such a standard would be industry. An energy management standard is expected to achieve major, long-term increases in energy efficiency (20% or more) in industrial facilities. The need to reduce GHG emissions and the need to promote efficiency and the use of renewable energy sources provide a strong rationale for developing this new standard.

This need did not go unnoticed in several countries. The United States has been involved with the idea of an energy management system standard as far back as 2000, with the introduction of the Management System for Energy (MSE 2005) standard. This American National Standards Institute (ANSI)-accredited standard was followed by two newer versions of the document. And several other countries and regions have developed or are developing such standards, including China, South Korea, and the European Union with their PrEN 16001.



LED BULBS USE
90% LESS ELECTRICITY
THAN STANDARD BULBS

NO MERCURY
NO MAINTENANCE
LONG LIFE



Seesmart LED has engineered an extensive line of commercial lighting products that will reduce your lighting energy costs by **50%**, reduce your HVAC cycle times and reduce your maintenance costs. All of these products do NOT contain mercury and require no ballasts to operate.

If LED's were implemented right now around the world, we would **never** need to build another power plant. LED would actually eliminate the need for over **30** power plants.



This High Bay is a 100watt direct replacement for a 250-400 watt MH or HPS. This does NOT use a ballast!



This LED Tube Light is a 15watt T8 replacement. This bulb is designed to be a direct retrofit and does NOT use a ballast!

Find out more!

4139 Guardian Street, Simi Valley, CA 93063
Tel: **877.578.2536** or Fax: **888.239.0959**
Email: info@seesmartled.com

WWW.SEESMARTLED.COM

History of ISO 50001

On the international front, early on, the United Nations Industrial Development Organization (UNIDO) recognized industry's need to mount an effective response to climate change and to the proliferation of national energy management standards. In March 2007, UNIDO hosted a meeting of experts, including representatives from the ISO Central Secretariat and nations that had adopted energy management standards. That meeting led to submission of a UNIDO communication to the ISO Central Secretariat requesting that ISO consider undertaking work on an international energy management standard.

The U.S. Department of Energy (DOE) and ANSI also saw the need for an organized and concerted effort to help industry improve its energy efficiency. As with their support of the MSE 2000 work, DOE took a leadership role in spearheading the proposal for this new ISO standard. Discussions between U.S. experts and ANSI led to a formal proposal for ISO to establish a committee on this subject. In February 2008, the Technical Management Board of ISO approved the establishment of a new project committee (ISO/PC 242 – Energy Management) to develop the new ISO Energy Management System Standard, building on the most advanced good practices and existing national or regional standards. ANSI is serving as the committee Secretariat in partnership with Associação Brasileira de

Normas Técnicas (ABNT) to lead ISO/PC 242, Energy Management. The new ISO 50001 will establish an international framework for industrial and commercial facilities, or entire companies, to manage all aspects of energy, including procurement and use.

Why a New Standard?

The standard will provide organizations and companies with technical and management strategies to increase energy efficiency, reduce costs, and improve environmental performance. Based on broad applicability across national economic sectors, the standard could influence up to 60 percent of the world's energy demand. Corporations, supply chain partnerships, utilities, energy service companies, and others are expected to use ISO 50001 as a tool to reduce energy intensity and carbon emissions in their own facilities (as well as those belonging to their customers or suppliers) and to benchmark their achievements. Although originally intended for industry, the standard will be usable by any type of organization wishing to effectively management its energy uses and efficiency.

As part of the standard development process, ISO/PC 242 will define relevant terms and develop management system requirements along with providing guidance for use, implementation, measurement, and metrics associated with the standard. To provide compatibility and integration opportunities, it is anticipated that the standard will foster



Reli On
+ -®

Predictable backup power for an unpredictable world.
You can't control everything that happens at your sites, but you can depend on ReliOn fuel cells to back up your critical applications. Our patented Modular Cartridge Technology® is ultra-reliable, simple to use and easy to maintain. Field proven through hurricanes, winter storms, and human error, ReliOn fuel cells keep your systems up and running when you need them. And they're green, so you never have to worry about where you put them.

www.relion-inc.com
A new era in critical backup power.



the same management system principles of continual improvement and use the Plan-Do-Check-Act approach as employed in ISO 9001 and ISO 14001.

It is envisioned that the future standard will provide organizations with a recognized framework for integrating energy efficiency into their management practices. Multi-national organizations will have access to a single, harmonized standard for implementation across the organization with a logical and consistent methodology for identifying and implementing energy efficiency improvements. The standard will also:

- Assist organizations in making better use of their existing energy-consuming assets
- Offer guidance on benchmarking, measuring, documenting, and reporting energy intensity improvements and their projected impact on reductions in GHG emissions
- Create transparency and facilitate communication on the management of energy resources
- Promote energy management best practices and reinforce good energy management behaviors
- Assist facilities in evaluating and prioritizing the implementation of new energy-efficient technologies
- Provide a framework for promoting energy efficiency throughout the supply chain
- Facilitate energy management improvements in the context of GHG emission reduction projects.

The Process

The first meeting of ISO/PC 242 was held September 8–10 near Washington D.C. The meeting was attended by more than 80 delegates from 25 ISO national member bodies from all regions of the world, as well as representatives from liaison organizations. Excellent progress was made in the technical discussions, and a first working draft was circulated for comment. A major point of discussion was the need to ensure compatibility with the existing suite of ISO management system standards. The committee therefore took the key decision to base the draft on the common elements found in all of ISO's management system standards.

The 2nd ISO/PC 242 meeting took place in Rio de Janeiro, Brazil in March 2009. At this meeting, discussion delved more into the substance of what will make ISO 50001 unique. This included discussion about energy performance improvements, the need for relevant data, and the need for the ability to prioritize energy issues. After the first meeting, two draft cycles had occurred and since the Brazil meeting, a committee draft is being prepared for issuance in the summer of 2009.

When the committee was created, the two-year completion schedule with a final standard ready for the end of 2010 seemed a nearly insurmountable task


when considering the built-in time periods for balloting. However, the clearly urgent need for an international standard that would provide a management tool to deal with the critical issue of energy, combined with an urgency to harmonize the rapidly growing family of similar national standards, has resulted in a very fast moving and smooth standard development process. An equally critical factor is the amazing degree of professionalism, expertise, and spirit of collaboration exhibited by the project committee members. The individuals on the committee bring their collective expertise in energy management, standards, and industry together on the effort.

As with any ISO standard, there is ample opportunity for stakeholder input, and as the process moves to the committee draft stage, the role of national delegations grows in importance. It is expected that each member nation will develop its own opinions and comments on the ensuing drafts, such that final balloting can occur in 2010. Energy leaders are encouraged to participate in their country's national mirror committee, which will coordinate the country's participation in writing the standard.

The Future

It is hoped that the introduction of ISO 50001 will result in widespread uptake of the standard among all types of energy users. The Plan-Do-Check-Act model has been proven successful for managing quality and environmental issues. Each new management system standard is an improvement over the prior ones based on lessons learned from the experiences of the predecessors. Hence, ISO 50001 will be strong in integrating performance measurement and data with the management system framework. So the driver of a successful energy management system will not only lead to effective management of the process, but also increased energy efficiency and more prudent energy use.

DOE has in place the Superior Energy Performance (SEP) Program. This program is based on a strategy that will foster an organizational culture of continuous improvement in energy efficiency in U.S. manufacturing facilities, lead to the development of a transparent system to validate energy intensity improvements and management practices, and creation of a verified record of energy source fuel savings and carbon reductions with potential value in national and international markets. Ultimately, the participating industry partner can be certified by an ANSI-accredited third party that they meet the goals of the SEP. A fundamental requirement of entering the SEP program is having an energy management system. Currently, the standard in use is the MSE, but DOE intends to replace that requirement with ISO 50001 once it is issued.

As with other ISO management systems standards, it is likely that there will be a process to certify the management system itself, as is done with ISO 9001 and ISO 14001. 

More information on the ISO/PC 242 activities and status can be found on the ISO website [\[www.iso.org\]](http://www.iso.org).