

# ISO 50001

## energy management



## Energy excellence

### In comes the ISO 50001 energy management system standard

by Edwin Piñero

With oil trading above USD 100 per barrel and climbing as unrest grows around the world, energy security is an overriding concern in the minds of citizens, politicians, and businesses. Energy touches all aspects of society and the effects of shortages can reverberate throughout economies and the daily lives of entire populations. Nearly all segments of society are involved in energy conservation, be it prudent consumption at home, governments setting policies and incentives, or businesses doing what they can to save money by saving energy.

Although the typical homeowner or business cannot control energy supplies, they can certainly decide how they use the energy that is available, and the most efficiently used energy is that which is not used at all.

Energy efficiency is often called the “forgotten fuel” because efficiency is sometimes ignored in discussions about alternative energy sources. Also, for the energy that must be used, selecting the right mix of alternative and renewable sources will help reduce dependence on scarce fossil fuels.

Action toward greater efficiency, commonly known as energy management, is a priority focus for many organizations because of the significant potential to save

energy and reduce greenhouse gas emissions. Reducing overall energy use, and especially fossil fuel consumption, means greater reliability and availability of energy and lower operating costs. More than just an environmental issue, energy management is equally an economic and social issue. In essence, energy management supports the three pillars of sustainability: economy, environment and society.

#### Tools, guidance and resources

The importance of energy management demands that tools, guidance and resources must be available to help organizations

effectively address the issue. These tools should include basic information on how to integrate energy management into the overall organizational management structure. But we live in a globalized economy, where markets transcend national boundaries and regulatory regimes. Tools and guidance will not come from national regulatory regimes, but from market-driven International Standards.

Standards are created by the very organizations that need to use them, and are created in an open, consensus-driven process. Standards are adaptable across various types of organizations and work smoothly across national borders. They establish a level playing field, reducing unfair advantages and inconsistent benchmarks.

Within this realm is the growing number of international management system standards designed as tools to improve organizational efficiency and productivity. Product standards have been with us for a very long time, but the relatively new field of International Standards for managing how an organization functions – as opposed to the nature of its products – is expanding rapidly.

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.

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Several countries and regions have developed or are developing their own management standards, including China, Ireland, Republic of Korea, the USA and the European Union with prEN 16001, *Energy management systems*. On the international front, the UN Industrial Development Organization (UNIDO) has long recognized industry's need to mount an effective response to climate change and to the proliferation of national energy management standards, leading to a request that ISO consider undertaking work on an international energy management standard.

ISO had identified energy management as one of the top five fields for development of International Standards. Clearly, the first major users of such a standard would be industrial companies since industry is the single largest user of energy in the world.

Effective energy management in industry offers great potential for improvement, with expected long-term efficiency increases of 20% or more.<sup>1)</sup> With broad applicability across national economic sectors, this standard could influence up to 60% of the world's energy demand. Although originally intended for industry, the standard will be usable by any type of organization wishing to effectively manage its energy uses and efficiency.

## Evolution of ISO 50001

The journey toward an international management system standard for energy began with the initiation of work on ISO 50001, Energy management. In February 2008, the ISO Technical Management Board approved the establishment of a new project committee, ISO/PC 242, *Energy management*, building on the most advanced good

1) McKane, et al, 2007, UNIDO publication, Policies for Promoting Industrial Energy Efficiency in Developing Countries and Transitional Economies; v. 08-52434- April 2008.

practices and existing national or regional standards. 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.

After only four committee meetings spanning a period of two years, the document is now at the Final Draft International Standard (FDIS) stage, with publication expected for mid-2011. Many countries and organizations are already preparing training and rollout programmes to catapult ISO 50001 into the mainstream as quickly as possible. In addition, ideas for new work items and supporting standards and documents are already being developed.

Several factors are affecting the speed of the standard's development. One is the need to stem dependence on scarce fossil fuels; another is emergence of an ideal mix of experts and qualified stakeholders with the skills and passion needed to develop the document.

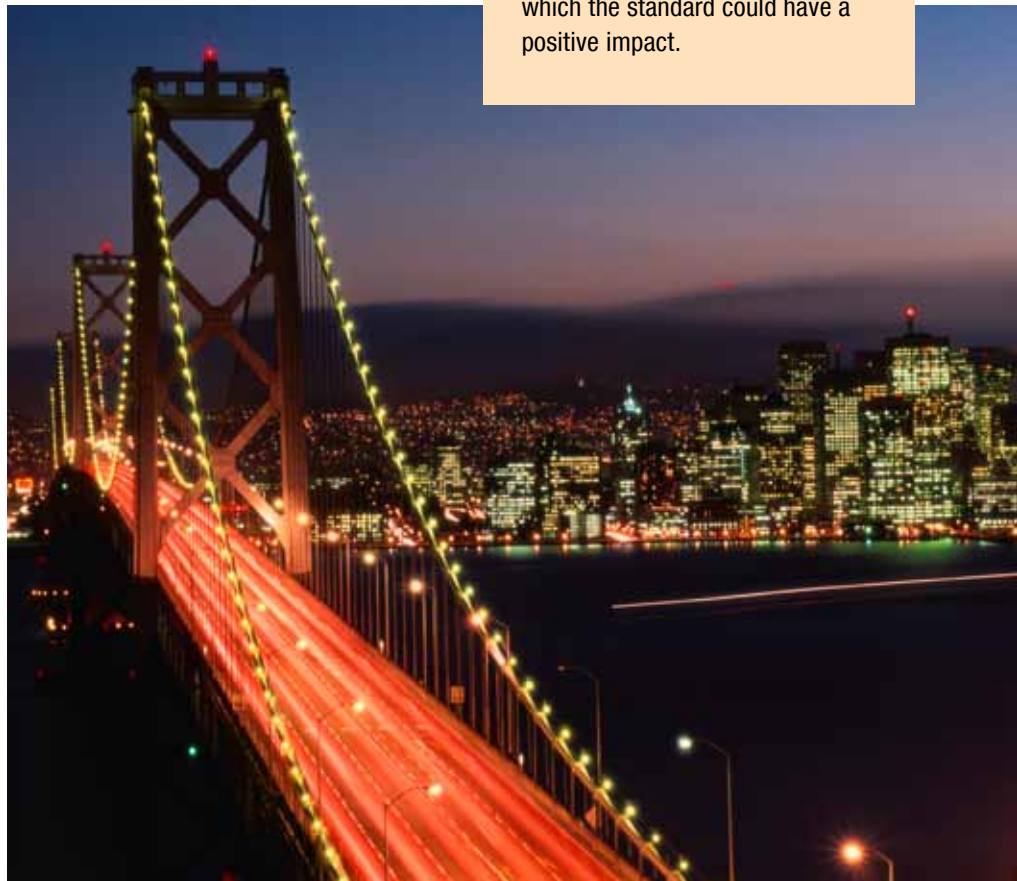
When the committee was created, the aggressive schedule calling for a final standard by early 2011 seemed a nearly insurmountable task, especially considering the time periods required for balloting. However, the urgent need for an International Standard that would provide a management

## ISO 50001 and global demand

ISO 50001 could influence up to 60% of the world's energy demand.

The above estimate is based on information provided in the section, "World Energy Demand and Economic Outlook", in the International Energy Outlook 2010, published by the US Energy Information Administration. This cites 2007 figures on global energy consumption by sector, including 7% by the commercial sector (defined as businesses, institutions, and organizations that provide services), and 51% by the industrial sector (including manufacturing, agriculture, mining, and construction).

As ISO 50001 is primarily targeted at the commercial and industrial sectors, adding the above figures provides an approximate total of 60% of global energy demand on which the standard could have a positive impact.



tool to deal with critical energy issues while harmonizing the growing family of national standards has resulted in an admirably smooth and rapid development process.

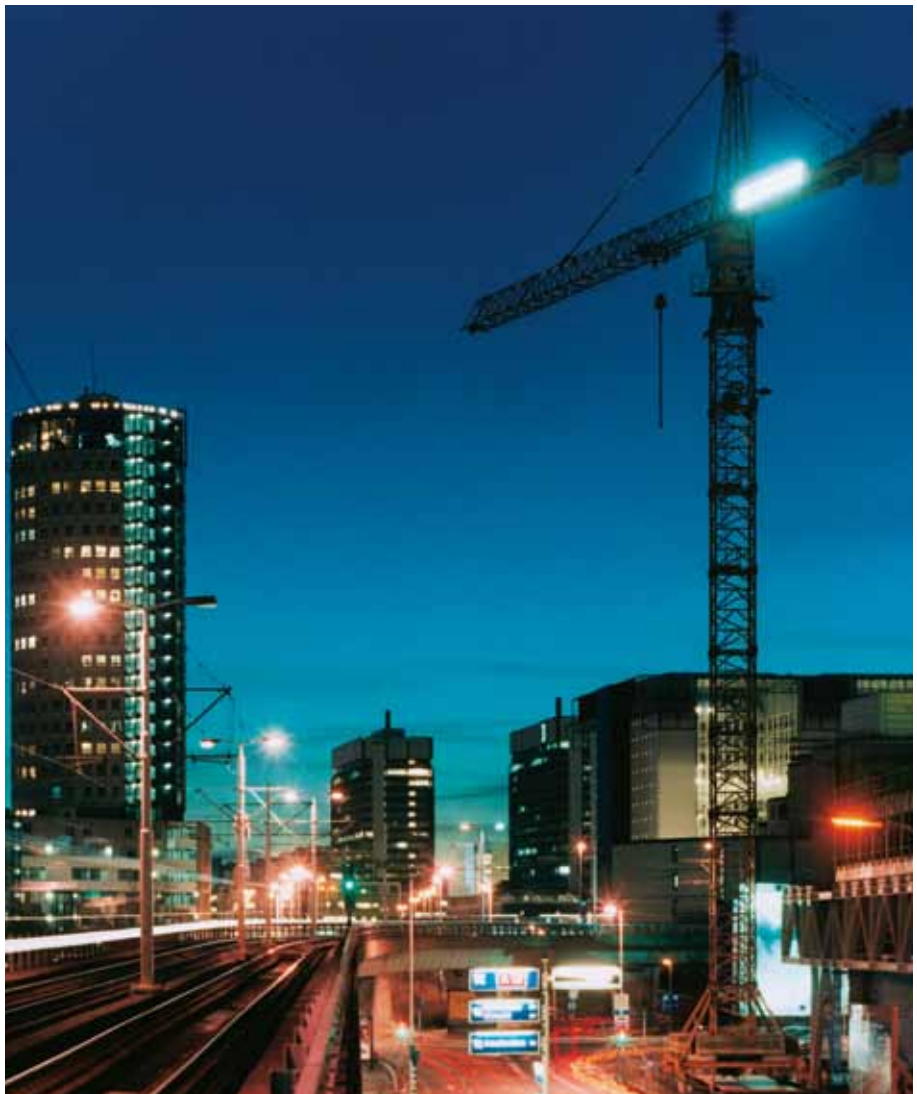
## How ISO 50001 will help

ISO 50001 will provide organizations and companies with technical and management strategies to increase energy efficiency, reduce costs, and improve environmental performance.

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The standard is intended to provide organizations and companies with a recognized framework for integrating energy efficiency into their management practices. Multinational organizations will have access to a single, harmonized standard for implementation across the organization with a logical and consistent methodology for identifying and implementing improvements. The standard is intended to accomplish the following:

- 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 reductions in greenhouse gas emissions
- Create transparency and facilitate communication on the management of energy resources
- Promote energy management best practices and reinforce good energy management behaviours
- 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 for greenhouse gas emission reduction projects
- Allow integration with other organization management systems such as environment and health & safety.



## The future

It is hoped that the introduction of ISO 50001 will result in widespread adoption of the standard among all types of energy users. The Plan-Do-Check-Act model has proven successful for managing quality and environmental issues. Each new management system standard is an improvement over earlier ones based on lessons learned from the experiences of the predecessors.

ISO 50001 will help integrate 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. As with other ISO management system standards, it is likely that there will be a process to certify the management system itself, as with ISO 9001 and ISO 14001. ■

## About the author



**Edwin Piñero** is the Chief Sustainability Officer for Veolia Water North America, and leads Veolia Water's sustainability efforts in North America. He works to support programs at com-

pany operations as well as develop and implement sustainable programs and services for Veolia Water's clients. The company's North American operations serve more than 14 million people in approximately 650 communities. He has served as a consultant, as well as in public sector at the state and Federal level, addressing sustainability issues; including serving as the White House Federal Environmental Executive where he focused on developing and implementing sustainability policy and practices within the Federal government.