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ISO 50001: Energy Management System

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Energy Use Must Be Managed

- Users cannot control prices, politics, or the global economy, but they can manage how they use energy.
- A management process is needed to help users proactively assess, measure, and manage energy usage.
- ISO 50001 standard offers a promising mechanism to help users manage energy.
  - Modeled after the Plan-Do-Check-Act framework.
  - Helps organizations in multiple sectors implement an energy management system for continuous improvement.

Primary Energy Use by Sector (2005)

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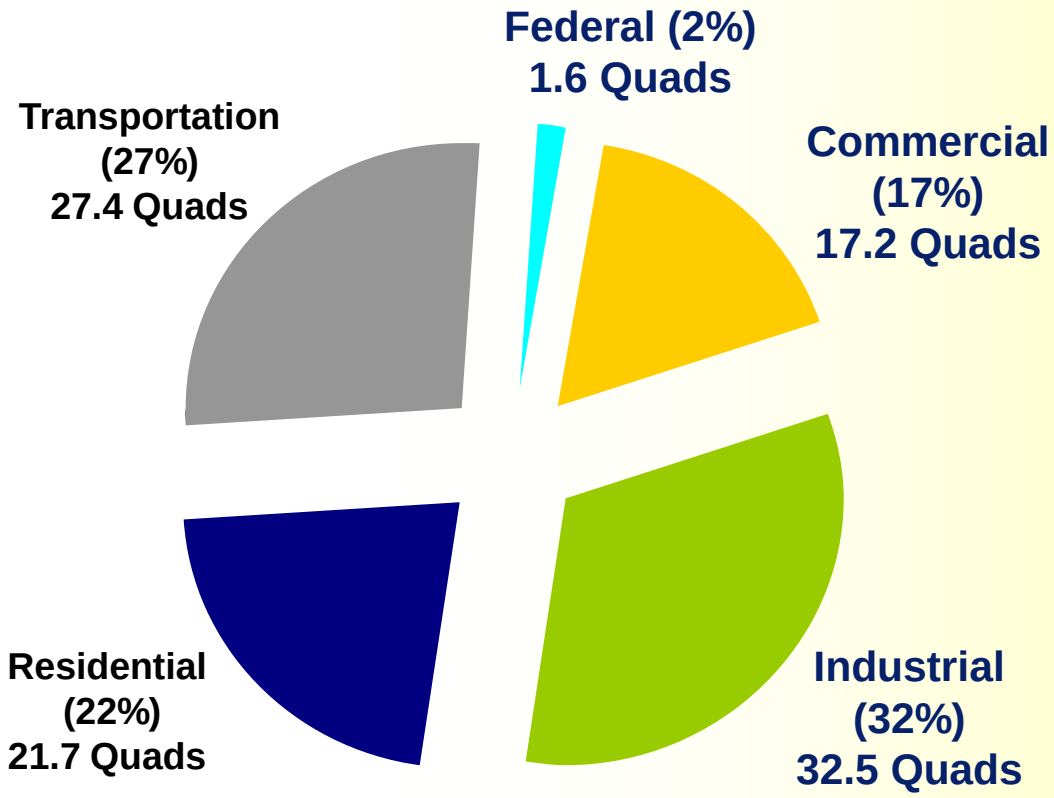
U.S. Energy Consumption, Primary Energy Use by Sector



ISO 50001 targets energy management in industry (ITP), commercial buildings (BTP), and the federal sector—including federal buildings and transportation fleets (FEMP).

The impacts could be substantial.

Note: 2005 is the most recent year for which all data are available.
Sources: EIA, Annual Energy Review Table 2.1. 2009
DOE/EERE, Buildings Energy Data Book. 2009

Why an Energy Management System?

An energy management system offers a solution.

- Changing how energy is managed is the most common way to achieve energy efficiency (rather than installing new technologies).
- The Plan-Do-Check-Act model of management systems has been successful for quality, health and safety, and environment.
- An energy management system provides a method that integrates energy issues into existing management systems for continual improvement.
- Applicable to industrial, commercial, institutional, and transportation sectors.

Benefits of an ISO Standard:

- Can be made compatible with other ISO management system standards (e.g., ISO 9001, ISO 14001).
- Multi-national companies can use one system in all of their facilities.

Increased International Focus on Energy Efficiency

- China initiated a plan to reduce energy use by 20% per unit of GDP over 2005 levels by 2010. The focus is on the top 1,000 industrial enterprises.
- G-8 meetings now include energy efficiency as a major topic.
- The International Energy Agency recognizes energy efficiency as a primary source of short-term GHG emission reductions.
- The U.N. Industrial Development Organization (UNIDO) is promoting systems energy efficiency and energy management standards for both developed and developing nations.

ISO Energy Management Standard

ISO 50001 energy management standard will establish a framework for industrial plants, commercial facilities, and organizations to manage energy.

ISO International Organization for Standardization

Potential impacts:

- Targets the large energy-saving potential in managing energy more effectively (10 to 30%, and greater).
- Could influence up to 60% of the world's energy use across many economic sectors.

Uptake of ISO 50001 will be driven by companies seeking an internationally recognized response to:

- Reduce energy costs
- Sustainability manufacturing
- Demand created along the manufacturing supply chain
- National carbon programs
- International climate agreements

Status of ISO 50001:

- Under development by ISO Project Committee 242; 49 countries participating
- Draft International Standard released April 2010
- Ready for publication by mid-2011.

Applications in industry, commercial buildings, and transportation fleets

Scope of ISO 50001

- Requires an organization to establish, implement, maintain, and improve an energy management system, enabling **systematic** achievement of **continual improvement in energy performance**, energy efficiency, and energy conservation.
- Imposes requirements on energy supply and consumption:
  - Measurement
  - Documentation and reporting
  - Design and procurement practices for energy-using equipment and systems
  - Processes and personnel

ISO International Organization for Standardization

- Applies to all factors that can be monitored and influenced by the organization to affect energy use.
- **Does not prescribe specific performance criteria** with respect to energy.
- Designed to be used independently, yet can be aligned or integrated with other management systems (e.g., ISO 9001 and 14001). Applicable to all organizations.

History of ISO 50001

- In March 2007, UNIDO hosted the first meeting proposing the concept of an energy management standard. UNIDO sent a request to ISO on behalf of the participants. The ISO Secretariat accepted the request.
- UNIDO initiated a program to foster coordination among various nations to develop an international standard. UNIDO hosted a preparatory meeting in Beijing in April 2008.
- PC 242 was created to guide the development of ISO 50001.
  - 49 participating nations worldwide
  - Four-nation leadership: U.S., China, Brazil, U.K. UNIDO has liaison status.

Business Benefits of Implementing an Energy Management System

Organizations implementing an energy management system can achieve the following:

- Establish a baseline of energy use
- Actively manage energy use and costs
- Reduce emissions without negative effect on operations
- Continual improvement in energy intensity
- Document savings for internal and potentially external use (e.g., emissions credits)

ISO 50001: Moving Forward

- Progressively foster wider use of organizational policies; specify need for greater energy efficiency in product manufacture throughout the supply chain.
- Use ISO 50001 as an effective tool to move the market toward greater energy efficiency
- Use ISO 50001 in a greater variety of organizations and businesses: industrial, commercial, public, transportation, etc.