



Update on ISO 50001, Energy Management Standard

Roland Risser

Pacific Gas and
Electric Company

January, 2009





Why an Energy Management Standard?

- Most energy efficiency in industry is achieved through changes in *how energy is managed* in a facility, rather than through installation of new technologies;
- An energy management standard provides a method for integrating energy efficiency into existing industrial or commercial management systems for continuous improvement;
- All existing and planned energy management standards are compatible with ISO 9000/14000¹;
- Companies who have voluntarily adopted an energy management plan (a central feature of an EnMS – Standard) have achieved major energy intensity improvements².

¹ International Organization for Standardization (ISO)

² Btu/lb of product



Business Benefits

Implementation of an energy management plan assists a company to:

- Develop a baseline of energy use
- Actively managing energy use and costs
- Reduce emissions without negative effect on operations
- Continue to improve energy use/product output over time
- Document savings for internal and external use (e.g. emission credits)



Energy Management Results

Companies who have used energy management to achieve major energy intensity improvements include:

- **Dow Chemical** achieved 22% improvement (\$4B savings) between 1994 and 2005, and is now seeking another 25% from 2005 to 2015
- **United Technologies Corp** reduced global GHG emissions by 46% per dollar of revenue from 2001 to 2006, and is now seeking an additional 12% reduction from 2006 to 2010
- **Toyota's** North American (NA) Energy Management Organization has reduced energy use per unit by 23% since 2002; company-wide energy-saving efforts have saved \$9.2 million in NA since 1999.

1 Btu/lb of product



Components of an Energy Management Standard (EnMS)

Typical features include:

1. A ***strategic plan*** that requires measurement, management, and documentation for continuous improvement for energy efficiency;
2. A ***cross-divisional management team*** led by a representative who reports directly to management and is responsible for overseeing the implementation of the strategic plan;
3. ***Policies and procedures*** to address all aspects of energy purchase, use, and disposal;

Continued

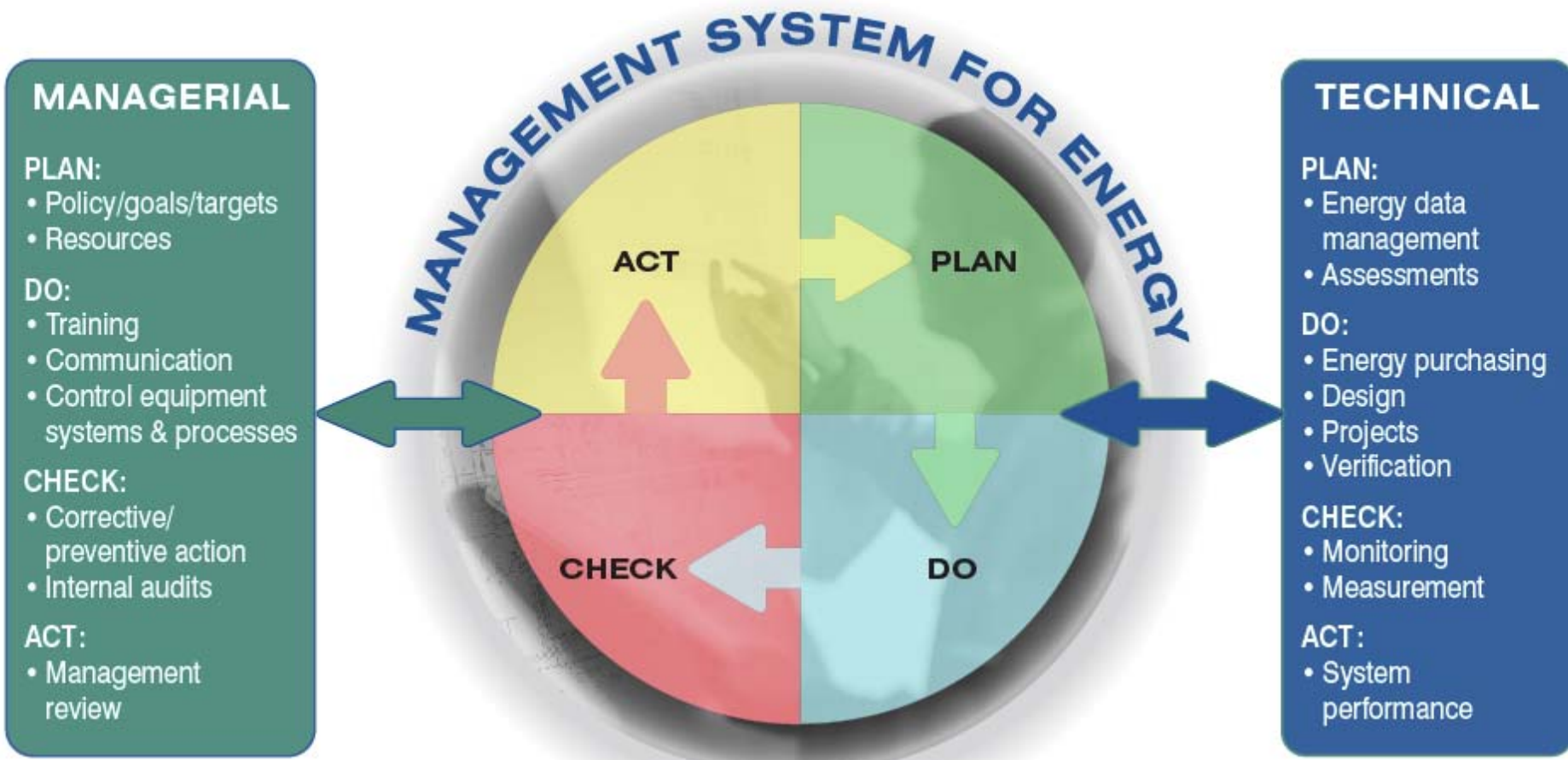


Components of an EnMS Standard

4. **Projects** to demonstrate continuous improvement in energy efficiency;
5. Creation of an **Energy Manual**, a living document that evolves over time as additional energy saving projects and policies are undertaken and documented;
6. Identification of **key performance indicators**, unique to the company, that are tracked to measure progress; and
7. **Periodic reporting** of progress to management based on these measurements



ANSI/ MSE 2000:2008



www.ansi.org



ISO 50001- Energy Management System

Scope (From the New Work Item Proposal)

Standardization in the field of energy management, including:

- energy supply,
- procurement practices for energy using equipment and systems,
- energy use, and
- any use-related disposal issues.

The standard will also address measurement of current energy usage, and implementation of a measurement system to document, report, and validate continuous improvement in the area of energy management.



ISO Project Committee 242

September 8-10, 2008, 1st PC 242 Meeting in
Arlington, VA

- 90 participants from 25 countries from all regions of the world, as well as UNIDO, which has liaison status
- Participating countries have existing activities on energy management and strong interest in developing a harmonized international standard
- Key decision to base standard on the common elements found in all of ISO's management system standards (e.g. 9001, 14001) to ensure maximum compatibility
- Two-year accelerated schedule to have ISO 50001 ready for publication by the end of 2010



ISO/PC 242 MEMBER COUNTRIES

PARTICIPATING (33) and Observing (6) COUNTRIES

- [Argentina \(IRAM\)](#)
- [Australia \(SA\)](#)
- [Barbados \(BNSI\)](#)
- [Belgium \(NBN \)](#)
- [Brazil \(ABNT\)](#)
- [Canada \(SCC\)](#)
- [Czech Republic \(CNI \)](#)
- [Chile \(INN\)](#)
- [China \(SAC\)](#)
- [Denmark \(DS\)](#)
- [Ecuador \(INEN \)](#)
- [Finland \(SFS\)](#)
- [France \(AFNOR\)](#)
- [Germany \(DIN\)](#)
- [Ireland \(NSAI\)](#)
- [Israel \(SII \)](#)
- [Italy \(UNI \)](#)
- [Japan \(JISC\)](#)
- [Kazakhstan \(KAZMEMST \)](#)
- [Korea, Republic of \(KATS\)](#)
- [Malaysia \(DSM \)](#)
- [Mauritius \(MSB \)](#)
- [Netherlands \(NEN\)](#)
- [Nigeria \(SON \)](#)
- [Pakistan \(PSQCA\)](#)
- [Poland \(PKN\)](#)
- [Portugal \(IPQ\)](#)
- [Saint Lucia \(SLBS\)](#)
- [Singapore \(SPRING SG\)](#)
- [South Africa \(SABS\)](#)
- [Spain \(AENOR\)](#)
- [Sweden \(SIS\)](#)
- [Switzerland \(SNV \)](#)
- [Thailand \(TISI\)](#)
- [Tunisia \(INNORPI\)](#)
- [Turkey \(TSE\)](#)
- [United Kingdom \(BSI\)](#)
- [USA \(ANSI\)](#)
- [Zimbabwe \(SAZ\)](#)



ISO/WD 50001, Energy Management

© ISO 2008 – All rights reserved

ISO PC 242 N 18Rev1

Date: 2008-9-12

ISO/WD 50001

ISO PC 242

Secretariat: ANSI/ABNT

Energy Management — —



January TAG Meeting

Objectives of the US TAG Meeting

- To review the Working Draft 2 comments submitted by the US TAG members
- To determine if the Working Draft should move to a Committee Draft document
- To develop the US position for the upcoming International Meeting and select the US TAG representatives for the International Meeting in March 2009
- To discuss US TAG administrative issues for the upcoming year such as, review of the 2009 calendar, procedure changes, etc.



2009 Schedule

| Timeframe | Anticipated Schedule |
|------------------|--|
| January 12, 2009 | Comments due on second working draft (WD 2) |
| March 9-12, 2009 | Second Project Committee 242 meeting (decision to move to Committee Draft stage) |
| April 15, 2009 | Committee Draft (CD) to Participating Countries for review |
| May 2009 | U.S. Technical Advisory Group Meeting |
| July 2009 | Committee Draft (CD) decision and comments |
| August 2009 | U.S. Technical Advisory Group Meeting |
| August 15, 2009 | Result of Committee Draft ballot sent to Participating Countries |
| October 2009 | Third Project Committee 242 meeting (decision to move to Draft International Standard (DIS) stage) |



ISO EnMS Standard and EE

- This standard will allow companies to become more competitive nationally and internationally.
 - Improved energy performance
 - Green Marketing
 - Customer demand
- CEE members can use this as an opportunity to market EE programs to their customers



EnMS and EE Program Managers

- New ISO Standard offers another avenue for interaction with customers on EE savings opportunities
- ISO standard offers annual EE savings opportunities – continual improvement
- Initial discussions can take place now, Standard will not be final until 2010
- Superior Energy Performance Program provides framework and support for manufacturers to achieve validated, continual energy intensity improvement
- Early action has early benefits for all



Use EnMS to your advantage

- Identify potential customers (already ISO compliant, “Green” Vision, customer demand, competitiveness opportunity)
- Build expertise in the standard and in specific customer segments, then offer technical assistance to achieve savings and ISO conformance
- Provide easy access to energy usage baseline information
- Use associations to drive success within an industry
- Leverage success of one project to drive future energy savings opportunities with each customer



Challenges ahead

- Inertia –ISO 9001 or ISO 14001 conformance offers an advantage
- Management needs to support this approach
- Baseline needs to be established, processes and controls developed
- For some customers this is a new way of managing and evaluating their business
- A cadre of energy management professionals is needed to provide technical assistance to customers



The Opportunity

Current Opportunity for CEE members

- A Subcommittee on Energy Management has been formed as part of CEE's Industrial Program Planning Committee.
- Interested members should contact Ted Jones, or Sergio Dias of the NW EE Alliance (subcommittee co-chair), if they would like to participate.



Contact Information

Roland Risser

Chairman U.S. TAG
Pacific Gas and Electric Company
415 973-8437
email: rjrb@pge.com

Aimee McKane

Vice- Chair U.S. TAG
Lawrence Berkeley National Laboratory
P.O. Box 790
Latham, NY 12110
518-782-7002
email: atmckane@lbl.gov

Deann Desai

Secretary US TAG
Georgia Institute of Technology
770-605-4474
email: deann.desai@gatech.edu