ISO 50001 & ENERGY STAR

Monthly Partner Web Conference
September 21, 2011

Call-in number: 866 299 3188
Access code: 202 343 9965

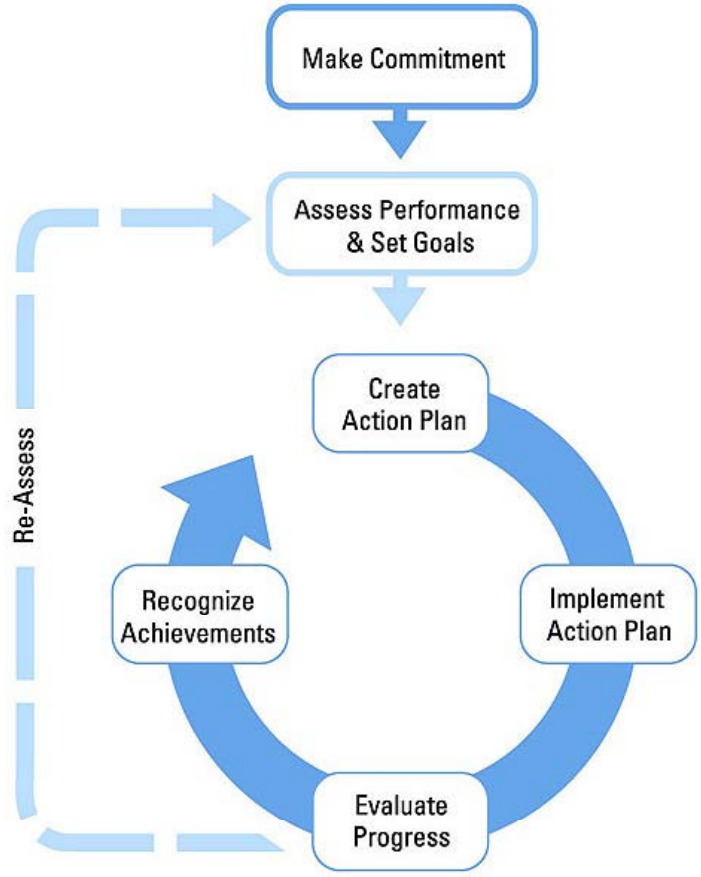
Host: Walt Tunnessen

EPA

Learn more at **energystar.gov**

About The Web Conferences

- Monthly
- Topics are structured on a strategic approach to energy management
- Help you continually improve energy performance
- Opportunity to share ideas with others
- Slides are a starting point for discussion



Web Conference Logistics

- Phones will be Muted

  To ask a question use # 6 to un-mute

  and * 6 – to mute

- Questions – use the chat window or ask question during the Q & A period.

- Presentation slides will be sent by email to all participants following the web conference.

Today's Web Conference

ISO 50001 & ENERGY STAR

Speakers:

- **Walt Tunnessen, US EPA**
- **Steve Schultz, 3M**
- Questions & Discussion
- Announcements

What is ISO 50001?

- International voluntary consensus standard.
- Established by the International Organization for Standardization
- Focused on energy management practices and procedures.
- Management Standard, similar to:
  - ISO 14001 – Environmental Management Systems
  - ISO 9000 – Quality Management Systems
- Establishes a broad set of criteria that “codifies” basic energy management elements.
- Intended to promotes continuous improvement of energy performance.

What ISO 50001 is not

- Does not establish specific levels of performance.
- Does not certify that a specific level of energy performance has been achieved.
- Does not require demonstrating continuous improvement of energy performance from a baseline.
- Does not establish criteria for specific energy procurement or design requirements (e.g. like LEED).

Why a management standard?

- Recognition of the importance of organizational energy practices.
- Interest in elevating energy management within corporate culture.
- Harmonizes requirements internationally.

Growth of energy management systems approaches

2000 — British Standards Institute – Energy Management Standard

MSE series developed by Georgia Tech (GT) and "standardized" by ANSI . Updated in 2008

2003 — 

ENERGY STAR Guidelines for Energy Management

2006 — National Energy Management Standards in Denmark, Sweden, and Ireland

2009 — European Energy Management Standard

ISO

Development Process

- US DOE partnered with GT and ANSI to propose creation of standard to ISO.
- WG 242 formed in 2009 and jointly chaired by Brazil.
  - GT serves as the secretariat
- Technical Advisory Groups (TAGs) created by participating countries
- Drafts developed, reviewed and revised.
- Meetings held in US, Brazil, UK, China
- Standard released in June 2011
- WG 242 becomes “Technical Committee” (TC) 242

Participating Countries

Secretariat:
Brazil (ABNT)
USA (ANSI)
Participating Countries
Argentina (IRAM)
Australia (SA)
Barbados (BNSI)
Canada (SCC)
Chile (INN)
China (SAC)
Colombia (ICONTEC)
Denmark (DS)
Ecuador (INEN)
Egypt (EOS)
Finland (SFS)
France (AFNOR)
Germany (DIN)
India (BIS)
Iran, Islamic Republic of (ISIRI)
Ireland (NSAI)
Israel (SII)
Italy (UNI)
Japan (JISC)
Kenya (KEBS)
Korea, Republic of (KATS)
Malaysia (DSM)
Mauritius (MSB)
Mexico (DGN)
Morocco (IMANOR)
Netherlands (NEN)
Nigeria (SON)
Norway (SN)
Pakistan (PSQCA)
Peru (INDECOPI)
Poland (PKN)
Portugal (IPQ)
Russian Federation (GOST R)
Saint Lucia (SLBS)
Singapore (SPRING SG)
South Africa (SABS)
Spain (AENOR)
Sweden (SIS)
Thailand (TISI)
Tunisia (INNORPI)
Turkey (TSE)
United Kingdom (BSI)
Zimbabwe (SAZ)
Observing Countries
Belgium (NBN)
Bulgaria (BDS)
Costa Rica (INTECO)
Czech Republic (UNMZ)
Hong Kong, China (ITCHKSAR)
Iceland (IST)
Indonesia (BSN)
Romania (ASRO)
Serbia (ISS)
Slovakia (SUTN)
Sri Lanka (SLSI)
Switzerland (SNV)
Tajikistan (TJKSTN)
Trinidad and Tobago (TTBS)

Countries currently participating in TC 242

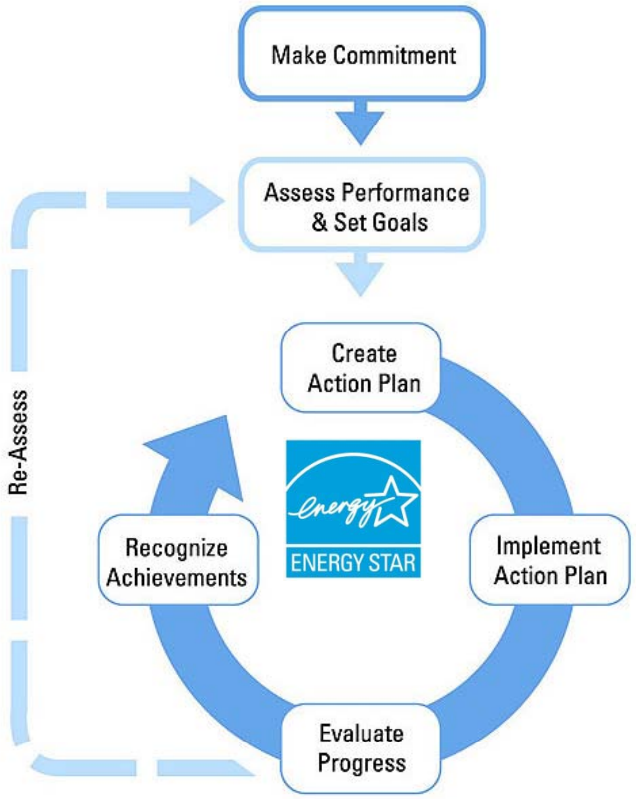
ISO 50001 emphasizes

- Top management support
- Staffing & management responsibilities
- Formal energy policy
- Planning processes
- Defined Energy Baselines & Targets
- Defined “Energy Performance Indicators”
- Consideration of energy impacts in procurement & design criteria.

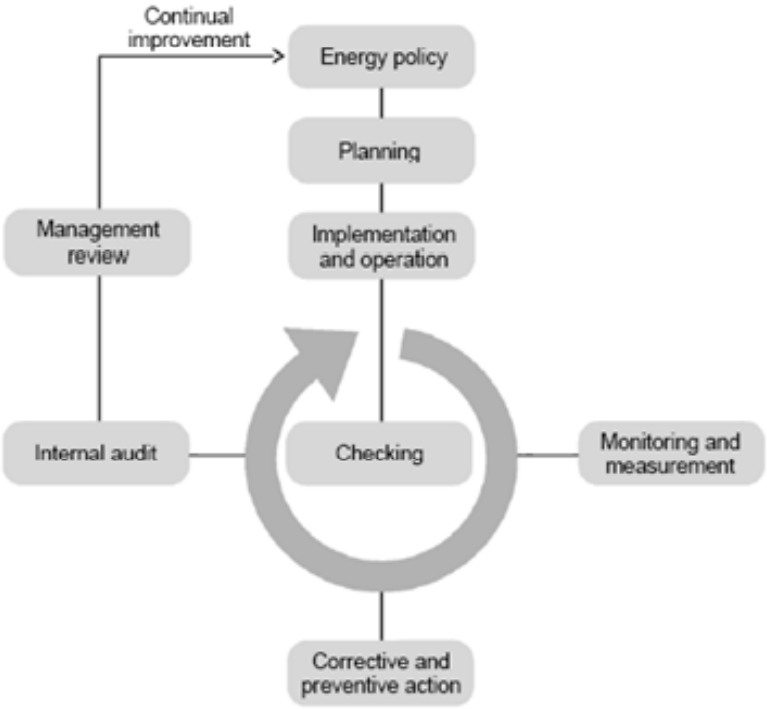
- Documentation
- Internal controls & reviews
- Internal reporting
- Training & awareness of standard's requirements

ENERGY STAR & ISO 50001

Guidelines for Energy Management



ISO 50001



EPA

Similarities

Concept	ISO 50001	ES Guidelines	Relevant ES Tool
Continuous Improvement	Introduction 1. Scope	Step 1 – Commit to Continuous Improvement	- ES Partnership
Senior Management Support	4.2 Management Responsibility 4.2.1. Top Management	Step 1 – Commit to Continuous Improvement	- Partnership Letter, - Elevating Energy Management - Energy Strategy for Road Ahead
Energy Director	4.2.2 Management Representative	Step 1.1 – Energy Director	- Matrixes - Guidelines text, - Sample job description -Teaming Up to Save Energy
Energy Team	3.10 energy management team (definition) 4.2.2 (b) Management representative	Step 1.2 – Energy Team	-Teaming Up to Save Energy -Matrix criteria
Energy Policy	4.3 Energy Policy	Step 1.3 – Energy Policy	- Example policies - ES Partnership Letter
Planning	4.4 Energy Planning 4.4.1 General A.4	Step 2 – Assess Performance	Guidelines text
Assessments	4.4 Energy Planning	Step 2.1 – 2.5	Energy Guides, Building Upgrade Manual Benchmarking tools (EPIs, PM),
Site energy profile	4.4.3 Energy Review	Step 2.1 Collect Data Step 2.4 Analyze data, Step 2.5 Technical Assessments	Energy Guides, Building Upgrade Manual Benchmarking tools (EPIs, PM), Matrixes Challenge for Industry Guidance
Energy Baseline	4.4.4 Energy baseline	Step 2.2 Establish Baseline	Portfolio Manager, ETT, EPIs, ES Challenge for Industry
Energy Use Metrics	4.4.5 Energy Performance Indicators	Step 2.3 Benchmark	Portfolio Manager, EPIs, ES Scales, Challenge for Industry
Benchmarking	4.4.5 Energy Performance Indicators A.4.1	Step 2.3 Benchmark	Portfolio Manager, EPIs, ES Scales, Challenge for Industry
Goal setting	4.4.6 Objective, targets and action plans	Step 3 – Set Goals	Guidelines text, partner examples

Similarities

Concept	ISO 50001	ES Guidelines	Relevant ES Tool
Action Plans – broadly	4.4.6 Energy Objectives, energy targets, and energy management action plans 4.5 Implementation	Step 4 Action Plan	Energy Guides, Building Upgrade Manual
Action plans – responsibility for implementation	4.4.6 Energy Objectives, energy targets, and energy management action plans	Step 4.2 – Determine Roles and Resources	Guidelines text
Implementation	4.5 Implementation and Operation	Step 5 Implement Action Plan	Guidelines text Communication tools Networking Training PM, EPIs, ETT
Training	4.5.2 Competence, training, and awareness	Step 5.3 – Build capacity	Trainings, Networking,
Employee Awareness	4.5.2 Competence, training, and awareness	Step 5.1 Communication Plan Step 5.2 Raise awareness	Challenge tool kit Various ES communication resources
Communicating performance	4.5.3 Communication	Step 5.2 – Raise awareness Step 6 - Recognizes achievements	Reporting functions in PM, ES Labels & Scores, SEPs, ETT charts
Energy efficient design	4.5.6 Design	Not specifically addressed	Target Finder Energy Guides
EE Procurement of equipment etc.	4.5.7 Procurement of energy services, products, and energy	Mixed in various places	Procurement policy examples, Links to ES office products SPP directory
Evaluation	4.6 Checking	Step 6 Evaluate Progress	Benchmarking tools.
Monitoring	4.6.1 Monitoring, measurement and analysis	Step 6.1 – Measure Results Step 6.2 – Review Action Plan	Energy Tracking Plan template PE Guides for Certification, Challenge for Industry
Internal Audits of management practices	4.6.3 Internal Audits of EnMS	Step 6 – Review Action plan	Matrixes
Management Review	4.7. General Requirements	Step 6 – Evaluate Progress (broadly)	

Differences

	ENERGY STAR	ISO 50001
Certifies energy performance	Yes (Label)	No
Certifies management practices	No	Yes
Offers energy management tools	Yes	No
Requires documentation of management processes	No	Yes
Provides guidance on energy management	Yes	No
Requires staffing at site seeking certification	No	Yes
Requires top management to be engaged with energy management	Strongly encouraged	Yes
Cost for certification	Free to low cost	$$$ (15,000 & up)*

* = Based on early estimates. Cost will depend on size of site. Does not include staff cost.

Other considerations…

- ISO 50001 requires defining a scope for the site that will be certified.
  - Can be a building, or a company, or a process.

- ISO 50001 gives organizations the latitude to defines certain elements, such as:
  - Which EPIs
  - Goals, objectives, time frames etc.
  - What are significant energy uses
  - Method for measuring improvement
  - Criteria for determining if EMS is effective

- You will need to be able to justify and document your decisions if vou seek certification.

Certification

ISO Certification requires having an accredited "certification body" certify conformity to the Standard.

- ANAB – is expected to finalize accreditation requirements in October 2011.
- Lead Auditors – will be certified by RAB-QSA.
  - Qualification exam is under development
  - Qualification may /or may not be required.

So are they certified?

Schneider Electric's head office is the first building in the world to earn the new ISO 50001 certification

Wednesday, 22 June 2011

London, United Kingdom - In a world first, Schneider Electric's head office (known has the Hive1) has been certified as complying with the new ISO 50001 standard for energy management systems.

Schneider Electric is pursuing its commitment to continuously improving the energy efficiency of its buildings, reducing their environmental footprint and enhancing user comfort.

"This latest certification recognizes our commitment to energy efficiency and our expertise in this field," says Frédéric Abbal, President of Schneider Electric France. "More than ever, we are aiming for the highest standards in energy management for both our customers' buildings and our own. The Hive provides valuable feedback that we can leverage to develop efficient, operational energy performance solutions that create value for our customers."

The new ISO 50001 standard defines the requirements for the development, implementation, maintenance and improvement of energy management systems. It is designed to help organizations to continuously improve the energy performance of commercial and industrial buildings, optimize their use and reduce their operating costs. It was officially released on the 15 June 2011.

To meet the new standard's requirements, Schneider Electric began adapting its energy management system in late 2010, based on the various drafts. Its compliance with ISO 50001 has been recognized by AFNOR Certification2.

"Last year," continues Mr. Abbal, "the Hive was the first building in France to be certified to HQE Exploitation 14001 and NF EN 16001 standards, officially recognizing the assertive efforts we have made since we moved to site in January 2009. Today, we have reached a new milestone."

TAIPEI 台北時報 TIMES Business

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AUO becomes first manufacturer to obtain ISO-50001

By Kevin Chen / Staff Reporter

AU Optronics Corp (AUO, 友達光電), the nation's No. 2 LCD panel maker, said yesterday its 8.5--generation factory in the Central Taiwan Science Park (中部科學園區) and a TV module plant in Suzhou, China, had passed the ISO 50001 standard for energy management.

This makes AUO the first manufacturer in the world to obtain ISO 50001 certification, which aims to help companies enhance energy efficiency and make less of an impact on the environment, the company said in a statement.

The ISO 50001 announcement came after AUO on Wednesday secured government [illegible] in Longfei Optoelectronics Co's (龍飛光電) 8.5G

[illegible] to receive ISO 50001 certification illustrates the [illegible] gone to adopt energy--saving green practices, [illegible]ally." AUO global manufacturing division vice

PR Newswire

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Dahanu Thermal Power Station of Reliance Infrastructure Ltd. is the First Company in the World Certified to ISO 50001:2011

PARIS and MUMBAI, India, June 29, 2011 /PRNewswire/ -- Bureau Veritas Certification is pleased to announce that it has certified the Dahanu Thermal Power Station of Reliance Infrastructure Ltd. to ISO 50001:2011. Located in India, this is the first company and power plant in the world to be certified to ISO 50001:2011, the new standard for Energy Management developed by ISO (International Organization for Standardization), and published officially on June 15th 2011.

Part of Reliance Infrastructure Ltd., India's largest private sector enterprise in power utility, the Dahanu Thermal Power Station has a production capacity of 2 x 250 MW, and uses coal as its primary fuel. The plant began operations in 1996 and is the landmark facility of Reliance Infrastructure Ltd. in terms of energy conservation. Among the benefits of the implementation of the standard, the most remarkable achievements are:

- A complete review of the consumption of all major auxiliaries, equipment areas and buildings
- Improvement in the monitoring of the energy consumption for all operations
- The definition of energy use and consumption limits for the most important energy operations and the implementation of deviation controls for energy and maintenance operations

In addition to operational improvement, Dahanu Thermal Power Station has conducted a series of targeted investments since March 2010. Estimated savings will account for about 98.4 million Indian Rupees yearly after an investment of 18.5 million Indian Rupees, and an average breakeven time of 27 months is expected.

Note: Accreditation requirements for certifiers will <u>not</u> finalized internationaly until late October 2011 at the earliest…

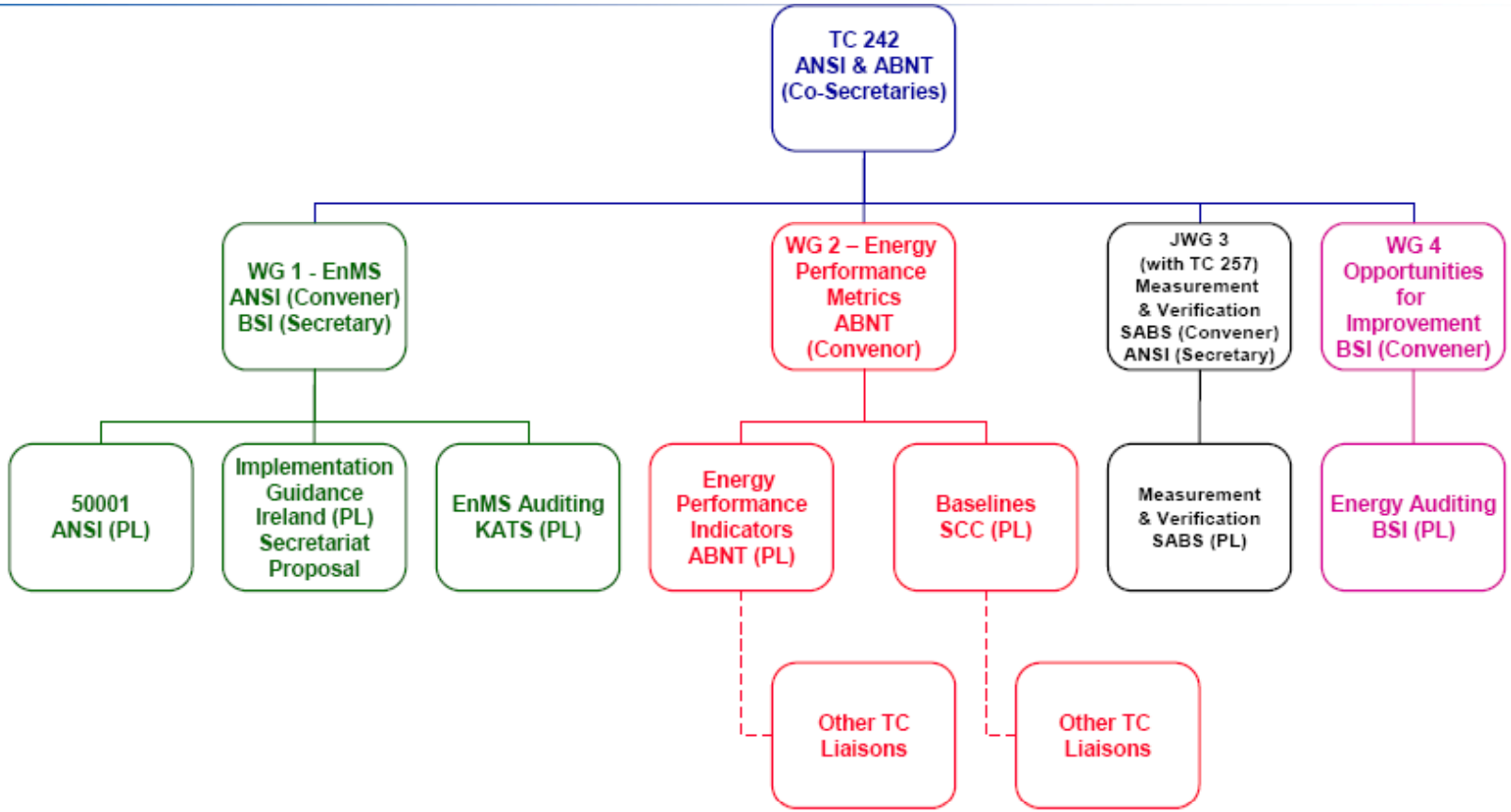
ISO 50001 Pilot Sites

DOE is providing some funding for pilot sites to go through ISO certification:

- For industrial sites, done on a state / regional basis:
  - http://www1.eere.energy.gov/industry/energymanagementdemonstrations/contacts.html
- For commercial buildings, done through the GSEP program:
  - http://www.cleanenergyministerial.org/GSEP/pilot.html

What next: New Frontiers

Proposed New Committees and Work Areas under the ISO 50001 Series



3M's Experience with Management Systems for Energy

Steven Schultz
Corporate Energy Manager, 3M

One Strong Brand, Complemented by Many Strategic Brands

- 3M named one of the Best 100 Global Brands by strategic brand consultancy, Interbrand in 2010
- Proud of the household names we have created with our market leading strategic brands
- Our strategic brands play an integral role in strengthening the 3M brand and allowing us to deliver tangible results that enable customer success

At 3M, we continuously build on each other's ideas…

…to innovate unexpected solutions and make progress possible

Acknowledged by Opinion Formers

harris INTERACTIVE®

Most Visible
3M Ranks 3rd

REPUTATION INSTITUTE Forbes

Most Reputable Companies
3M Ranks 4th

GREAT PLACE TO WORK®

European Best
Muti-national Workplaces
3M Ranks 5th

FORTUNE

Most Admired Companies
3M Ranks 15th

BARRON'S

Top Public Companies
3M Ranks 7th

booz&co.

Most Innovative Companies
3M Ranks 3rd

EPA

7 time ENERGY STAR® Sustained
Excellence Award Winner

HayGroup

Among Best Companies
for Leadership

3M Global Operations

Energy Efficiency as a 3M Competitive Advantage

3M Energy Management Program

Research and Development	Engineering	Existing Operations	Sourcing	Environmental Operations	Suppliers	Customers
New Products and Processes	New Facilities and Equipment Support Implementation of Energy Projects	Plant Energy Teams	Procurement of Energy	Cooperate and Leverage Energy Related Environmental Aspects	Reduce Imbedded Energy Costs, Environmental Impacts, and Future Risks	Add Value to Customer Relationships

3M

Environmental, Health and Safety Policy

Corporate Energy Policy

Applies To	This policy applies to all 3M operations.
Introduction	The objectives of this policy are to improve energy consumption efficiency, reduce cost, optimize capital investment for energy efficiency, reduce environmental and greenhouse gas emissions, and conserve natural resources.
Policy Statement	3M will promote the efficient use of energy to produce and deliver products and services to its customers.
Additional Elements	**Policy Guidelines:** The following steps should be pursued to support the policy: • Improve energy efficiency by establishing and implementing effective energy management programs worldwide that support manufacturing capabilities while providing a safe and comfortable work environment. • Emphasize energy efficiency as a factor in product development and in process and facility design. • Secure adequate and reliable energy supplies at the most advantageous rates and implement contingency plans to protect operations from energy supply interruptions. • Encourage continuous energy conservation by employees in their work and personal activities. • Drive further development of internal and external energy efficient and innovative technologies. • Cooperate with governmental agencies and utility companies on energy programs. • Support national governmental energy efficiency policies.
For Further Information	Contact 3M Energy Management, St. Paul, Minnesota, 651-737-4206.
Approved By	Environmental, Health and Safety Committee

3M Energy Management
Building 260-06-N-07
St. Paul, MN 55144

Please recycle.

Issued: 08/19/1991
Revised: 12/03/2004

3M

Management System for Energy

- Projects are only a part of an effective energy management program
- ENERGY STAR Guidelines for Energy Management
- 2000 and 2008 versions of ANSI Standard
- 3M incorporated into requirements for plant energy teams
- Plant energy teams are measured on compliance. Score is a factor in determining level of plant energy award.

Two 3M manufacturing Plants Participating

- 3M Cordova, IL (Midwest Pilot)
  - *Manufactures specialty adhesives and chemicals*
  - *560 acres, 550,000 square feet*
  - *4th largest energy using facility at 3M*
- 3M Brockville, Ontario, Canada (Global Superior Energy Performance Pilot)
  - *Manufactures pressure sensitive tapes*
  - *200,000 square feet*
  - *Smaller energy footprint, but strong interest in efficiency*

Why Pilot ISO 50001?

- Learn more about ISO 50001, the process of becoming certified, and the resources necessary
- Employ a more rigorous approach to systematically save energy
- Benefit from external resources provided to assist
- Further imbed energy management into plant operations
- Determine if the effort is worthwhile

Our Experience So Far:

- Participation in a pilot with cohorts helped keep us on track and on schedule
- Previous experience with ISO 9001 and 14001 was an immediate benefit
- Additional resources were needed
- Plant operations are becoming more engaged
- Consultants have been very helpful

Seventh Consecutive Year !

Innovation

Questions & Discussion

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Upcoming Web Conferences

October 5 – How to apply for the 2012 ENERGY STAR Partner of Year Award

October 20 – Energy & GHG Management

November 17 - Energy Management Financing Strategies

Register for Partner Meetings online at: energystar.webex.com/meetings

- Thank you