Strategic Energy Management:

A Roadmap for Achieving Continual Improvements in Energy Performance

Monday, April 12th, 2010

John Wallner
Northwest Energy Efficiency Alliance

Dresden Skees-Gregory
Sustainable Environmental Services

Strategic Energy Management

Agenda:

- John Wallner & Dresden Skees-Gregory background
- Strategic Energy Management Systems: Why & What
- ISO 50001
- Certified Energy Practitioners
- NW Energy Management Demo pilot
- Moving Forward

John’s Background

- NEEA Senior Manager of Industrial Sector, NEEA Project Manager of NW Energy Management Demo pilot.
- BM in Finance, MBA in Finance.
- 30-year background in high-tech manufacturing with such companies as Hewlett-Packard, Apple Computer, Tektronix, and Benchmark Electronics. Formerly Adjunct in Operations Management at Oregon Health and Science University

Dresden's Background

- Contracted Project Manager to NEEA for Northwest Energy Management Demo Pilot – DISCUSSED LATER
- BS in Environmental Science, MS in Environmental Science & Engineering, PhD student in Environmental Science & Management.
- Registered EMS Internal Auditor
- Worked with 2 high tech companies to achieve ISO 14001 certification. Assisted 6 companies with continuous energy improvement with NEEA support.

Why Strategic Energy Management

- **Bolsters** a competitive advantage by cutting costs
- **Tackles** complex energy issues
- **Ensures** *continuing, persistent* focus on energy efficiency and cost control
- **Enables** consistent, persistent, organized, integrated, and embedded energy management

Management System (EnMS)?

- It's a **holistic, embedded framework** to:
  - understand,
  - control, and
  - continuously improve energy use.
- Use an EnMS to systematically integrate organizational procedures, priorities and accountabilities to create reliable and persistent energy savings, and ensure continuous energy improvement.

ISO 50001 – Global EnMS, Why do it?

nables **systematic** achievement of **persistent, continual improvement in energy performance**.

Potential impacts:

- Could influence up to 60% of the world's energy use across many economic sectors

Uptake of ISO 50001 will be driven by :

- Customer demands
- Parent company requirements
- Energy cost reduction initiatives
- Corporate sustainability programs
- Future national cap and trade programs; carbon or energy taxes; market value of "green manufacturing"
- International climate agreements

Status of ISO 50001

- Under development by United States and Brazil, with United Kingdom and China input
- Draft International Standard available in April 2010
- Ready for publication by mid 2011

ISO 50001 – Global EnMS, What is it?

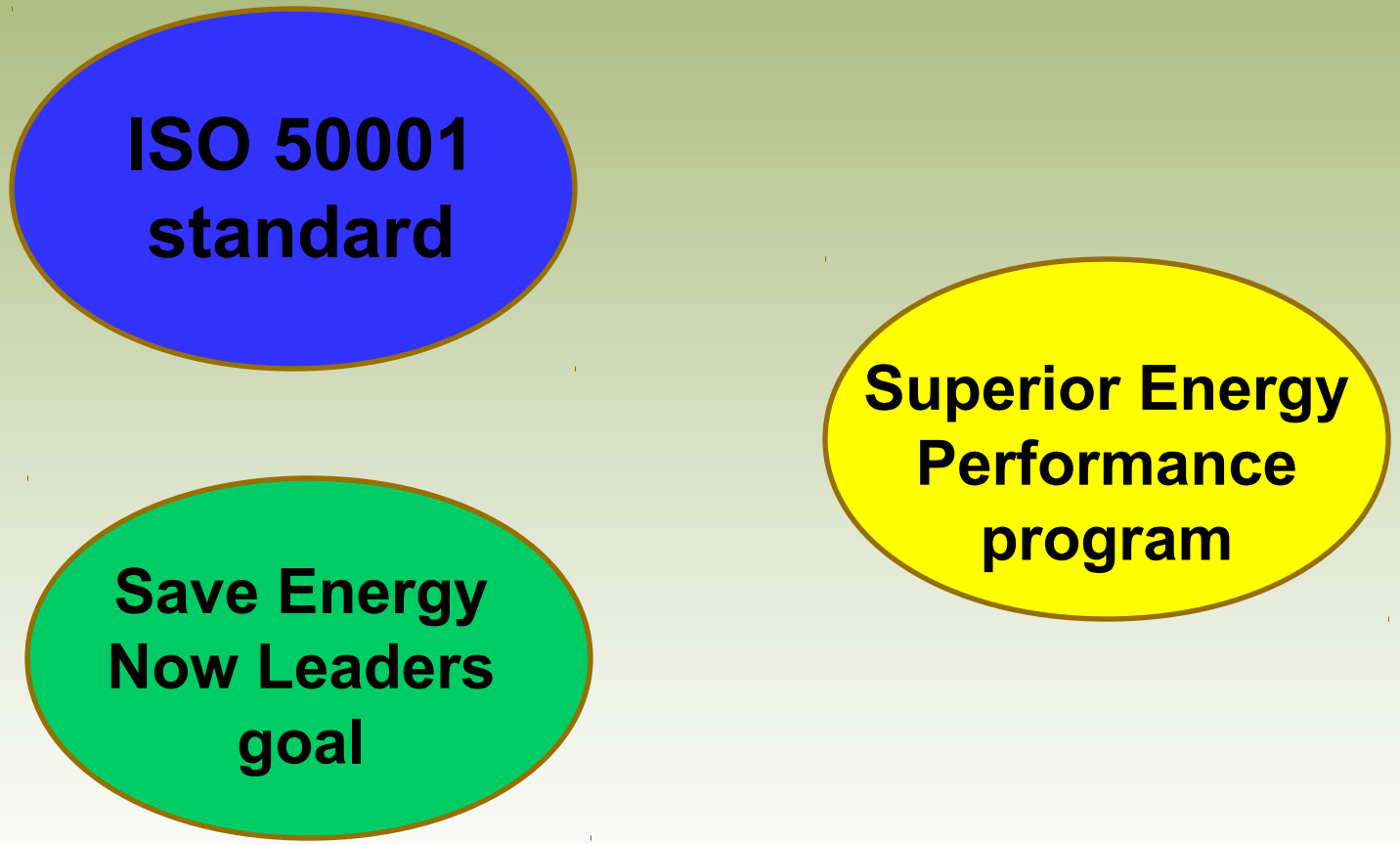
- **Establishes management processes on energy supply and consumption.**
- **Includes key elements developed over 60 years to deal with holes/problems that commonly arise in any business system:**
  - Policy & top management support
  - Defined roles and responsibilities
  - Energy data tracking & KPI analysis
  - Energy Assessments
  - Establishment, mgmt. & tracking of energy reduction programs
  - Control of energy using processes, equipment, etc.
  - Documentation & records control
  - Internal auditing of processes & program
  - Corrective & preventative actions

ISO International Organization for Standardization

ISO 50001 – Global EnMS, What is it?

- **Does not prescribe specific energy goals**.
- Designed to be used independently, yet can be aligned or integrated with other management systems (e.g., ISO 90001 and ISO 140001).
- Applicable to all organizations that use energy: manufacturing, assembly, commercial.

Superior Energy Performance – A 3 Layered System



Three types of Certified Practitioners will assist companies through the layers.

Certified Practitioners

ANSI-accredited professional certification programs are planned for three types of Certified Practitioners:

- **Energy Management System Practitioner:** Help plants implement the ISO 50001 energy management standard.

- **Systems Assessment Practitioner**: Perform assessments using ASME system assessment standards: Compressed Air, Pumping, Steam, Process Heating.

- **SEP Validation Specialist**: assess a manufacturing plant's conformance to the (1) measurement and verification protocols and (2) energy intensity performance improvement levels defined by the SEP program.

http://www.superiorenergyperformance.net/certified_practitioners.html

Practitioner Certification

Program is still under development:

- Training(?)
- Exam
- Field Experience (?)
- Continuing Education

USDOE seeking administrator for certifications.

- Energy Management Practitioner training to start in Nov. 2011
- Energy Systems Assessment Practitioner and SEP Validation Specialist training to occur in 2011.

Northwest Energy Management Demo Pilot

USDOE and NEEA are hosting a demonstration pilot in the Northwest.

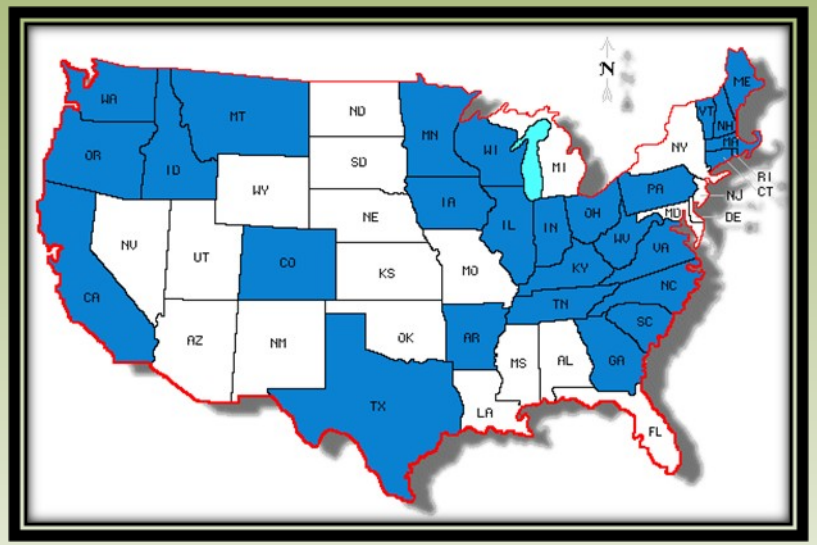
- **Pilot is testing:**
  - ANSI MSE 2008 & ISO 50001
  - USDOE's Save Energy Now LEADERS program
  - USDOE's Superior Energy Performance program
- **Program involves:**
  - Four companies
  - Workshops and webinars
  - Assistance with implementation by "Field Advisor" consultants.
- www.nwemdemo.org

Future EnMS Demonstration Projects

DOE's Industrial Technologies Program is conducting State/Regional Energy Management Demonstration Projects.

Strategic Energy Management Demonstration Goals:

- **Provide *Save Energy Now* LEADER Companies with a roadmap** to achieve ambitious goals to reduce industrial energy intensity.
- **Test the elements of Superior Energy Performance**.
- **Build energy management expertise** at the regional, state, and plant level by showcasing lessons learned and best practices.
- **Broaden energy savings** throughout the nation.



Anticipated Roll Out Dates

- **Oct. 2009:** Northwest region initiated energy management demonstration projects
- **Spring/Summer 2010:** Southeast, Midwest, Mid-Atlantic, Northeast regions, Pennsylvania, South Carolina, Wisconsin
- **Summer/Fall 2010:** California, Colorado
- **Fall 2011:** Texas (2nd round)

Recap of Major Dates

- **May 2008:** USDOE & Texas Industries for the Future start ANSI MSE, Save Energy Now and Superior Energy Performance pilot.
- **Oct. 2009:** USDOE and NEEA host Northwest pilot of ISO 50001, Save Energy Now and Superior Energy Performance programs.
- **Apr. 2010:** Draft ISO 50001 Strategic Energy Management Standard published.
- **Oct. 2010:** Northwest pilot companies apply for ISO certification and Superior Energy Performance recognition.
- **June 2011:** ISO 50001 Strategic Energy Management Standard published globally; replaces U.S.'s ANSI standard.

For More Information:

Sustainable Environmental Services Corp.
www.nwsustainable.net

Northwest Energy Management Demo Pilot:
www.nwemdemo.org

Northwest Energy Efficiency Alliance (NEEA) Industrial Programs:
http://www.nwalliance.org/ourwork/industrial.aspx

ISO 50001:
http://www.iso.org/iso/energy_management_system_standard

Buy DIS 50001:
http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=51297

Save Energy Now program:
http://www1.eere.energy.gov/industry/saveenergynow/index.html

Superior Energy Performance program:
www.superiorenergyperformance.net

Certified Energy Practitioners:
http://www.superiorenergyperformance.net/certified_practitioners.html

USDOE Energy Management Demonstration Pilots:
http://www1.eere.energy.gov/industry/energymanagementdemonstrations/