



Achieving Superior Energy Performance in US Manufacturing

May 13, 2009

Superior Energy Performance Strategy

- Foster an organizational culture of **continuous improvement** in energy efficiency in U.S. manufacturing facilities
- Develop a **transparent** system to validate energy intensity improvements and management practices (conformance with ISO 50001)
- Create a **verified record** of energy source fuel savings and carbon reductions with potential value in national and international markets



Benefits of ANSI-accredited SEP Certification to Manufacturing Plants

- Establishes systematic framework to achieve continuous improvement
 - MSE 2008 and ISO 50001 energy management and ASME system assessment standards
 - Tools and resources to assist implementation and validation of energy performance improvement
- Certified plants receive recognition from:
 - Public – recognized leader in sustainable use of energy resources (local and financial community)
 - Supply chain -- customer gives preferred supplier status
- External financial incentives
 - receive energy efficiency credits from electric utility & others
 - receive carbon credits – state, region and national

U.S. Council for Energy-Efficient Manufacturing

- Seeks to improve the energy intensity of U.S. manufacturing through a series of initiatives.
- Champion of U.S. industry in implementing and achieving national energy efficiency policy goals.
- Guides development of the **Superior Energy Performance**



National Institute of Standards and Technology



Superior Energy Performance Supports and Builds the Industrial Energy Efficiency Market with ITP partners

Implementation of an Energy Management System and Independent validation of energy intensity improvements can provide benefits to:

Utilities

- Empowers a plant-wide, systems-oriented approach
- Helps justify industrial energy efficiency program investments, including permanent operational changes, to public utility commission

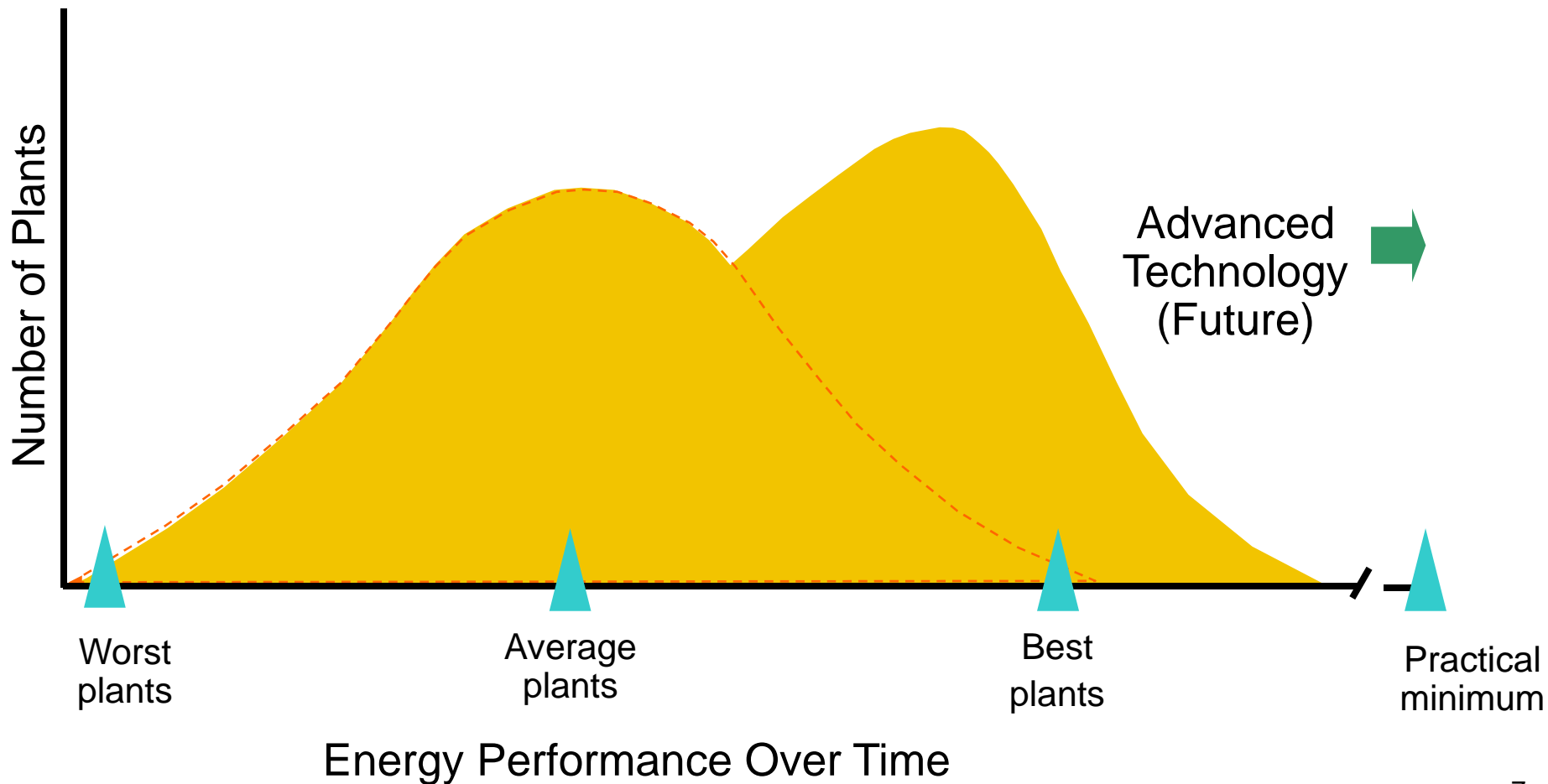
ESCOs

- Builds greater credibility with industrial customers and a stronger business case for providing third-party energy efficiency services and off-balance sheet capital investments

Supply Chains

- Provides a program for major OEMs and retailers to request their suppliers to meet the program requirements

Moving All Manufacturing Plants Toward a Higher Level of Energy Performance



Superior Energy Performance Design

- The 3-tiered program accommodates:
 - Maturity of plant's energy management program
 - Level of external validation desired
 - Business climate/cycle

PARTICIPANT
Self-declaration

PARTNER
*Third party
remote verification*

CERTIFIED PARTNER
*ANSI-accredited
certification*



Superior Energy Performance Design

PARTICIPANT

- Meet* energy management system ISO 50001 and additional SEP program requirements, including: 1) identify key energy uses, 2) prioritize systems for assessment, and 3) systematically identify opportunities
- Meet plant targets for energy intensity improvement
- Conduct internal conformance audit

PARTNER

- Meet Participant requirements
- Participates in remote review by Certified SEP Validation Specialist
- Measure and verify energy intensity performance improvement

CERTIFIED PARTNER

- Meet Participant requirements
- Get certified by ANSI-accredited third party with on-site review by Certified SEP Validation Specialist
- Measure and verify energy intensity performance improvement

*For entry period, candidate plants can *commit* to meeting these requirements and targets.

SILVER

GOLD

PLATINUM

Performance Levels based on:

- Validated energy intensity improvements over 3 years
- Implemented Best Energy Management Practices

SEP Development Status (May 2009)

Overall

- Developed Superior Energy Performance program strategy with SEP steering committee (now US Council for Energy Efficient Manufacturing)
- Established pilot program with five Texas plants; held three trainings
- Established US leadership in ISO 50001 standard development

Energy Management Standard

- Revised ANSI Management System for Energy (2008)
- Developed training and coaching materials for five pilot plants on MSE 2008
- Formed US/ANSI Technical Advisory Group; participated in first and second ISO PC 242 meetings to move toward ISO 50001 Committee Draft

System Assessment Standards

- Formed four ASME technical committees to develop standards
- Completed four draft ASME standards (pump, steam, process heating and compressed air) and supporting guidance
- Field tested standards and revising standards based on industry feedback

Measurement & Verification Protocol

- Produced draft measurement and verification (M&V) protocol to baseline and measure energy intensity performance improvement

SEP Planned Infrastructure

Standards & Protocols



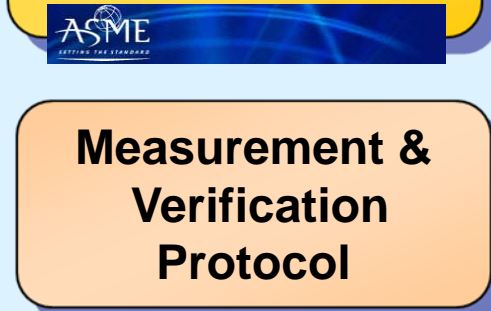
Energy Management Standard

ISO International Organization for Standardization



System Assessment Standards

ISO International Organization for Standardization



Measurement & Verification Protocol

ASME SETTING THE STANDARDS

SEP Administrator (TBD)

ANSI-accredited Certifying Bodies (TBD)

Certifying Organizations for Professionals (TBD)

Energy Management Practitioners

System Assessment Practitioners

Certified SEP Program Validators



Participating SEP program Manufacturing Plants

Major Milestones: 2010-2013

- **Sept. 2009:** request application from five Texas plants
- **October 2009:** First plant applies to SEP program
- **Nov. 2009:** Complete first plant on-site audit and review of conformance to SEP program requirements
- **Jan. 2010:** First plant ANSI-certified to Superior Energy Performance
- **June 2010:** First (five) plants certified through ANSI-accredited Certifying Body
- **Nov 2010:** Begin training Certified Practitioners in energy management and SEP validation specialists through ANSI-accredited professional certifiers
- **March 2011:** Begin training Certified Practitioners in four system areas through ANSI-accredited professional certifiers
- **March 2011:** ISO 50001 Energy Management Standard published; replaces ANSI standard
- **June 2011:** National launch of Superior Energy Performance Program
- **June 2013:** SEP program self-sustaining on program fees



Thank You!

For More Information

www.superiorenergyperformance.net



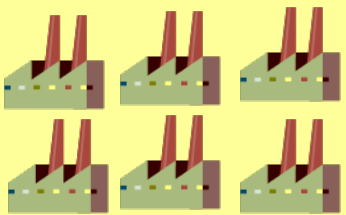
BACK UP SLIDES

Save Energy Now LEADERs and Superior Energy Performance Drive Toward Energy Intensity Improvements

Corporation



- Tools, training, and technologies
- Energy assessments
- Enhanced technical assistance
- Access to ITP RD&D



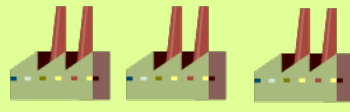
Utilities and States

- Incentives
- Certified Practitioners

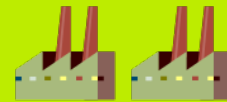
Superior Energy Performance Program

- ISO 50001 energy management standard
- Energy intensity baseline and improvement measurement
- System assessment standards
- Independently verified energy intensity improvement (only Partners and Certified Partners)

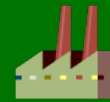
SEP Participant Plants



SEP Partner Plants



SEP-Certified Partner Plants



Performance Levels for Partner and Certified Partners

In the Partner and Certified Partner categories of the SEP Program, plants may qualify for different levels of performance.*

		Performance Levels			
	Performance Characteristics	Basic	Silver	Gold	Platinum
EI Pathway	Energy Intensity Improvement	Meets 3% EI improvement threshold over the last 3 years	Meets 5% EI improvement threshold over the last 3 years	Meets 7.5% EI improvement threshold over the last 3 years	Meets 10% EI improvement threshold over the last 3 years
	Energy Intensity Improvement	Demonstrates an EI improvement of 15% or more over the last 10 years	In addition to basic, meets 3% EI improvement threshold over the last 3 years	In addition to basic, meets 4% EI improvement threshold over the last 3 years	In addition to basic, meets 5% EI improvement threshold over the last 3 years
Mature Energy Pathway	Score on Best Energy Management Practices**	Meets a score of at least x out of 100 total points for Best Energy Management Practices	Meets a score of at least x out of 100 total points for Best Energy Management Practices	Meets a score of at least y out of 100 total points for Best Energy Management Practices	Meets a score of at least z out of 100 total points for Best Energy Management Practices

*All plants must conform with the Energy Management Standard and SEP program requirements.

**The scores for silver, gold and platinum on the Best Energy Management Practices Scorecard are to be defined by the CSWG. Best Energy Management Practices include both technical and management aspects. $X < Y < Z$.