

**Designing a Framework for
Achieving Superior Energy Performance in US Manufacturing Plants
PRELIMINARY CONCEPT PROPOSAL
For Industry Review and Comment**

3/1/07

Who's involved?

- (1) This preliminary concept has been developed by industry representatives, US Department of Energy's Industrial Technologies Program (DOE/ITP), US Environmental Protection Agency's ENERGY STAR Program for Industry (EPA Industry), NIST Manufacturing Extension Partnership (MEP), Texas Industries of the Future (TX IOF), and the American National Standards Institute (ANSI).

What is the "Framework for Achieving Superior Energy Performance in US Manufacturing Plants?"

- (2) The purpose of the Framework is to promote greater energy efficiency in US manufacturing plants by making energy management as much a part of typical industrial operating practices as quality, waste reduction and inventory management. The goal is to provide a mechanism that helps each company maintain their focus on energy efficiency improvements, provide visibility for its achievements, and provide verification of results to public and private entities to "raise the bar" on industrial energy efficiency.

- (3) Along with the need for increased energy efficiency, there is also need for greater transparency in the way industrial facilities identify, develop, and document energy efficiency improvements. Historically, energy saving efforts have been developed by plant engineers, frequently with assistance from consultants or suppliers with highly specialized technical skills. Quantifying results and measuring progress relies heavily on the presence of individual energy efficiency "champions" within a company and their access to consultants or suppliers with substantial expertise and experience. Drawbacks to this approach are that achievements are often not well understood by those without specialized expertise, including management, replication occurs quite slowly in the market, and benefits may disappear if the champion leaves the company or is relocated.

- (4) This proposal describes creation of a framework for fostering energy efficiency at all levels of energy performance and a methodology for measuring and validating progress toward energy efficiency—progress that is voluntary, performance-based, and technically sound. The intent would be to integrate this methodology into existing corporate management systems, such as ISO 9001:2000, 14001:2004, and Six Sigma. The long-term goals of this approach are (1) to foster a organizational culture of continuous improvement for energy efficiency, 2) to develop a transparent system to validate energy efficiency improvements and management practices and thus (3) create a verified record of energy savings with potential market value that could be recognized among sectors and countries.

The proposed framework includes three levels of participation:

- Partner Plant
 - Provide plants with a flexible point of entry into a recognized, progressive program to improve energy efficiency
- (5) • Certified Plant
 - Provide a more consistent approach to industrial energy efficiency that is technically sound, yet flexible;
 - Integrate energy efficiency improvements into existing industrial management systems for continuous improvement, and
 - Position participating plants to be recognized by the financial community for superior energy management practices and their contribution to climate change mitigation.
- ENERGY STAR Plant
 - Recognize and encourage superior energy performance

(6) Within this framework, the award of the ENERGY STAR for qualifying plants already exists for some sectors, as do many of the tools that will lay the foundation for the Partner Plant and Certified Plant. What is new is an integrated approach to superior energy performance for industrial facilities, and a voluntary certification process to more consistently validate and recognize achievements. The Partner Plant is meant to prepare industrial facilities to embark on a path to continuous improvement in energy efficiency. The Certified Plant introduces a standardized approach to identifying, developing, documenting, and reporting on energy efficiency progress that provides transparency that currently does not exist.

Four elements are proposed for the voluntary certification program at the plant level:

- Energy Management Standards;
 - Standardized Assessment Protocols for industrial systems (such as pumping, compressed air, steam, process heating) based on best practices identified over years of work by DOE with industry;
 - Certified Practitioners who can provide technical assistance with implementation of the energy management standard and/or system protocols, and
 - Measurement and validation of energy savings by an ANSI-Accredited Certifier.
- (7)
- (8) For additional details on the purpose of the proposed levels, business benefits, technical assistance, and issues to consider, see Attachment 1.
- (9) In addressing this proposed Framework, participants in the March 6 meeting will be asked the following three questions:
1. Given your plant(s) energy efficiency efforts, what characteristics of the proposed
 2. What would be potentially problematic?
 3. What incentives would make the proposed framework attractive to your company and widespread among industry?
- (10)

Substantial feedback is expected and welcomed.

Industry Input Needed

- (11) The success of a voluntary, industry-driven program depends on designing a program that balances requirements for measurement and documentation of performance with practical considerations and costs. To date, a small planning group, including several representatives from manufacturing companies, has contributed to this preliminary concept proposal. The purpose of the March 6 meeting is to more broadly obtain industry input on the proposal, in order to shape the proposal into something that manufacturing companies, such as yours, find valuable. Your comments are not only welcome, but critical to the success of this program.

IMPORTANT NOTE:

- (12) If you would like to provide comments on this proposal, please access the on-line form at the bottom of the main page at www.superiorenergyperformance.net. In submitting comments, please refer to the appropriate paragraph number or numbers (noted in left margin in this document). The on-line form will also make it easy for you to register and request updates or a more active role in future development activities.

What will my company gain from participating in the March 6 meeting?

- (13) Approximately 40 representatives from manufacturing companies will be attending the one day meeting from over 12 sectors. The March 6 meeting offers the greatest opportunity to industry to shape the program in its formative phase. This meeting precedes any program announcement and is focused on manufacturing companies; future meetings will be open to suppliers, consultants, states, utilities, and other interested parties.

What is this meeting likely to accomplish?

The sponsoring organizations will consider this meeting a success if:

- (14)
- Participating manufacturing companies actively provide input to debate and discuss the framework, shaping it into a concept that they find worthwhile;
 - Participating companies agree to participate in future planning to develop elements of the proposed framework

Industry will determine the direction of the certification and standards development process by participating in committees or working groups.

Why is this Framework being considered now?

- (15) In 2003, a group of companies in Texas proposed creation of a voluntary program to certify industrial plants for their proficiency in best energy management practices. DOE recognized this as an opportunity to work with industry, the EPA, and the MEP to develop an organizing framework to broaden the impact of existing industrial energy efficiency program offerings.

- (16) The proposed concept relies on an industry-designed framework that provides a transparent, voluntary approach for industrial plants to identify, achieve, measure, document, and report energy savings. Voluntary energy management standards offer a way for industry to integrate energy efficiency into management practices. The US has an existing ANSI standard Management System for Energy that could be modified and adopted.

- (17) The proposed certification program involves government in a facilitation role, providing a neutral platform, technical assistance, and recognition during the development and piloting of the program. The intent would be to transition management of the certification program to a not-for-profit, non-governmental entity within five years.

What's the value for industry?

- (18)
- Cut operating costs while increasing energy productivity;
 - Reduce emissions without having a negative effect on operations;
 - Be recognized by financial analysts for superior energy management practices;
 - Influence program design, ensuring that it meets energy efficiency goals without undue burdens of time or cost;
 - Access government resources to initiate their certification, and
 - Contribute to more workable carbon trading mechanisms through certification program.

What do the DOE, EPA, and MEP hope to gain from this Framework?

- (19)
- Greatly increase the number of US plants and suppliers to US plants on a path of continuous improvement for energy efficiency;
 - Launch a successful, voluntary program with measurable results;
 - Meet energy savings and greenhouse gas reduction targets through voluntary efforts that help, rather than harm, US industries;
 - Demonstrate U.S. leadership by developing an energy efficiency standard through a consensus-driven, voluntary approach.

What's the concept proposal of how a plant could become certified?

- (20)
- Demonstrate compliance with the *energy management standard*;
 - Identify energy intensity performance improvement opportunities or demonstrates best practice through application of *system assessment protocols*;
 - Measure improvement by implementing identified opportunities and uses recognized *methodologies to validate resulting energy savings*;
 - Provide certified documentation of plant energy savings and energy intensity improvement (%);
 - Re-certify every 3 years by documenting energy savings projects and continuous improvement of 5% or greater energy intensity improvement within the re-certification period.

Who will determine the cost of certification?

- (21)
- Industry is being asked to develop a business model that makes sense. As previously mentioned, a balance needs to be struck between requirements for measurement and documentation of performance with practical considerations and costs. An industry-led working group is envisioned to develop this business model and to make recommendations concerning organizations that could be certifiers. The ultimate goal is a program that is self-supporting through industry fees, so the cost/value proposition needs to be workable.

How can I get involved?

- (22)
1. Participate in the March 6, 2007, meeting in Washington, DC.
 2. Provide comments on this document for inclusion in the meeting summary by March 12 to Aimee McKane at atmckane@lbl.gov or use the on-line form at www.superiorenergyperformance.net
 3. Submit further comments, request to be placed on the Framework email list, review the summary of the March 6 meeting and the refined proposal (available late March), and look for announcements and updates on the Superior Performance website at www.superiorenergyperformance.net
 4. Respond to email requests for volunteers to serve on committees and working groups

DRAFT

Attachment 1: Proposal for Achieving Superior Energy Performance in Industrial Plants

Program Element	Planned Purpose	Business Benefits	Technical Assistance (Available/ <i>Needed</i>)	Issues to Consider
Partner Plant	<ul style="list-style-type: none"> • Provide industrial plants with a flexible point of entry into a recognized, progressive program to improve energy efficiency 	<ul style="list-style-type: none"> • Develop a baseline of energy use • Begin actively managing energy use, costs, and risk • Identify energy savings opportunities that recover costs in 2 years or less • Preferred access to DOE/EPA technical assistance • Recognition for achievements 	<ul style="list-style-type: none"> • Plant Energy Profiler • Energy Management Guidelines/Standards • Energy Saving Assessments • System optimization training • System assessment software • Qualified Specialists • Opportunity/ energy reduction calculator for SMEs • <i>Documentation/reporting tools</i> • <i>Recognition program</i> 	<ul style="list-style-type: none"> • Reporting requirements • Needs of small vs large companies
Certified Plant <i>Certified Plant Details</i>	<ul style="list-style-type: none"> • Provide a framework for a consistent approach to industrial energy efficiency that is technically sound, yet flexible. • Integrate energy efficiency improvements into existing industrial management systems for continuous improvement (ISO, Six Sigma) • Position plants to be recognized by the financial community for superior energy management practices & their contribution to climate change mitigation 	<ul style="list-style-type: none"> • Reduce emissions without negative effect on operations • Continue to improve energy use/product output over time • Enhanced shareholder value • Broad recognition as a good corporate citizen • Improve opportunities for utility and state financial incentives thru documentation/reporting • Potential for preferred supplier status • Potential to set direction for international policy/programs 	See below	<ul style="list-style-type: none"> • Allow certification at both plant and corporate level? • Acceptance by utilities & states for financial incentives • Concern about regulations • Compatibility w/ ISO and programs in the EU and other countries • Federal/ private sector support & recognition of preferred purchasing status
ANSI Energy Management Standard	<ul style="list-style-type: none"> • Provide a framework for integrating energy efficiency into existing industrial management systems for continuous improvement 	<ul style="list-style-type: none"> • Develop a baseline of energy use • Actively managing energy use, costs, and risk • Reduce emissions without negative effect on operations • Continue to improve energy use/product output over time • Document savings for internal & external use • Encourage facilities to sustain gains & address core causes 	<ul style="list-style-type: none"> • <i>Modify existing ANSI energy management standard</i> 	<ul style="list-style-type: none"> • Documentation requirements • Compatibility w/existing management practices

Program Element	Planned Purpose	Business Benefits	Technical Assistance (Available/ <i>Needed</i>)	Issues to Consider
ANSI Standardized Assessment Protocols for industrial systems	<ul style="list-style-type: none"> • Create a market standard for industrial system assessment • Introduce greater reliability and recognition of system energy efficiency opportunities • Identify savings opportunities to meet continuous energy efficiency improvement goals 	<ul style="list-style-type: none"> • Easier to secure internal approvals for assessment services • Assurance that recommendations are sound and will produce predicted results • Energy efficiency projects w/ attractive paybacks using commercially available technology 	<ul style="list-style-type: none"> • <i>System Assessment Protocols</i> (based on existing body of knowledge on system assessment & expert guidance) 	<ul style="list-style-type: none"> • Application requirements for energy efficient plants
Certified Practitioners	<ul style="list-style-type: none"> • Create a market standard for assessment services based on training and independent validation of requisite skills 	<ul style="list-style-type: none"> • Easier to identify qualified experts • Companies may choose to have internal staff certified 	<ul style="list-style-type: none"> • <i>Training and testing program for certification</i> (build on Qualified Specialist & ESA Experts training) 	<ul style="list-style-type: none"> • Requirements to maintain certification • Conditions to de-certify
Plant Certification for Energy Efficiency	<ul style="list-style-type: none"> • Validate energy savings achievements • Validate energy management processes • Position plants to be recognized by the financial community for superior energy management practices & their contribution to climate change mitigation 	<ul style="list-style-type: none"> • Enhanced shareholder value • Broad recognition as a good corporate citizen • Improve opportunities for utility and state financial incentives • Potential for preferred supplier status • Potential to set direction for international policy/programs 	<ul style="list-style-type: none"> • <i>Business plan for certifying body</i> • <i>Well-vetted value proposition for industry</i> • <i>Documenting/reporting tools</i> 	<ul style="list-style-type: none"> • Cost of certification • Documentation requirements • Application and re-certification requirements
ENERGY STAR Plant	<ul style="list-style-type: none"> • Recognize and encourage superior energy performance 	<ul style="list-style-type: none"> • Reduce emissions without negative effect on operations • Actively managing energy use & costs • Recognition for superior energy performance 	<ul style="list-style-type: none"> • Energy Guides for Industry • Energy management guidelines, tools • Energy Performance Indicator(EPI) • Energy program self-assessment tools • National energy performance rating system for US plants – specific to select industries but expanding 	<ul style="list-style-type: none"> • Plant label currently limited to 4 industrial sectors