

## INDUSTRIAL SUPERIOR ENERGY PERFORMANCE ACCELERATOR RATEPAYER-FUNDED PROGRAM PARTNERS

The **Better Buildings Initiative** is a national leadership initiative calling on corporate chief executive officers, university presidents, utilities, state and local officials, and other leaders to make substantial commitments to improve the energy efficiency of their buildings and plants, save money, and increase competitiveness. The cornerstones are a commitment to a 20% or more savings target across the organizations' portfolios and a commitment to share strategies that work, substantiated by energy data across the portfolios. The U.S. Department of Energy (DOE) is expanding this initiative to engage leaders in a set of **Better Buildings Accelerators** designed to demonstrate specific innovative approaches, which upon successful demonstration will accelerate investment in energy efficiency.

The **Industrial Superior Energy Performance (SEP) Accelerator** is designed to demonstrate the cost savings by implementing SEP enterprise-wide, as well as to demonstrate strategic energy management through SEP as an effective ratepayer-funded energy efficiency program offering for industrial facilities. There are two engagement opportunities: **Ratepayer-funded Program Partners** are utilities and energy efficiency program administrators that agree to work towards deployment of SEP to manufacturers across their service territories. Enterprise-wide offers Partners an opportunity to implement International Organization for Standardization (ISO) 50001 and SEP enterprise-wide, such as across a corporation, business unit, or multiple plants to achieve greater energy cost savings.

### Goals:

- ▶ Demonstrate the cost-effectiveness of industrial SEP as a ratepayer-funded efficiency program.
- ▶ Measure and document SEP cost-reduction techniques.
- ▶ Demonstrate the business case for industrial customers to invest in SEP.

- ▶ Build the strategic energy management workforce at the regional level.
- ▶ Develop recommendations for post-Accelerator next steps.

This Accelerator will equip utilities and energy efficiency program administrators with resources to help industrial customers implement and assess the SEP certification program and achieve significant energy and cost savings. Nine industrial facilities certified to SEP have improved their energy performance by an average of 10% over business-as-usual in the first 18 months of SEP implementation.<sup>i</sup>

Resources for Ratepayer-funded Program Partners include energy management training and coaching to implement the ISO 50001 international energy management standard—a required component of SEP certification, use of energy performance modeling tools, and other DOE technical assistance.

### Implementation

The SEP Ratepayer-funded Program Partners opportunity has two distinct phases: the Start-up Phase and the Full Implementation Phase. This two-phase approach recognizes the complexity of this type of new offering (integration with other continuous energy improvement (CEI) or strategic energy management (SEM) efforts, customer recruitment, and regulatory requirements). Utilities and program administrators can elect to become a Partner during the Start-up Phase or during the Full Implementation Phase.

The **Start-up Phase** will help utilities understand SEP, and then either integrate it with existing CEI or SEM efforts, or offer it as a new suite of offerings. During this phase, utilities will also begin customer recruitment and prepare information to meet regulatory requirements for filing, or management requirements for deploying, SEP as a program offering.

Ratepayer-funded Program Partners, in collaboration with DOE, will deliver program resources to industrial customers to implement, pilot, test, and assess SEP as a practical and effective energy efficiency program offering.

During the Start-up Phase, Partners will assist DOE with developing a toolkit consisting of a series of information, tools, and resources to support utility and program administrator filings to Commissions, and resources necessary for working with management and with customers on this new offering. This toolkit will provide resources that demonstrate how utilities with existing SEM efforts can dovetail these efforts to include SEP, or to create a new offering, assisting customers in achieving greater energy savings through SEP.

The **Full Implementation Phase** will utilize the toolkit resources to help Partners engage their management, customers, and regulators, and to have the documents needed to effectively pursue an SEP filing, or to launch an SEP offering if no filing is required. The focus of this phase is on the Partners recruiting industrial customers in an SEP program and reporting the data from the program, which may either be a pilot or rolled out across the Partner's service territory.

## What is Superior Energy Performance?

SEP is a certification program that provides industrial facilities with a transparent, globally accepted system for verifying energy performance improvements and management practices. It is accredited by the American National Standards Institute (ANSI) and the ANSI-ASQ National Accreditation Board (ANAB).

SEP enables industrial facilities to achieve continual improvements in energy efficiency while boosting competitiveness. To qualify for SEP, a facility demonstrates conformance to ISO 50001.<sup>ii</sup> The ISO 50001 energy management standard is an international framework for industrial plants, commercial facilities, or entire organizations to manage energy, including all aspects of procurement and use. The standard follows the Plan-Do-Check-Act continual improvement approach used by other ISO management system standards (ISO 9001, ISO 14001).

<sup>iii</sup> As of June 2013, there are 11 facilities in the United States that are ISO 50001 certified but are not yet pursuing SEP certification. These facilities would be good candidates to engage in the Industrial SEP Accelerator.

## Benefits to Ratepayer-funded Program Partners

### ► Help your industrial customers achieve greater energy and cost savings

Nine industrial facilities certified to SEP have improved their energy performance by an average of 10% over business-as-usual in the first 18 months of SEP implementation. They have saved on average \$503,000 per year from operational improvements attributable to SEP.

### ► Gain ISO 50001 energy management system expertise

Program implementers obtain training on ISO 50001 and SEP. Utility and energy efficiency program implementation staff obtain the DOE Certified Practitioner in Energy Management Systems (CP EnMS) professional credential that helps customers implement ISO 50001 and identify energy cost-saving opportunities. The CP EnMS training prepares energy management experts with knowledge of the ISO 50001 standard, energy engineering principles, SEP standards and the measurement and verification protocol, and industrial energy practices and concepts.

### ► Access to energy management tools and resources

Partners and their participating customers receive assistance with using DOE's Energy Performance Indicator (EnPI) tool to help industrial customers establish a baseline and track energy performance improvement consistent with the SEP measurement and verification protocol.

### ► National recognition

Receive national recognition from DOE for demonstrating your energy efficiency commitment to your industrial customers. Raise the visibility of your efficiency efforts with your customers.

## SEP Results – A Look at Nine Industrial Facilities<sup>iv</sup>

Results to date from nine SEP certified industrial facilities demonstrate that SEP implementation delivers significant energy and cost savings with short payback periods (Table 1). The facilities saw an average payback of 1.7 years after having invested \$319,000.

Internal staff time accounts for the majority (67%) of the SEP certified facilities' implementation costs, which presents an opportunity for Industrial SEP Accelerators to provide technical assistance to reduce those costs.

**Table 1. SEP Program Costs, Participation Benefits, and Marginal Payback**

Metric	Average
Energy use (baseline year, TBtu)	1.5
Energy bill (baseline year, \$ million)	10.6
ISO 50001 and SEP implementation costs (\$K)	319
Annual operational improvement energy savings (attributable to SEP)* (\$K)	503
Annual capital project energy savings (attributable to SEP) (\$K)	215
Average electricity savings (MW-hr/year)	6,533
Marginal payback (years**)	1.7

\*Operational improvement energy savings only includes energy savings resulting from operational changes made as a result of SEP participation.

\*\*Marginal payback figures are calculated by dividing SEP costs (not including capital project costs) by associated SEP operational energy savings beyond business-as-usual operational energy savings prior to SEP implementation for each of the nine SEP certified plants and then an average of the marginal payback for the nine plants was calculated.

Data from the nine facilities also show that implementation of the ISO 50001 EnMS delivers deeper energy savings from low/no cost operational improvements. Prior to SEP training, the facilities' business-as-usual energy performance improved annually by an average of 3.6% against the baseline year. After the first SEP training, the percentage of energy savings increased to 7.4% for the first year and 13.7% during quarters Q5 to Q6. Taking business-as-usual energy savings into account, SEP accounts for the additional 3.8% of energy savings in the first year after SEP training and 10.1% in the first half of the second year.

### DOE Commitment to Ratepayer-funded Program Partners

DOE is dedicating investment in energy management resources and training to help Ratepayer-funded Program Partners and their identified industrial customers to implement ISO 50001 and pursue SEP certification.

- ▶ **Three, 2.5-day cohort training sessions** for industrial customers engaged with Partners on all elements of ISO 50001 Plan-Do-Check-Act framework, SEP requirements, and DOE's EnPI tool for energy performance modeling.
- ▶ **Access to and assistance with DOE tools and resources** for Partners and their industrial customers, including in-plant trainings hosted at Better Plants Partner facilities. In-plant trainings help to develop energy efficiency expertise within industrial companies through an intensive 3-4 day training led by energy experts who educate participants on how to conduct assessments, use DOE tools, develop energy management systems, and implement projects.
- ▶ **National recognition for Ratepayer-funded Program Partners** for demonstrating your energy efficiency commitment to your industrial customers.
- ▶ **DOE third-party report or case study** for Partners that highlights the SEP achievements at an industrial customer's facility.
- ▶ **Tips and case studies** for selecting and recruiting successful industrial candidates based on characteristics of industrial customers that successfully achieved SEP certification.

### Ratepayer-funded Program Partner Commitment

The utility/program administrator is dedicating investment in energy management resources and training to help an identified number of their industrial customers pursue SEP certification.

- ▶ **Recruit and engage a cohort of industrial customers in a pilot SEP program;** could include DOE Better Plants Partners.
- ▶ **Develop a pilot SEP program** that includes the program materials, costs, benefits, and measurement and verification of the program impacts (energy usage and savings).
- ▶ **Develop and deliver toolkit resources to industrial customers** to support SEP implementation and certification. Resources may include cost-shared:
  - Technical assistance,
  - Metering,
  - Full-time energy managers,
  - Third-party SEP audits, and
  - Financial incentives for achieving a determined level of verified energy savings.

- ▶ **Sponsor Certified Practitioner training** for SEP program energy management experts and implementers to ensure a qualified workforce to assist industrial customers in implementing the pilot SEP program. Creating certified energy management expertise will strengthen and ensure long-term sustainability of SEP within a utility's service territory.
- ▶ **Share end-user EnPI tool data** about SEP program costs and benefits with Lawrence Berkeley National Laboratory (LBNL). LBNL, as a DOE National Laboratory, will gather all appropriate industrial end-user data to assess the costs and benefits of SEP to the end-user. Data will be kept confidential by LBNL through a Non-Disclosure Agreement with the end-user. Individual facility-level data will not be shared beyond LBNL. Share with DOE your utility/program administrator program costs and benefits in implementing the Industrial SEP Accelerator with DOE. Information that will be shared with the public includes aggregate data on industrial sectors participating in the Industrial SEP Accelerator, energy usage and savings, and program costs and benefits.

## For More Information:

- ▶ **Contact:**  
Sandy Glatt, U.S. Department of Energy  
[sandy.glatt@ee.doe.gov](mailto:sandy.glatt@ee.doe.gov)
- ▶ **Better Buildings:**  
<http://energy.gov/betterbuildings>
- ▶ **Superior Energy Performance:**  
[http://www1.eere.energy.gov/manufacturing/tech\\_assistance/sep.html](http://www1.eere.energy.gov/manufacturing/tech_assistance/sep.html) and  
<http://www.superiorenergyperformance.energy.gov/>

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- i. Assessing the Costs and Benefits of the Superior Energy Performance Program. 2013 American Council for an Energy-Efficient Economy Summer Study for Industry Paper. Peter Therkelsen and Aimee McKane, Lawrence Berkeley National Laboratory, Ridah Sabouni and Tracy Evans, Energetics Incorporated, Paul Scheihing, U.S. Department of Energy.
  - ii. <http://superiorenergyperformance.energy.gov/>
  - iii. <http://superiorenergyperformance.energy.gov/enms.html>
  - iv. Nine facilities certified to SEP provided energy data from the EnPI software tool to help DOE examine the business value of SEP certification, the benefits of participation, and attendant implementation costs and energy and cost savings.