

United States Superior Energy Performance Program

Program Summary

Superior Energy Performance (SEP) is a voluntary certification program that provides industrial facilities with a roadmap for achieving continual improvement in energy efficiency while maintaining competitiveness. The program is based around the standard for Energy Management Systems (EnMS) developed by the International Standardization Organization, ISO 50001, which provides a transparent, globally accepted system for verifying energy performance improvements and management practices.

Several levels of awards are delivered to companies depending on the energy performance achieved. In order to achieve one of three certification levels: Silver, Gold, or Platinum, all facilities need to conform to the ISO 50001 energy management standard and the forthcoming American MSE 50021 standard, as well as improve energy performance by a certain percentage. A number of pilots (12 as of October 2012) have been conducted since 2010 in preparation for the national launch of the SEP, scheduled for the spring of 2013.

Program Information	
Program Title	Superior Energy Performance Program
Type of Program	Energy Management – voluntary program
Target Group	Size <ul style="list-style-type: none"> All Industry focus <ul style="list-style-type: none"> All industry
Start and End Date	2012/13 – ongoing Pilots have been conducted in the United States since 2010 [1]
Geographic Coverage	United States
GHG emission source covered	All energy sources
Objective(s)	To encourage industrial facilities to achieve continual improvement in energy efficiency and provide a transparent, globally accepted system for verifying energy performance improvements and management practices (ISO 50001).
Program Funding Source	US Department of Energy U.S. Council for Energy-Efficient Manufacturing (U.S. CEEM) (*1)
Total Program Funding	<i>Not available</i>



Implementation Details	
Operating Mechanism	<p>A central element of Superior Energy Performance is that companies must comply with the ISO 50001 energy management system standard and demonstrate an energy performance improvement [1]. Within this, there are two requirement streams that companies can choose:</p> <ul style="list-style-type: none"> • SEP Partner: self-declaration of ISO 50001 adoption. • SEP Certified Partner: audit by a SEP Verification Body, accredited by the American National Standards Institute (ANSI) - American Society for Quality (ASQ) National Accreditation Board (ANAB) (“ANSI-ANAB”). Companies must demonstrate compliance with the ISO 50001 and forthcoming MSE 50021 standard and obtain certification by external verifiers and demonstrate energy performance improvements (<i>see “M&V requirement on industry” below for more information</i>). <p>Superior Energy Performance considers a facility’s performance on a continual basis but does not compare a facility to other facilities within their company or throughout its industry.</p> <p>SEP status lasts three years, after which companies must seek recertification.</p> <p>For Certified Partners, companies’ performance can be recognised according to two “energy pathways”:</p> <ol style="list-style-type: none"> 1) a pathway for companies new to energy management: they must demonstrate savings of at least 5% over a three-year period; and 2) a mature pathway for companies with longer experience in energy management. These companies must demonstrate at least 15% savings over the last ten years and receive a minimum score according to the “Best Practice Scorecard” [1]. <p>Depending on the SEP Certified Partner’s improvement in energy performance during the certification period, it may achieve one of three certification levels: Silver, Gold, or Platinum. Companies in either the Energy Performance Pathway or the Mature Energy Pathway are eligible to achieve these levels of certification. The pathways are further illustrated in the Program Flowchart, below.</p>
Energy management System	EnMS Standard: ISO 50001
Program Offerings for Industry	<p>To support SEP, DOE offers free software tools and guides, training, and technical information for continually improving industrial energy performance (*3).</p> <p>Training: Facilities can draw on support from external or in-house Certified Practitioners in Energy Management Systems, which help facilities implement the ISO 50001 Energy management system standard and prepare for SEP application. Certified</p> <p>Web-based Tools and Resources: DOE’s online Energy Management Portal (*4) features an Energy Management Tool Suite with resources to help companies implement energy management systems consistent with ISO 50001. The site provides downloadable software tools organized by energy management activities at the project, facility, and corporate level. The portal also provides information on standards and protocols. Facilities seeking SEP certification will also have access to web-enabled versions of software tools with the option to store facility data in a secure area for future updating or use in other tools. Particularly relevant are:</p> <ul style="list-style-type: none"> • The DOE ISO 50001 e-guide (*5) • Software tools such as the Quick Energy Profiler, Project Opportunities



	<p>Tracker, and tools for process heating, combined heat and power, motors, pumps, steam and fans.</p> <ul style="list-style-type: none"> • System Assessment Standards: ASME (founded as the American Society for American Engineers) standards for conducting energy efficiency assessments in specific energy systems—pumps, process heating, steam, and compressed air also help companies seeking SEP Certified Partner status to improve their performance. <p>M&V guide and protocol: The U.S. CEEM also provides a Measurement & Verification (M&V) Protocol - a methodology to verify energy performance improvement and conformance to ISO 50001.</p> <p>Best Practice Scorecard: Plants can earn Best Practice Scorecard points to qualify for silver, gold, or platinum designation. A tool will soon be available to help users apply the scorecard.</p> <p>Piloting Case Studies: To enable potential partner companies to learn about the experiences of companies that have obtained ISO 50001 certification and access company testimonials (*6)</p>
Supervising Agency	U.S. DOE U.S. CEEM (*1)
Implementing Agency	US DOE U.S. CEEM
Implementing Agency Type	U.S. DOE: Public Institution or Agency Other: U.S. CEEM is a public-private partnership
M&V requirements on industry	<p>Adoption of Energy Management System standard ISO 50001 is required. Within this, there are different verification requirement streams that companies can choose:</p> <ul style="list-style-type: none"> • Partner: self-declaration of ISO 50001 adoption (no verification) • Certified Partner: SEP Lead Auditors and SEP Performance Verifiers serve as third-party auditors to verify that an applicant meets the Superior Energy Performance requirements. <ol style="list-style-type: none"> 1. SEP Lead Auditors will assess a manufacturing plant’s management system conformance to ISO 50001 and additional SEP requirements documented in ANSI/MSE 50021. 2. SEP Performance Verifiers will assess a manufacturing plant’s conformance to the (1) measurement and verification protocols and (2) energy performance improvement levels defined by the SEP program [1].
M&V requirements on the program	Not available.



Program Flow Chart				
Performance Characteristics		Silver	Gold	Platinum
Energy Performance Pathway	Energy Performance Improvement	Meets 5% energy performance improvement threshold over the last 3 years.	Meets 10% energy performance improvement threshold over the last 3 years.	Meets 15% energy performance improvement threshold over the last 3 years.
Mature Energy Pathway	Energy Performance Improvement	Demonstrates an energy performance improvement of 15% or more over the last 10 years.	Demonstrates an energy performance improvement of 15% or more over the last 10 years.	Demonstrates an energy performance improvement of 15% or more over the last 10 years.
	Score on Best Practice Scorecard <i>Includes credits for energy management best practices and energy performance improvements beyond 15% over the last 10 years.</i>	<ul style="list-style-type: none"> Meets a score of at least 35 and up to 60 out of 100 total points for Best Practice Scorecard Minimum of 25 points required for the energy management best practices. 	<ul style="list-style-type: none"> Meets a score of at least 61 and up to 80 out of 100 total points for Best Practice Scorecard Minimum of 40 points required for the energy management best practices and 10 for energy performance. 	<ul style="list-style-type: none"> Meets a score of at least 81 out of 100 total points for Best Practice Scorecard Minimum of 40 points required for the energy management best practices and 20 for energy performance.

Impacts and Results	
Metric	<i>Not yet available</i>
Target/goal for the companies	Corporate energy saving targets are determined internally or companies can choose to select different energy performance pathways to have achievement of their targets recognized: 1) a pathway for companies new to energy management: they must demonstrate savings of at least 5% over a three-year period; and 2) a mature pathway for companies with longer experience: these companies must demonstrate at least 15% savings over the last ten years and receive a minimum score according to the “Best Practice Scorecard” [1].
Analytic base for target (or target setting mechanism)	Not available.
Savings (recent year)	<i>Not yet available</i>
Savings (program total)	<i>Not yet available</i>
Savings (Share of overall demand)	<i>Not yet available</i>
Average unit cost of energy saved	<i>Not yet available (work is currently underway to measure energy savings costs)</i>
Non-energy benefits (co-benefits)	<i>Not yet available (work is currently underway to quantify co-benefits)</i>



Other Information	
Footnotes	<p>(*1) The U.S. Council for Energy-Efficient Manufacturing (U.S. CEEM) is a partnership with members from private and public sectors. The U.S. CEEM guides the development of Superior Energy Performance^{cm}. Members include representatives from:</p> <ul style="list-style-type: none"> • U.S. industrial companies: 3M Company, Alcoa, the Coca-Cola Company, Cummins, Dow Chemical Company, Eastman Chemical, Ford Motor Company, General Dynamics, HARBEC, Holcim U.S., HP, Huntsman Chemical, J.R. Simplot Company, LyondellBasell, Nissan North America, Owens Corning, PPG Industries, SSAB, Toyota, Volvo Trucks North America and Weyerhaeuser. • Alliance to Save Energy • American National Standards Institute (ANSI) • U.S. Department of Energy (DOE), Advanced Manufacturing Office (AMO), Save Energy Now program • U.S. Environmental Protection Agency (EPA), ENERGY STAR Industry Program • U.S. Department of Commerce (DOC), National Institute of Science & Technology (NIST) Manufacturing Extension Partnership Texas Industries of the Future (Texas IOF) <p>(*2) American National Standards Institute National Accreditation Board</p> <p>(*3) See http://www1.eere.energy.gov/manufacturing/tech_deployment/ecenter.html</p> <p>(*4) See https://save-energy-now.org/EM/tools/Pages/HomeTools.aspx</p> <p>(*5) See https://save-energy-now.org/EM/SPM/Pages/Home.aspx</p> <p>(*6) Texas pilots and case studies http://www.superiorenergyperformance.net/texas_pilot.html</p>
References	<p>[1] Superior Energy Performance website. Retrieved from: http://www.superiorenergyperformance.net/index.html http://www.superiorenergyperformance.net/qualify.html http://www.superiorenergyperformance.net/MandV.html</p> <p>[2] DOE (2011). Superior Energy Performance - overview (presentation).</p> <p>[3] DOE EERE (2009). Available at http://www1.eere.energy.gov/industry/energymanagementdemonstrations/index.html</p>
Useful reports	<p>http://www.iea.org/work/2011/iip/10_McKane.pdf</p> <p>Presentation by Aimee McKane at the IEA-IIP Policy Pathway Workshop on Energy Management Programmes (September, 2011). Available at http://www1.eere.energy.gov/industry/pdfs/webcast_20100304_sep.pdf</p> <p>US DOE EERE (2010). Energy Management Demonstrations in Industrial Facilities. Available at http://www1.eere.energy.gov/industry/energymanagementdemonstrations/pdfs/emdemofactsheet.pdf</p>