

Superior Energy Performance^{CM}

Industrial Facility Best Practice Scorecard

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BEST PRACTICE SCORECARD METHODOLOGY

Introduction

Superior Energy Performance^{cm} (SEP) is a certification program for facilities that have implemented an energy management system (EnMS) that conforms to ISO 50001: *Energy management systems-Requirements with guidance for use* (referred to as ISO 50001 in the remainder of this document). Additional SEP requirements to achieve documented and verified energy performance improvements are defined in [ANSI] MSE 50021 (Note: This is not currently an approved ANSI standard). The SEP program has two industrial facility certification pathways: the Energy Performance pathway and the Mature Energy Pathway. The improvement criteria for the two pathways are listed below in Table 1.

Table 1: Minimum Improvement Threshold and Timeframe for Achieving Certification

Pathway	Requirements	Level		
		Silver	Gold	Platinum
Energy Performance	Minimum % improvement	5%	10%	15%
	Maximum years to achieve	3*	3*	3*
Mature Energy	Minimum % improvement	15%	15%	15%
	Maximum years to achieve	10*	10*	10*
	Minimum Best Practice Scorecard points	35	61	81

*Reduced timeframe may be justified based on the requirements in the Superior Energy Performance Measurement and Verification Protocol for Industry.

The Mature Energy Pathway enables industrial facilities with mature energy management systems to achieve SEP certification. Mature energy management systems typically demonstrate a long term track record of energy performance improvements. These facilities have a history of devoting resources to energy management and have typically reached the point where significant energy performance improvements can be achieved only through large capital expenditures. Providing a path for those facilities that have been actively engaged in managing energy for many years is the purpose of this scorecard and the associated credits.

The credits in this scorecard can be earned by implementing energy management best practices as well as improving energy performance. The best practices are activities, processes or procedures that are “above and beyond” what is required by ISO 50001. These practices define superior energy management that is exhibited only by “best in class” companies. This approach encourages industrial facilities to continually improve their energy management system which will lead to improved performance and sustained energy savings.

The Industrial Facility Best Practice Scorecard provides details about the credits that will help industrial facilities qualify for SEP certification through the Mature Energy Pathway. Each credit also designates the evidence an auditor will use to verify the credit. Annex A provides a table that indicates if a credit will be audited by the SEP Lead Auditor, or whether a credit will be audited by the SEP Performance Verifier. The SEP Certification Protocol, Appendix B, contains information about the roles and requirements of SEP Lead Auditors and SEP Performance Verifiers. Additional information regarding the auditing of scorecard credits can also be found in Annex A. [ANSI] MSE 50021 also contains some additional requirements for facilities seeking SEP certification. These requirements will be audited by the SEP Lead Auditor.

An extensive discussion of the SEP certification levels and the associated points required to qualify for each level is included below.

Framework

Best practice scorecard credits are available in seven major categories that are organized under two major focus areas: *Energy Management* and *Energy Performance Improvement*. Energy Management credits can be acquired by implementing best practices. Credit for performance improvement requires a manufacturing facility to improve its energy performance beyond a minimum threshold (see the *Scorecard Scoring System* on page 7) or implement innovative technologies and strategies (see the *Innovation Credits* on page 9).

The seven major categories of best practice credits are:

Focus Area 1: Energy Management Credits (70 total points)

1. Energy Data, Monitoring & Measurement (DM)
2. Management of Significant Energy Uses (SU)
3. Energy Supply Management (ES)
4. Management of Energy Performance Improvement Opportunities (EP)
5. System Sustainability (SS)

Focus Area 2: Energy Performance Improvement Credits (30 total points)

6. Energy Performance Improvement Credit (EPI)
7. Innovation in Energy Performance (IEP)

An introduction to each category provides an overview of the subject matter that the credits address in that section. The introduction is designed to assist the user in determining the types of management practices that may qualify for credits and to provide a framework for the information that follows.

In Focus Area 1, each category has a list of prerequisites followed by associated best practice energy management credits. The prerequisites are relevant requirements of the ISO 50001 standard for which the associated best practices apply. Each prerequisite is followed by one or more scorecard credits that demonstrate practices beyond the energy management system standard requirements. Table 2 lists the best practices in each category and the total number of points for each category and credit.

Table 2: Best Practice Scorecard Credits

Energy Data, Monitoring and Measurement (DM)		17 Possible Points
1	DM Credit 1.1: Data availability	2 Points
2	DM Credit 1.2: Improve data collection and analysis	3 Points
3	DM Credit 2.1: EnPI updating	2 Points
4	DM Credit 2.2: Establish benchmarks	2 Points
5	DM Credit 3.1: Submeters	2-4 Points
6	DM Credit 3.2: Cost centers	4 Points
Significant Energy Uses (SU)		19 Possible Points
7	SU Credit 1: Facility energy balance	2 Points
8	SU Credit 2: Designation of significant energy uses	2-8 Points
9	SU Credit 3.1: Equipment repair and replacement policy	3 Points
10	SU Credit 3.2: Utilize energy-efficient design	2 Points
11	SU Credit 4.1: Energy-efficient maintenance practices	2 Point
12	SU Credit 4.2: EnPIs for significant energy uses	2 Point
Energy Supply (ES)		5 Possible Points
13	ES Credit 1.1: Include procurement personnel on energy team	2 Points
14	ES Credit 1.2: Demand optimization	3 Points

Management of Energy Projects (EP)		12 Possible Points
15	EP Credit 1.1: Regular assessment of significant uses	2 Points
16	EP Credit 1.2: Energy system assessment standards	2 Points
17	EP Credit 1.3: Continual improvement tools	2 Points
18	EP Credit 1.4: Life cycle costing	2 Points
19	EP Credit 2: Lower financial barriers	4 Points
System Sustainability (SS)		17 Possible Points
20	SS Credit 1.1: Resources: Energy management team	2 Points
21	SS Credit 1.2: Awards or incentive program for energy	4 Points
22	SS Credit 1.3: Energy professional certifications	2 Points
23	SS Credit 1.4: Strategic planning	2-4 Points
24	SS Credit 2: Preventive action	2 Points
25	SS Credit 3: Management review of inputs from stakeholders	3 Points
Energy Performance Improvement Credits		30 Possible Points
26	Energy Performance Improvement Credit	2 - 30 Points
Innovation Credits for Energy Performance		23 Possible Points
27	Innovation Credit 1: Combined Heat and Power	1 - 5 Points
28	Innovation Credit 2: Renewable Energy Supply	1 - 5 Points
29	Innovation Credit 3: Superior Performance with Benchmarks	1 - 3 Points
30	Innovation Credit 4: GHG Intensity Reduction from On-site Energy Use	2 - 5 Points
31	Innovation Credit 5: Other Innovative Actions	1 - 5 Points

The prerequisites include three pieces of information that the user may find helpful. These are 1) intent of the ISO 50001 standard, 2) requirement of the standard, and 3) potential technologies and strategies to meet the relevant requirement of the ISO 50001 standard. The intent provides the purpose or “why” behind the requirement. The requirement is a "plain English" statement based on the ISO 50001 standard. The potential technologies and strategies are means by which a facility may choose to approach the requirement. The list of potential technologies and strategies is not all–

inclusive, but it presents some possible approaches to meeting the requirement of the standard. This preliminary information sets the stage for the related credits; these practices are not audited as a part of the Industrial Facility Best Practice Scorecard audit because these prerequisites will already be in place if the facility has an energy management system conformant with ISO 50001.

Each credit in Focus Area 1 has five sections: 1) available points for the credit, 2) intent, 3) credit statement, 4) potential technologies and strategies, and 5) measurement and verification criteria. The points section designates the value of the credit. The intent is the purpose of the credit. The credit statement is a summary of what the facility must demonstrate to receive the points. The potential technologies and strategies is a list of potential approaches that may be used to meet the requirement of the credit—this list is not exhaustive nor is it considered a list of preferred practices or approaches. The intent potential technologies and strategies sections are included as guidance for the facility, but they will not be audited. The measurement and verification criteria section provides the evidence that will be evaluated for the credit by an auditor during the SEP certification or re-certification audit. Unless explicitly stated in the measurement and verification criteria for the credit, no points or partial credit will be awarded unless all measurement and verification criteria are satisfied.

In Focus Area 2, the credits are very similar in design and layout to Focus Area 1. However, the focus is on energy performance improvement and the credits are quantitative in nature rather than process oriented as in Focus Area 1. The first performance credit is for energy performance improvement above the minimum requirement for certification. There are a total of 30 points for this credit; more detail on the scoring for this credit is included below in the section, *Scorecard Scoring System*. In addition, five innovation credits are available that can be applied toward energy performance improvement credit. The innovation credits can be earned through the implementation of innovative technologies or demonstrated best in class performance. More detail on these credits is available below in the section, *Innovation Credits*. The scoring for the innovation credits are shown in Table 2.

Timeframe for Demonstrating Credits

The Mature Energy Pathway looks back over 10 years at the energy performance improvement of a facility. To earn the energy performance improvement credit points, a facility must demonstrate an energy performance improvement of 15% or more over the 10 years after the baseline period. (A reduced timeframe may be justified based on the requirements of the SEP Measurement and Verification Protocol for Industry section, 3.5.2.)

Another important aspect of a mature energy management system is sustained best practices that lead to continual improvement. For example, a facility should continue to train its employees whose jobs have a significant impact on energy consumption

because this leads to sustained energy performance. This practice ensures continuity when personnel changes and when changes to equipment and operations occur.

There are two different timeframes for demonstrating conformance with a Best Practice Credit.

1. The Stage 2 audit will assess the information and evidence about conformity to the credit requirements that demonstrate the credit is effectively implemented.
2. The recertification audit will confirm the continued conformity and effectiveness of the credits that are continued and assess information and evidence demonstrating effectiveness for any new credits. The recertification audit will take into account any internal or external changes to the system.

Scorecard Scoring System

The Superior Energy Performance program certifies industrial facilities at three performance levels: 1) silver, 2) gold, and 3) platinum. For the Mature Energy Pathway, credits for best practices in energy management and credits for energy performance improvement are assigned points. Typically each credit is given at least one point, while some are given more points based on the difficulty of achieving the credit and the positive effect on a facility's overall energy performance. The different designations of SEP certification are based on the scoring system shown in Table 3.

Table 3: Scoring System for SEP Mature Pathway Certification Levels

Levels	Scorecard Points		
	Overall Minimum	Minimum Energy Management Points	Minimum Energy Performance Points
Silver	35	30	0
Gold	61	40	10
Platinum	81	40	20

For the 100 point scale, a facility can achieve up to 70 points by implementing energy management best practices. The remaining 30 points can be achieved by demonstrating energy performance improvement credits.

All facilities that wish to certify according to the Mature Energy Pathway must demonstrate an energy performance improvement of 15% or more over the 10 years after the baseline period. Facilities applying for the silver level must achieve at least 35 points, of which 30 points are from energy management best practices. The gold and platinum levels require a minimum of 40 points in energy management best practices. In addition, a minimum of 10 points in energy performance improvement credits are also required for the gold level. To obtain platinum level certification, a minimum of 20 points are required in energy performance improvement credits. Above the minimum requirements, a facility can achieve points from best practices in energy management or from energy performance improvement credits.

Energy performance improvement points can be obtained by improving energy performance beyond the minimum 15% in 10 years required or through innovation credits. Energy performance for the Mature Energy Pathway is measured by application of the Superior Energy Performance Measurement and Verification Protocol for Industry. Points are assigned, by the SEP Performance Verifier, for improving energy performance improvement according to the scoring system shown in Table 4.

Note: the energy performance improvement in the Mature Energy Pathway is measured over a five- to ten-year period after the baseline period.

Table 4: Energy Performance Improvement Point System

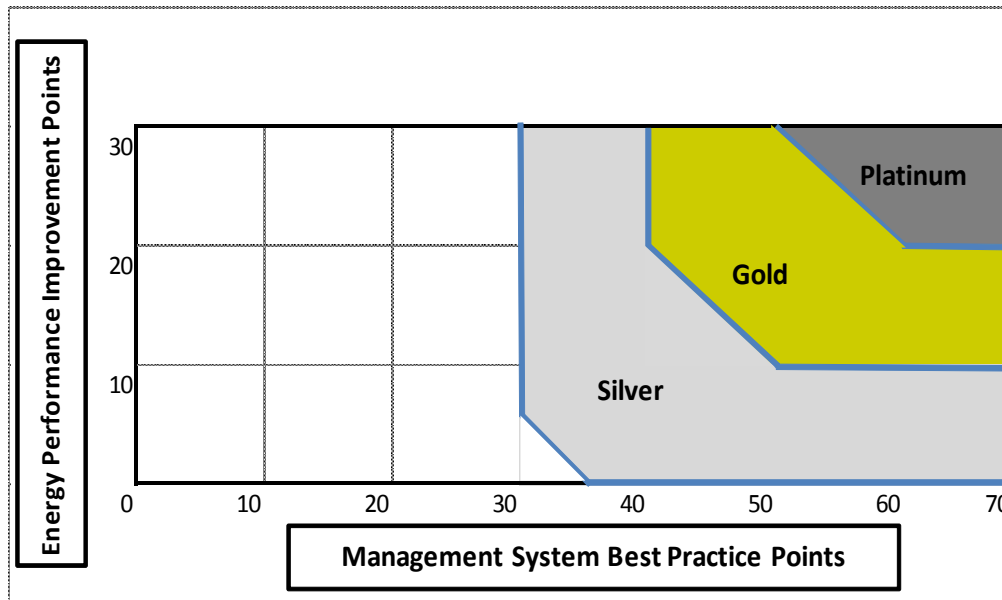
<u>Energy Performance Improvement</u> (over 5 to 10 years)	
<u>% (min)</u>	<u>Points</u>
15%	0
16%	2
17%	4
18%	6
19%	8
20%	10
21%	12
22%	14
23%	16
24%	18
25%	20
26%	22
27%	24
28%	26
29%	28
30%	30

Energy performance improvement will be verified based on the Superior Energy Performance Measurement and Verification Protocol for Industry.

As mentioned, innovation credits are available in addition to the energy performance improvement credit. There are a total of 23 points in five innovation credits and these points can be applied toward energy performance improvement. The 30 points available in energy performance can be achieved by the energy performance improvement credit (30 points) and by innovation credits (23 points).

Figure 5 plots energy performance improvement points versus energy management best practices. This helps to visualize the range or combination of points that can lead to certification for silver, gold, or platinum.

Figure 5: Point Combinations to Achieve SEP Certification Levels



Innovation Credits

Five innovation credits with a total of 23 points are available. These credits are for 1) Combined Heat and Power, 2) Renewable Energy Supply, 3) Superior Performance with Benchmarks, 4) Green House Gas (GHG) Intensity Reduction from On-site Energy Use, and 5) Other Innovative Actions. The first two innovation credits recognize commitment by an organization to invest in major infrastructure that requires large capital outlays and to adopt technologies that have strategic national importance. The third innovation credit gives credit to organizations with world class energy performance that have been evaluated through a nationally known energy performance benchmark. The fourth innovation credit recognizes technological improvements that have led to reduction in energy-related carbon intensity. The fifth innovation credit rewards innovative activities that lead to improved energy performance that have not been addressed elsewhere in the Best Practice Scorecard. Facilities that wish to claim this credit are required to document the innovation and notify the SEP Program Administrator prior to the certification audit.

Innovation credits are considered mutually exclusive, and double counting is not allowed for implementing a technology that may qualify for multiple innovation credits.

The facility must determine the single credit category for each of the technological improvements it has implemented.

INTRODUCTION – ENERGY DATA, MONITORING AND MEASUREMENT (DM)

The scorecard credits for Energy Data Monitoring and Measurement are intended to represent the practices of a mature energy management system that go above and beyond both the requirements of ISO 50001 and the SEP requirements as specified in [ANSI] MSE 50021 and the normative references.

Data drives the management of energy and an organization can't effectively manage energy if it doesn't measure it. Monitoring and measuring is the only way to know the organization's level of energy consumption and to control and ultimately reduce energy consumption. Energy consumption data is also necessary to evaluate equipment and systems prior to purchase and installation in order to acquire the most fuel-efficient option to minimize operating expenses. To ensure equipment continues to operate at peak performance levels, energy consumption must be monitored, collected, and analyzed during operation. Deteriorating energy performance can often signal a need for adjustments or other maintenance activities necessary to restore equipment to peak operating performance. In addition to indicating proper equipment operation, energy data monitoring can be a critical component in proper process operation when process parameters have changed, indicating detrimental results on energy consumption. Energy consumption data are also necessary to evaluate the results of process or equipment changes implemented to improve efficiencies and reduce operating costs.

Data monitoring and measurement is only the first step in the effective use of energy information. Once energy data are collected, data analyses are required to determine the performance of the organization's equipment and systems and can be used to make decisions regarding process changes, process or equipment improvements or the need for equipment maintenance. Analysis is also necessary to determine the root cause of any efficiency deterioration. A growing inefficiency in energy consumption may be a signal of equipment issues or could indicate process problems not directly related to the condition of the equipment itself. Performance is important to the SEP program and data is critical to defining and improving performance.

The areas of the ISO 50001 standard that are related to energy data management include:

- 4.4.3 Energy review
- 4.4.4 Energy baseline
- 4.4.5 Energy performance indicators
- 4.5.5 Operational control
- 4.6.1 Monitoring, measurement and analysis

ENERGY DATA, MONITORING & MEASUREMENT (DM)

DM Prerequisite 1: Energy Review

(ISO 50001, Sections 4.4.3, 4.4.4, 4.4.5)

Intent of the Standard

Include relevant information in the energy review to provide a more complete picture of the organization's energy consumption relative to its primary business output.

Requirement under the Standard

An energy review shall be developed and updated regularly for use in energy planning. The review shall include utility consumption and use tracking, the performance of significant energy uses, and a prioritized list of opportunities. Energy Performance Indicators (EnPIs) shall also be developed and compared to the energy baseline.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Utilize utility tracking
- Conduct energy assessments
- Identify significant energy uses
- Identify EnPIs
- Utilize production or service data
- Establish energy baseline
- Utilize computer files, internal sharing platforms
- Utilize monitoring and measuring equipment
- Collect interval data
- Install submeters
- Develop charts, graphs and tables
- Identify trade association resources for benchmarking
- Utilize government program resources e.g. Energy Star
- Identify industry standards
- Identify equipment standards
- Utilize corporate data from similar facilities
- Consult National Weather Service data
- Utilize DOE Advanced Manufacturing Office Better Plants program resources, e.g., Plant Energy Profiler (ePEP) tool
- Utilize Energy Information Administration resources

DM Credit 1.1: Data Availability

2 Points

Intent

To ensure that persons working for or on behalf of the organization whose activities have been identified as having an impact on energy have access to energy data and information and that energy is a consideration in their activities.

Credit Statement

The energy review is available and readily accessible, in electronic form, to persons working for or on behalf of the organization whose activities have been identified as having an impact on energy. (The organization must show evidence that personnel with potential impact on energy consumption have been identified and the impact of their activities has been assessed.) Ensure the energy data is available and being utilized by these individuals.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Distribute electronic utility data or energy information to relevant personnel
- Utilize monitoring and measurement equipment to provide energy data
- Develop energy tracking spreadsheets
- Provide data in operational / contractor documents
- Provide access to computer readouts
- Provide reports to relevant persons on a frequent basis
- Sign off sheet for operator/contractor

Measurement and Verification Criteria

An SEP Lead Auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence that persons working for or on behalf of the organization with impact on energy consumption have been identified
- Evidence of availability and accessibility of the electronic energy review by persons identified as having an impact on energy
- Evidence that persons identified as having an impact on energy are utilizing energy review information

DM Credit 1.2: Improve Data Collection and Analysis

3 Points

Intent

To enhance energy planning and the identification of opportunities through improved data collection and data mining.

Credit Statement

Demonstrate improvements in the collection and use of energy data or data analysis techniques during the three years prior to application for SEP certification. Organization must demonstrate how the improvement led to new insights into energy performance or to the identification of performance improvement opportunities.

Adding submeters is not addressed by this credit. Refer to *DM Credit 3.1: Submeters*.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Robust energy measurement and assessment practices
- Analyze production and energy data over various time periods
- Collect utility interval data
- Utilize Six Sigma process
- Process/System/Equipment modeling with computer software

Measurement and Verification Criteria

An SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence of improved energy data collection or analysis during the three years prior to application
- Evidence of new insights in energy performance or the identification of performance improvement opportunities as a result of improved energy data collection or analysis

DM Prerequisite 2: Energy performance indicators

(ISO 50001, Section 4.4.5)

Intent of the Standard

Energy Performance Indicators (EnPIs) are regularly examined and modified as necessary to ensure relevancy for evaluating the energy management system.

Requirement under the Standard

EnPIs must be developed and regularly monitored to measure the effectiveness of the energy management system.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Analyze production data
- Analyze energy consumption data
- Utilize monitoring and measuring equipment
- Utilize utility data
- Utilize submeter data
- Utilize vendor data

DM Credit 2.1: EnPI Updating

2 Points

Intent

To frequently update and monitor EnPIs to drive energy performance improvement.

Credit Statement

Update and monitor EnPIs monthly or more frequently to demonstrate improvement in performance and to identify new energy saving opportunities. It is expected that at least one energy saving opportunity will be identified during the three years prior to SEP application for certification from this activity.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Calculate and monitor EnPIs more frequently to provide results of process changes for comparison with previous data
- Calculate and monitor EnPIs more frequently to monitor equipment operation to maintain peak operating efficiency
- Analyze production data
- Analyze energy consumption data
- Utilize monitoring and measuring equipment
- Utilize utility data
- Utilize submeter data
- Utilize vendor data
- Provide appropriate data to operators

Measurement and Verification Criteria

An SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence that energy performance indicators (EnPIs) are updated at least monthly
- Evidence of a new performance improvement opportunity identified as a result of EnPI collection during the three years prior to application

DM Credit 2.2: Establish Benchmarks

2 Points

Intent

To encourage the use of internal or external benchmarks to evaluate performance for similar organizations, processes, systems, or equipment and to evaluate improvements or detect deterioration in energy performance.

Credit Statement

Organization has developed and uses internal or external benchmarks to evaluate the energy performance of the organization, processes, systems or equipment.

For the purposes of this credit, an internal benchmark is a benchmark that is used for comparison within the corporate organization.

NOTE: A benchmark is defined as a standard of performance which is used as a basis of comparison for a facility, system, process or piece of equipment. Many times benchmarks are framed in terms of performance indicators (e.g. kWh/100 cfm for compressed air, MMBtu/1000 pounds of steam for steam systems).

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Analyze production data, multiyear
- Analyze energy consumption data, multiyear
- Utilize monitoring and measuring equipment
- Identify industry standards
- Identify equipment standards
- Collect operating data
- Identify published data
- Review energy assessment
- Identify trade association resources
- Utilize government program resources e.g., Energy Star
- Utilize corporate data from similar facilities
- Identify utility resources
- Utilize DOE Advanced Manufacturing Office
- Utilize Energy Information Administration

Measurement and Verification Criteria

The SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence the organization has developed internal or external benchmarks
- Evidence the organization uses benchmarks to evaluate the energy performance of the organization, processes, systems, or equipment

DM Prerequisite 3: Monitoring and measurement (ISO 50001, Section 4.6.1)

Intent of the Standard

Key operational characteristics are monitored, measured, and analyzed to determine energy performance.

Requirement under the Standard

Instrumentation used to monitor and measure key operational characteristics must provide accurate and repeatable results. Key operational characteristics include EnPIs, the energy consumption of the significant energy uses and relevant variables related to significant energy uses, the evaluation of actual versus expected energy consumption, and the effectiveness of the action plans in achieving targets and objectives.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Utilize monitoring and measuring equipment
- Maintain monitoring and measuring equipment
- Analyze key operational characteristics using statistical analysis

DM Credit 3.1: Submeters

2-4 Points

Intent

To provide enhanced data collection for analysis of equipment and systems to improve energy performance.

Credit Statement

Utilize submeters for measuring consumption of all energy sources of significant energy uses (SEU) to collect data for analysis of energy performance. Data from the submeters must be read on at least a monthly basis and included in the energy review.

Greater than 50% and less than 100% of SEUs have submetering for each energy source	2 points
100% of SEUs have submetering for each energy source	4 points

For the purposes of this credit, a submeter is defined as a fixed instrument or meter that is continuously collecting energy data.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Utilize department submeters
- Utilize equipment submeters
- Utilize metering of equipment components

Measurement and Verification Criteria

An SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit and the number of points to be awarded.

- Evidence of submeters for collecting energy consumption data of the significant energy use for each energy source utilized by the significant energy use
- Evidence of the percentage of significant energy uses that are submetered for each energy source
- Evidence the significant energy use energy consumption data is gathered on at least a monthly basis
- Evidence the significant energy use submetered data is included in the energy review

DM Credit 3.2: Cost Centers

4 Points

Intent

To report energy consumption and cost to organizational departments to encourage accountability for energy consumption.

Credit Statement

Departmental managers are accountable for energy costs incurred by the activities associated with their cost center, and those costs shall be based on the measured energy consumed by those activities. Reports of departmental costs that include energy costs are prepared and distributed to departmental managers.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Utilize monitoring and measuring equipment
- Collect operation records
- Utilize submeters

Measurement and Verification Criteria

An SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence of measurement of energy consumption for each energy source utilized by a cost center
- Evidence of charges associated with measured energy consumption against each cost center
- Evidence of communication of energy charges to cost center managers

INTRODUCTION – SIGNIFICANT ENERGY USES (SU)

The scorecard credits for Management of Significant Energy Uses are intended to represent the practices of a mature energy management system that go above and beyond the requirements of ISO 50001.

Significant energy uses are the equipment, processes, applications, or activities, identified as being significant components of the organization's energy consumption or providing the biggest improvement opportunities. However, these uses also pose the biggest risk if they are not managed well.

Management of the significant energy uses normally entails a combination of activities. It is essential that significant energy uses are monitored, controlled, and maintained as appropriate to ensure continued or improved energy efficiency. In addition, energy concerns should be considered when purchasing new equipment or systems that are associated with the significant energy uses.

Without the proper management of significant energy uses, energy consumption can quickly escalate. Because of the magnitude of energy consumption by these uses, poor purchasing decisions or improper operation of this equipment can drastically impact a facility's energy consumption. Large swings in consumption might even dwarf performance improvements made in other areas of the facility. Maintenance is another key component of management of significant energy uses. Without the proper maintenance of equipment, the performance of even the most energy-efficient equipment can become inefficient, resulting in increased energy consumption.

The areas of the ISO 50001 standard that are related to the management of significant energy uses include:

- 4.4.3 Energy review
- 4.4.6 Energy objectives, energy targets, and energy management action plans
- 4.5.2 Competence, training, and awareness
- 4.5.5 Operational control
- 4.5.7 Procurement of energy services, products, equipment, and energy
- 4.6.1 Monitoring, measurement, and analysis

MANAGEMENT OF SIGNIFICANT ENERGY USES (SU)

SU Prerequisite 1: Energy Review

(ISO 50001, Section 4.4.3)

Intent of the Standard

To collect and maintain organizational energy related information that is available for use in energy planning.

Requirement under the Standard

The organization shall develop and document the method to establish and maintain the energy review. Among other energy information, the energy review includes identified significant energy uses.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Use of billing data
- Use of control system data
- Graphical representation of energy use and demand (e.g., pareto charts and pie charts)
- Use of energy balance
- Records of energy review

SU Credit 1: Facility Energy Balance

2 Points

Intent

To encourage a better understanding of the relative energy consumption of facility processes, equipment and systems.

Credit Statement

The facility has a documented energy balance detailing the energy consumption of the systems and equipment that, when combined, account for at least 90% of the total energy consumption within the facility.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Use of billing data
- Use of submetered data
- Use of control system data
- Use of equipment nameplate data
- Use of equipment specifications
- Use of portable loggers

Measurement and Verification Criteria

An SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence of a documented energy balance detailing the energy consumption of systems and equipment
- Evidence that the percentage of energy consumption detailed in the energy balance is at least 90% of the total energy consumption of the facility

SU Prerequisite 2: Significant Energy Uses

(ISO 50001, Section 4.4.3)

Intent of the Standard

To identify organizational priorities for management and resource allocation for energy management.

Requirement under the Standard

Organization determines the facilities, equipment, processes and personnel that can significantly affect energy consumption or use.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Use of billing data
- Use of control system data
- Graphical representation of energy use and demand (e.g., pareto charts and pie charts)
- Use of ranking system
- Use of energy balance
- Records of method identification

SU Credit 2: Designation of Significant Energy Uses

2-8 Points

Intent

To encourage organizations to continually broaden the scope of the equipment and systems designated as significant energy uses.

Credit Statement

The energy consumption of significant energy uses is greater than a specified percentage of the facility total energy consumption.

50% - 2 points

60% - 4 points

70% - 6 points

80+% - 8 points

Equipment, systems or processes designated as significant energy uses must have appropriate management in place as defined in ISO 50001. If the facility has not designated significant energy uses that account for at least 50% of the total energy consumption then this credit is not available. For facilities with designated SEUs that account for greater than 50% of the facility total energy consumption, additional points are available.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Use of billing data
- Use of control system data
- Graphical representation of energy use and demand (e.g. pareto charts and pie charts)
- Use of ranking system
- Use of energy balance
- Existing management system processes

Measurement and Verification Criteria

An SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit and the number of points to be awarded.

- Evidence that significant energy uses are identified
- Evidence of the percentage of site energy consumption utilized by all of the significant energy uses combined

SU Prerequisite 3: Design and Procurement

(ISO 50001, Sections 4.5.6, 4.5.7)

Intent of the Standard

To ensure appropriate energy factors are considered in the purchase of equipment and systems associated with significant energy uses.

Requirement under the Standard

When designing new or modified facilities, equipment, systems or processes that can have a significant effect on energy performance, the organization shall take into account operational control and energy improvement opportunities. In addition, the organization shall define an appropriate way to determine energy use, consumption, and efficiency for the lifetime of a purchase that can significantly impact energy performance.

Suppliers shall be notified that procurement decisions are partly based on energy performance for purchases impacting significant energy uses.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Corporate policies
- Repair and replacement guidance document
- Design checklists or forms indicating consideration of required energy considerations

SU Credit 3.1: Equipment Repair and Replacement Policy

3 Points

Intent

To encourage life cycle cost considerations in decision making for replacement and repair of equipment.

Credit Statement

A repair and replacement policy that defines how energy efficiency and life cycle costing are taken into account in repair and replacement decisions.

Rejecting energy-efficient equipment based solely on initial capital cost considerations does not meet the intent of this requirement.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Policy designating replacement of equipment with energy-efficient equipment
- Policy designating when repair is appropriate
- Proactive plan for repairing or replacing all critical motors in a facility
- Training of maintenance personnel on repair and replacement decisions
- Use of computerized maintenance management database to make repair and replacement decisions
- Life cycle cost analysis
- Use of qualified repair facility following EASA-Q guidelines

Measurement and Verification Criteria

An SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence of a repair and replacement policy that defines how energy efficiency and life cycle costing are taken into account in repair and replacement decisions

SU Credit 3.2: Utilize Energy-Efficient Design

2 Points

Intent

To encourage inclusion of energy-efficient options in major upgrades.

Credit Statement

For major upgrades, required maintenance, operational controls and energy-efficient features are identified; for design options, potential energy savings should be determined and included in the design record. When energy-efficient features are not accepted into the final design, justification, other than high initial cost only, are recorded.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Corporate procedures
- Research and identification of energy-efficient options
- Checklists or forms indicating energy-efficient design options

- Design justification records
- Existing management system design procedures
- Capital request records
- Capital project review and authorization forms

Measurement and Verification Criteria

An SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence that required maintenance, operational controls and energy-efficient features are identified for major upgrades
- Evidence design record includes potential energy savings
- Evidence of justification, other than high initial cost only, when final design does not include energy-efficient features

SU Prerequisite 4: Operational Control (ISO 50001, Section 4.5.5)

Intent of the Standard

To bring significant energy uses into efficient and sustainable operation.

Requirement of the Standard

Organization has established operational criteria and maintenance to ensure efficient operation.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Documentation of operating criteria
- Development and use of operating procedures
- Development and use of control systems
- Development and use of maintenance practices
- Use of preventive maintenance techniques
- Use of preventive maintenance software
- Development of commissioning and performance testing practices

SU Credit 4.1: Energy-Efficient Maintenance Practices

2 Points

Intent

To encourage the use of preventive and predictive maintenance programs that incorporate energy efficiency guidelines for equipment and systems associated with significant energy uses.

Credit Statement

The system identifies preventive and predictive maintenance activities that improve the energy-efficient operation of the equipment and systems associated with significant energy uses. Identified maintenance activities are included in maintenance system and completed as scheduled.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Review of maintenance for equipment and systems associated with significant energy uses
- Preventive/Predictive Maintenance for utility meters
- Preventive/Predictive Maintenance for energy meters for significant energy uses
- Preventive/Predictive Maintenance for equipment and systems associated with significant energy uses
- Review of maintenance records to determine if additional Preventive/Predictive Maintenance need to be added or frequency of existing Preventive/Predictive Maintenance needs to be modified

Measurement and Verification Criteria

An SEP Lead Auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence that preventive and predictive maintenance activities that improve the energy-efficient operation of the equipment and systems associated with significant energy uses have been identified
- Evidence that these preventive and predictive maintenance activities are included in the maintenance system
- Evidence that these preventive and predictive maintenance activities are completed as scheduled

SU Credit 4.2: EnPIs for Significant Energy Uses

2 Points

Intent

To encourage a better understanding of operations and variability in significant energy uses.

Credit Statement

Energy performance indicators (EnPIs) are developed, tracked, and anomalies investigated on at least a monthly basis for each of the significant energy uses.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Use of submetered data
- Use of production data
- Use of system data for significant energy uses
- Use of tracking spreadsheets

- Identification and investigation of anomalies by energy team

Measurement and Verification Criteria

An SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence that energy performance indicators (EnPIs) are developed for each significant energy use
- Evidence that energy performance indicators for significant energy uses are tracked on at least a monthly basis
- Evidence of investigation for anomalies that occur in significant energy use EnPIs

INTRODUCTION – ENERGY SUPPLY (ES)

The scorecard credits for Energy Supply management are intended to represent the practices of a mature energy management system that go above and beyond the requirements of ISO 50001.

Effective management of energy resources and utility suppliers is critical to the creation of a comprehensive energy management program. Proactive energy supply management will ensure that an organization procures the necessary energy resources in sufficient quantity with adequate quality at a competitive price in order to continue planned operations, meet production schedules and manage energy performance improvement effectively.

Without the proper management of energy supply, unit and cumulative energy costs can quickly escalate. Because energy purchasing decisions influence all aspects of energy management, poor purchasing decisions can drastically impact the organization's energy budget. Constant attention and informed decisions are necessary to achieve the optimum energy purchasing plan. Procurement of energy supplies will require explicit knowledge of the organization's energy resource requirements, existing and potential supply options available and practical information on the operating characteristics of current energy systems.

The areas of the ISO 50001 standard that are related to the management of energy supply include:

- 4.5.7 Procurement of energy services, products, equipment and energy

Purchasing Function outside Scope of Management System

Many organizations have a central purchasing function that procures energy supply for multiple facilities. The purchasing function may be separate from and outside the control of the local manufacturing facility that is implementing ISO 50001. Where this situation exists, it may be more difficult to implement ES Credit 1.1. Nevertheless, communication between the supply-side and demand-side of the organization is important to optimize energy performance and ES Credit 1.1 does not make exceptions for organizational structure.

MANAGEMENT OF ENERGY SUPPLY (ES)

ES Prerequisite 1: Energy procurement

(ISO 50001, Section 4.5.7)

Intent of the Standard

Organization develops and uses information, criteria, and specifications to assure that procurement of energy services, products, equipment and energy supports the energy performance objectives of the organization.

Requirement under the Standard

Organization uses life cycle analysis to evaluate energy purchases, informs suppliers of energy performance criteria for evaluating purchases, and provides specifications to energy suppliers that enable the organization to effectively use energy.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Purchasing documents that include energy performance criteria
- Energy performance specifications included in requests for proposals
- Utility contracts that specify energy performance criteria

ES Credit 1.1: Include Procurement Personnel on Energy Team

2 Points

Intent

To enhance communication and interaction between the personnel that procure energy and those that manage energy use, consumption, and performance.

Credit Statement

Personnel responsible for procurement activities regularly participate in energy team meetings, provide regular awareness training on energy procurement bids and contracts to energy team, and act as liaison to facilitate communication between procurement personnel and energy team.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the

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requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Procurement personnel provide awareness training for energy team on the specifications and terms and conditions in energy procurement contracts.
- Procurement personnel are members of the energy team and participate in energy team meetings and activities
- Energy team develops criteria to evaluate life cycle cost of equipment and systems related to significant energy uses and communicates these criteria to procurement personnel

Measurement and Verification Criteria

An SEP Lead Auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence of energy team meetings that include person or persons with procurement responsibility
- Evidence the energy team is being updated or trained from procurement personnel on energy procurement bids and contracts

ES Credit 1.2: Demand Optimization

3 Points

Intent

To encourage organizations to control costs and reduce their consumption when the supplying utility experiences peak demand conditions.

Credit Statement

Organization must demonstrate how it has optimized demand or peak energy consumption by active measures including, but not limited to, seasonal work schedules and investments in load shifting technologies. In order to receive points for this credit, the organization will show how activities have resulted in a 10% annual cost avoidance of utility demand over the three-year period prior to SEP certification.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Load shifting
- Load shaping
- Demand interruptions

- Ice or cool storage utilization

Measurement and Verification Criteria

The SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence the organization has optimized demand or peak energy consumption
- Evidence that peak or demand management activities result in a 10% annual cost avoidance of utility demand over the three-year period prior to SEP certification

INTRODUCTION – ENERGY PERFORMANCE IMPROVEMENT OPPORTUNITIES (EP)

The scorecard credits for the category—Management of Energy Performance Improvement Projects—are intended to represent the practices of a mature energy management system that go above and beyond the requirements of ISO 50001. The standard is performance based and one of the primary means to improve performance is implementation of projects included in the energy management action plans.

The concept of an energy performance improvement opportunity is intentionally broad and incorporates many types of activities including purchasing, operational control, maintenance practices, and traditional capital improvement projects, among others. Industrial organizations implement many projects that have multiple benefits including energy savings. In fact, energy savings may not be the primary goal.

ISO 50001 refers to energy performance improvement opportunities and energy management action plans in several areas:

- Energy review (4.4.3)
- Energy objectives, energy targets and energy management action plans (4.4.6)
- Monitoring, measurement and analysis (4.6.1)

This is a technical category that refers to the activities associated with identifying, planning, prioritizing and implementing opportunities for energy performance improvement which are one of the chief means for continual improvement. Several key concepts in the standard concerning this topic are:

- Energy improvement opportunities are a means for achieving objectives and targets. Prioritization of these should be the result of careful planning that is influenced by an organization's energy policy, legal requirements, and its financial and business objectives.
- Action plans are documents that show the details required to implement energy performance opportunities.
- Action plans should be implemented as planned including the post-installation measurement and verification.
- Closing the loop on improvements in energy performance means incorporating resulting changes into the management system.
- Action plans are to be evaluated to ensure that they are effective.

MANAGEMENT OF ENERGY PERFORMANCE IMPROVEMENT OPPORTUNITIES (EP)

EP Prerequisite 1: Opportunities for Improvement

(ISO 50001, Section 4.4.3)

Intent of the Standard

To regularly identify, prioritize and maintain a record of opportunities for energy performance improvement.

Requirement under the Standard

As part of the Energy Review, the organization identifies, prioritizes, and maintains a record of energy performance improvement opportunities.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Conduct assessments utilizing expertise from within the organization
- Acquire external assessments by third-party providers such as utilities, universities, energy efficiency organizations, etc.
- Acquire external assessments by private sector providers such as consultants, Energy Service Companies, etc.

EP Credit 1.1: Regular Assessment of Significant Energy Uses

2 Points

Intent

To ensure opportunities for energy performance improvement related to significant energy uses are continually incorporated into the energy management system

Credit Statement

Energy assessments are conducted on the designated significant energy uses at least once during the three years prior to certification or re-certification.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the

organization. The facility does not need to show implementation of all strategies on this list.

- Use internal or external experts to conduct energy assessments of identified significant uses
- Update a previous energy system assessment to take into account changes to the significant energy use

NOTE: There are many external or 3rd party organizations with energy experts, including: DOE Better Plants program and DOE Industrial Assessment Centers, utilities, regional and state energy organizations, energy service companies, consultants.

Measurement and Verification Criteria

An SEP Lead Auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence that an energy assessment has been completed on each of the significant energy uses during the three years prior to certification or re-certification

EP Credit 1.2: Energy System Assessment Standards

2 Points

Intent

To encourage use of nationally recognized energy system assessment standards and personnel certified to utilize this standard.

Credit Statement

At least one energy assessment of a significant energy use, conducted within the last three years, conforms to nationally recognized energy system assessment standards and is conducted by a professional certified to apply the standard.

Some examples of nationally recognized system assessment standards are the ASME System Assessment standards for compressed air, process heating, steam systems, and pumping systems.

If a nationally recognized energy system assessment standard is not available for a particular energy system, then this credit is not available.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the

organization. The facility does not need to show implementation of all strategies on this list.

- ASME System Assessment standards for compressed air, process heating, steam systems, and pumping systems

Measurement and Verification Criteria

An SEP Lead Auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence of an energy system assessment conducted within the last three years, for a significant energy use, that conforms to a nationally recognized energy system assessment standard
- Evidence the energy system assessment was completed by a professional certified to apply the standard

EP Credit 1.3: Continual Improvement Tools

2 Points

Intent

To encourage the inclusion of energy considerations within quality, waste, and productivity continual improvement activities or tools.

Credit Statement

Organization includes energy use and consumption as a potential factor to be improved within continual improvement activities and tools that are typically related to productivity improvements.

Activities defined as energy assessments do not meet the intent of this credit.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Energy included in Kaizen events
- Energy included in environmental waste stream analysis
- Energy incorporated within Lean analysis of product lines
- Value stream mapping includes energy streams

Measurement and Verification Criteria

An SEP Lead Auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence of the use of continual improvement activities and tools for quality, environmental or productivity
- Evidence of the use of these activities or tools to improve energy use and consumption

EP Credit 1.4: Life Cycle Costing

2 Points

Intent

To incorporate the techniques of life cycle costing into the evaluation of energy performance improvement opportunities in place of first cost analysis only.

Credit Statement

Energy performance improvement opportunities are evaluated and prioritized using the results of life cycle costing (LCC) analysis. LCC analysis is only required for energy performance improvement opportunities with a simple payback greater than two years.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Utilize third-party software or internal methods for life cycle costing evaluation
- Develop and standardize internal spreadsheet that utilizes life cycle costing
- Hire consultant to evaluate capital projects using life cycle costing techniques
- Require vendors to include LCC in their equipment bids

Measurement and Verification Criteria

An SEP Lead Auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence of life cycle costing analysis for energy performance improvement opportunities with a simple payback greater than two years
- Evidence of energy performance improvement opportunity prioritization based on or partly based on life cycle costing analysis

EP Prerequisite 2: Objectives, targets and action plans

(ISO 50001, section 4.4.6)

Intent of the Standard

To ensure that energy performance improvement opportunities are selected and planned in a manner that allows an organization to achieve the objectives and targets of the energy management system.

Requirement under the Standard

An organization takes into account the energy performance opportunities identified in the energy review when establishing objectives and targets. The organizations financial, operational and business conditions are also considered when developing objectives and targets. Action plans are established and implemented for achieving the objectives and targets.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Energy team utilizes a structured decision-making process that ensures energy improvement opportunities are understood when objectives and targets are selected.
- Actions are developed to ensure objectives and targets can be met.
- Action plans are defined.

EP Credit 2: Lower Financial Barriers

4 Points

Intent

To encourage greater implementation of energy performance improvement opportunities by providing financial incentives for implementing capital opportunities included in the energy management actions plans.

Credit Statement

Establish a separate pool of capital for energy performance improvement opportunities and utilize a financial hurdle rate that is at least the same or less stringent than hurdle rates for other capital projects in the organization.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Establish a policy to use financial criteria for energy management projects
- Documented criteria and organization position statement on how energy projects will be evaluated by management
- Set aside part of capital project fund for energy

Measurement and Verification Criteria

An SEP Lead Auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence of capital slated for energy performance improvement opportunities
- Evidence of a financial hurdle rate that is at least the same or less stringent than hurdle rates for other capital projects in the organization

INTRODUCTION - SYSTEM SUSTAINABILITY (SS)

The scorecard credits for System Sustainability represent the practices of a mature energy management system that go above and beyond the requirements of ISO 50001 in demonstrating management commitment and organizational integration to ensure the sustainability of the energy management system and associated improvements. Energy is used by everyone within the organization and is therefore the responsibility of everyone within the organization to manage. The areas of the ISO 50001 standard that are related to system sustainability include:

- Management responsibility (4.2)
- Energy policy (4.3)
- Communication (4.5.3)
- Nonconformities, correction, corrective and preventive action (4.6.4)
- Management review (4.7)

System Sustainability is the phrase used to describe how the activities of the energy management system,

- move into the every day practices of the organization,
- are addressed through roles, responsibilities and authorities that are dispersed through every part of the organization and at every level within the organization
- addresses the energy related activities of stakeholders (employees, suppliers, contractors, etc),
- promotes transparency of energy policy and objectives of the organization,
- promotes informed decision making related to energy,
- encourages energy performance improvements by employees outside of the workplace,
- are prioritized and resourced by management and demonstrated through effectiveness of the management system.

SYSTEM SUSTAINABILITY (SS)

SS Prerequisite 1: Resources

(ISO 50001, Section 4.2.1 Top management)

Intent of the Standard

To ensure that resources are allocated to operate and sustain the energy management system.

Requirement under the Standard

Provision by top management of adequate resources to set up, operate and improve the energy management system.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Annual budgets
- Capital budgets
- Project budgets
- Designation of roles, responsibilities and authority
- Management reviews

SS Credit 1.1: Resources: Energy Management Team

2 Points

Intent

To promote the active participation and involvement of top management in the organization's energy management system. Having a top manager on the energy management team helps to achieve consistent top management support.

Credit Statement

The organization's energy team includes a member of top management.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the

organization. The facility does not need to show implementation of all strategies on this list.

- Plant manager is member of energy team
- Other top managers are members of energy team

Measurement and Verification Criteria

An SEP Lead Auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence that a member of top management is on the energy team
- Evidence this member participates in energy team meetings and activities

SS Credit 1.2: Awards or Incentive Program for Energy

4 Points

Intent

To encourage the active participation and involvement of employees from across the organization in energy management and energy performance improvements.

Credit Statement

The organization establishes, implements and maintains an ongoing awards or incentive program for energy that recognizes and rewards employee accomplishments in energy management and/or energy performance improvements.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Energy project awards program
- Energy champion award
- Energy efficiency incentives

Measurement and Verification Criteria

An auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence of an awards or incentive program that recognizes employee accomplishments in energy management and/or energy performance improvements

SS Credit 1.3: Energy Professional Certifications

2 Points

Intent

To promote within the organization investment in energy management competence that meets a recognized standard.

Credit Statement

During the past three years, the organization must have invested in the education and training or in the hiring of one or more certified professionals in the field of energy management. This education also includes ongoing training required to retain certification by energy management professionals. The certified professionals must have responsibilities for and be active in the energy management activities of the organization.

For this credit, only the following professional certifications are recognized:

- CEM, Certified Energy Manager [The Association of Energy Engineers]
- Certified Practitioner in Energy Management Systems [U.S. Department of Energy (DOE), U.S. Council for Energy-Efficient Manufacturing (U.S. CEEM)]
- SEP Energy Performance Verifier [DOE, U.S. CEEM]
- CMVP Certified Measurement & Verification Professional (AEE)
- Energy Management Diploma Series (NC State Cont. Ed.)
- Certified Superior Energy Performance Auditor [DOE, U.S. CEEM]
- Certified ISO 50001 Auditor [RABQSA]

(The Certified Practitioner in Energy Management Systems and SEP Energy Performance Verifier are still under development by the U.S. CEEM and are expected to be available in 2012.)

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Hire an energy professional with one or more of the above certifications
- Invest in professional development so one or more staff members obtain at least one of the above certifications.
- Certifications included in job qualifications
- Professional development resource allocations

Measurement and Verification Criteria

An SEP Lead Auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence the organization has one or more employees with responsibilities in energy management that maintain professional certifications from the following list:
 - CEM, Certified Energy Manager [The Association of Energy Engineers]
 - Certified Practitioner in Energy Management Systems [U.S. Department of Energy (DOE), U.S. Council for Energy-Efficient Manufacturing (U.S. CEEM)]
 - SEP Performance Verifier [DOE, U.S. CEEM]
 - CMVP Certified Measurement & Verification Professional (AEE)
 - Energy Management Diploma Series (NC State Cont. Ed.)
 - Certified Superior Energy Performance Auditor [DOE, U.S. CEEM]
 - Certified ISO 50001 Auditor [RABQSA]
- Evidence the organization has invested in the education and training required to obtain or maintain this certification or evidence of hiring one or more certified professionals in the field of energy management, in the three years prior to certification or re-certification

SS Credit 1.4: Strategic Planning

2-4 Points

Intent

To ensure that prioritized energy management needs, opportunities and expectations are aligned with and incorporated into an organization's strategic priorities and to encourage participation in the U.S. Department of Energy (DOE) Better Buildings, Better Plants Program.

Credit Statement

Organizational strategic plans shall establish and address energy management priorities and provide for resource allocations consistent with those priorities. 2 points.

Top management must make a commitment to participate in the U.S. Department of Energy Better Buildings, Better Plants Program and to reduce energy intensity by 25% over 10 years. 2 points.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Use of Better Buildings, Better Plants Program
- Use of existing strategic and capital planning processes
- Review of new technologies in design and upgrade decisions with a 10-year horizon.
- Systematic energy source review
- Systematic energy assessments
- Documented procedure for organizational strategic planning
- Strategic plans

Measurement and Verification Criteria

An SEP Lead Auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit and the number of points to be awarded.

- Evidence the organizational strategic plans address energy management priorities and provide resources consistent with priorities (2 points)
- Evidence the organization has committed to participate in the U.S. Department of Energy Better Buildings, Better Plants Program (2 points)

SS Prerequisite 2: Corrective and Preventive Action

(ISO 50001, Section 4.6.4)

Intent of the Standard

To provide a means to resolve problems and to address trends.

Requirement under the Standard

Organization has established a process for corrective (problem resolution) and a process for preventive (proactive response to trends) action.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Use of existing management system processes
- Use of quality tools for problem resolutions
- Use of electronic data collection tools to generate predictive trends
- Records of corrective or preventive action

SS Credit 2: Preventive Action

2 Points

Intent

Trends identified through evaluation of data provide additional projects for energy performance improvement.

Credit Statement

Trends in energy data are identified and utilized to develop energy performance improvement opportunities. Identification of these trends and opportunities are included in the preventive action system and used as an input into the energy planning process.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Use of real-time data trends to identify projects
- Use of the energy review update process to identify trends and related projects
- Use of supplier data trends in preventive action to identify projects for energy performance improvements

Measurement and Verification Criteria

The SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence that energy data trends are being monitored
- Evidence that energy data trends are being utilized to develop energy performance improvement opportunities
- Evidence that energy data trends and opportunities are included in the preventive action system
- Evidence that the identified energy performance improvement opportunities are included in the prioritized energy performance improvement opportunities list

SS Prerequisite 3: Management Review

(ISO 50001, Section 4.7)

Intent of the Standard

To review the processes and performance of the energy management system.

Requirement under the Standard

Organization has established a frequency and process for management review.

Potential Technologies and Strategies to Meet the Standard

The following technologies and strategies are potential methods for conforming to the requirements of the standard. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Use of existing management system processes
- Use of existing management meetings
- Use of remote or electronic meeting tools

SS Credit 3: Management Review of Inputs from Stakeholders

3 Points

Intent

To encourage broader participation opportunities for stakeholders including employees.

Credit Statement

The EnMS provides a process for allowing employees and other stakeholders to provide input to energy projects, management system processes, and related energy management activities. The management review process includes an input that reviews the suggestions from stakeholders.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Electronic suggestion system
- Suggestion boxes
- Inclusion of an email box for suggestions available on the intra- and inter- net sites for the organization.
- Review of suggestions by a panel for inclusion in the appropriate processes

- Feedback to those who provided suggestions regarding the actions taken on the suggestion
- Providing credit/recognition to the person or team that provides a suggestion that is accepted and used within the system.
- Prioritized action list that is included as information in the management review inputs from the suggestions
- Inclusion of suggestion system in the preventive action system

Measurement and Verification Criteria

An SEP Lead Auditor will look for the following evidence to determine if the organization satisfies the requirements of this credit.

- Evidence the organization has a process for allowing employees and other stakeholders to provide input to energy projects, management system processes, and related energy management activities
- Evidence of employee and stakeholder input being reviewed during management review

ENERGY PERFORMANCE IMPROVEMENT CREDITS

Introduction

The Superior Energy Performance (SEP) program enables organizations with mature energy management systems to become certified by acquiring best practice credits. Credits may be obtained by implementing energy management best practices and energy performance improvements. This section of the scorecard describes the energy performance improvement credit that is available.

For an organization to qualify for the SEP Mature Energy Pathway, it must demonstrate a minimum energy performance level. The minimum level is a facility level energy performance improvement of 15% over the 10 years after the baseline period. Points are awarded to organizations that demonstrate energy performance improvement greater than 15% over the five to ten years after the baseline period.

In addition, credits are awarded for innovation in energy performance. These credits recognize industrial facilities that have implemented and continually operated sophisticated energy systems that show a commitment to superior energy performance and to a level of investment that is not typical of industry. Additional information on innovation credits follows the Energy Performance Improvement Credit section below.

Energy Performance Improvement Credit

2 - 30 Points

Intent

To demonstrate superior energy performance through improvements in energy performance above the minimum threshold of the SEP Mature Energy Pathway.

Credit Statement

Manufacturing facility must track and demonstrate facility-level energy performance improvement that is greater than 15% over the 10 years after the baseline period. (Reduced timeframe can be justified based on the requirements in the SEP Measurement and Verification Protocol for Industry.) Points are awarded based on the level of energy performance improvement achieved. Table 6, below, shows the points awarded for each level of energy performance improvement.

For electricity, energy consumption must be calculated based on the generation efficiency for electricity. For Industrial Facility Best Practice Scorecard credits,

calculation of source energy should be consistent with the requirements detailed in the Measurement and Verification Protocol for Industry.

Potential Technologies and Strategies

Energy performance improvement at a facility level is an indicator of overall performance. All continual improvement activities in an energy management system should contribute to improving the performance of an organization.

Measurement and Verification Criteria

Verification of a facility’s energy performance improvement is covered in the SEP Measurement and Verification Protocol for Industry, which is a normative reference for [ANSI] MSE 50021 and companion document to the Industrial Facility Best Practice Scorecard. Table 6, below, shows the points awarded for each level of energy performance improvement.

Table 6: Energy Performance Improvement Point System

<u>Energy Performance Improvement</u> (over 5 to 10 years)	
<u>% (min)</u>	<u>Points</u>
15%	0
16%	2
17%	4
18%	6
19%	8
20%	10
21%	12
22%	14
23%	16
24%	18
25%	20
26%	22
27%	24
28%	26
29%	28
30%	30

About Innovation Credits

The SEP Mature Energy Pathway utilizes Innovation Credits to provide program flexibility. There are five innovation credits with a total of 23 points available. These credits are for 1) Combined Heat and Power, 2) Renewable Energy Supply, and 3) Superior Performance with Benchmarks, 4) Green House Gas (GHG) Intensity Reduction from On-site Energy Use and 5) Other Innovative Actions. Points from Innovation Credits can be substituted for energy performance points. The 30 points available in energy performance can be achieved by energy performance improvement or by innovation credits (10 points maximum). The innovation credits provide flexibility for facilities with mature energy programs and proven performance improvement that are best in class and cannot continue achieving aggressive energy performance improvements each certification period. The first two innovation credits recognize commitment by an organization to invest in major infrastructure that requires large capital outlays and adoption of technologies that have strategic national importance. The third innovation credit gives recognition to organizations with world class energy management that has been recognized through a nationally known energy management benchmark. The fourth innovation credit recognizes the adoption of technologies that lead to a reduction in dependence on carbon-based energy supplies. The fifth innovation credit rewards innovative activities that lead to improved energy performance that have not been addressed elsewhere in the Industrial Facility Best Practice Scorecard.

All of the innovation credits are mutually exclusive. Double counting is not allowed. If an organization has implemented a technology that qualifies under multiple innovation credits, it must decide which innovation credit is most appropriate.

Innovation Credit 1: Combined Heat and Power

1-5 Points

Intent

To promote utilization of Combined Heat and Power (CHP) and increase energy utilization of existing fuel sources.

Credit Statement

Operations with simultaneous electricity and thermal energy use have completed analysis of CHP. The CHP feasibility study is generally conducted by an independent contractor and contains details such as proposed size of the system, prime mover employed, heat recovery method and application, system efficiency, avoided cost and expected investment. Additional points are awarded for installing, operating and maintaining a CHP system within the three years prior to application for SEP program

certification. CHP systems installed before the three year period that are still operating are also eligible for additional points.

The minimum CHP efficiency is 60% as expressed by the following equation:

$$\text{CHP Efficiency} = \frac{[\text{Electrical Output of Generator (BTU)} + \text{Thermal Energy Recovered (BTU)}]}{\text{CHP Fuel Input (BTU)}}$$

The fuel energy input is based on the lower heating value of the fuel. The point scale for this credit is shown in Table 7, below. The site energy is defined as the total of all energy sources that cross the organizational boundary or fence line. This also includes that portion of raw material that is converted to an energy source in the process. The supplied energy of the CHP system is based on electrical output of the generator and the thermal energy recovered.

For a new system installed within 3 years prior to application for SEP certification, one point is awarded for the feasibility study and additional points will be awarded based on the percentage of on-site annual energy consumption replaced by the CHP system, as long as the CHP system has been operating for at least one year.

For existing CHP systems, points for operating the system is based on the percentage of the three-year average annual site energy consumption that is replaced by the electrical and thermal energy output of the CHP system.

Table 7: CHP Innovation Credit Point Scale

Action Completed	Points
Combined heat and power feasibility study	1
% site energy supplied by CHP	
20%	2
40%	3
60%	4
80%	5

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Diesel engine generator with heat recovery
- Back-pressure steam turbine
- Gas turbine with heat recovery
- Organic Rankine cycle (ORC)
- Steam turbine bottoming cycle

Measurement and Verification Criteria

The SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit and the number of points to be awarded.

- Evidence of a CHP feasibility study completed within the last three years that includes details such as proposed size of the system, prime mover employed, heat recovery method and application, system efficiency, avoided cost and expected investment (1 point)
- The following evidence will be used to determine if further points will be awarded for this credit (up to 5 points total can be achieved for this credit).
 - Evidence a CHP system has been operating for at least 12 months
 - Evidence of CHP efficiency determination
 - Evidence of determination of site energy consumption for the three year period prior to SEP certification or re-certification
 - Evidence of unit operation time
 - Evidence of determination of percent site energy supplied by CHP for the three year period prior to SEP certification or re-certification

Innovation Credit 2: Renewable Energy Supply

1-5 Points

Intent

Reduce environmental impact, GHG emissions and carbon footprint by converting to on-site renewable energy resources.

Credit Statement

Available renewable energy resources have been investigated (identified, quantified and priced) and/or actually utilized. The renewable energy feasibility study is generally conducted by an independent contractor and contains details such as proposed size of the system, renewable energy resource recovered, proposed renewable energy hardware used, system efficiency, avoided cost, expected investment and potential investment cost off-sets and tax credits available. Only one point of this credit is available for completing renewable energy resource feasibility studies even if multiple studies are completed for different renewable energy resources. Additional points are awarded for installing and operating a renewable energy system. These points are based on the percentage of annual site energy consumption that is supplied by a renewable energy resource.

For a new installation installed within 3 years prior to application for SEP certification, one point is awarded for the feasibility study and additional points will be awarded based on the percentage of annual site energy consumption replaced by renewable energy resources, as long as the renewable energy system has been operating for one year.

For existing renewable energy systems, points for operating the system are based on the percentage of the three year average on-site annual energy consumption that is replaced by renewable energy resources.

Table 8 below shows the point scale used for this credit. As an example, if 3% of site energy requirements are replaced with renewable energy supply, then 2 points will be awarded.

Site energy requirements are defined as all energy sources that cross the organizational boundary or fence line, plus the energy outputs of the renewable energy system that is utilized by the organization. The energy sources that cross the fence line also include the portion of raw materials converted for energy use. The percentage of site renewable energy consumed is determined by the ratio of renewable energy supply divided by the total site energy requirement (see equation below).

$$\% \text{ Renewable Energy} = \frac{[\text{Energy Output of Renewable system (Btu)}] / \text{Site Energy Consumption (BTU)}}{1} \times 100\%$$

Table 8: Renewable Energy Supply Innovation Point Scale

Actions Taken	Points
Feasibility study for renewable energy supply	1
renewable energy, % of annual site energy consumption	
3%	2
6%	3
9%	4
12%	5

Renewable energy is defined in the Federal EPACT 2005. Renewable energy in this legislation includes the following resources:

- Biomass
- Geothermal
- Solar
- Wind
- Landfill Gas
- Municipal Solid Waste
- Ocean
- Incremental Hydro

Biomass is lignin waste segregated and non-hazardous or solid non-hazardous cellulosic material derived from forest resources, wood waste, agricultural waste, or plants grown exclusively as electric fuel. Renewable energy from the ocean includes wave, tidal, current, and thermal resources. For a variety of reasons it is no longer realistic to build new hydroelectric projects in the United States, but incremental hydro takes advantage of the advancements in hydro turbine design and manufacturing technology to provide cost effective incremental improvements in energy generation. The increased efficiency offered by modern hydro turbine design allows more energy generation without increasing water use or changing the basic operation of the facility.

Purchased renewables do not qualify for this credit.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit.

- On-site renewable energy evaluation, study or analysis

- Installation of renewable energy system including solar thermal, solar PV, wind, geothermal, biomass

Measurement and Verification Criteria

The SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit and the number of points to be awarded.

- Evidence of a renewable feasibility study completed within the last three years that includes details such as proposed size of the system, renewable energy resource recovered, proposed renewable energy hardware used, system efficiency, avoided cost, expected investment and potential investment cost offsets and tax credits available (1 point)
- The following evidence will be used to determine if further points will be awarded for this credit (up to 5 points total can be achieved for this credit).
 - Evidence a renewable energy system has been operating for at least 12 months
 - Evidence of determination of site energy consumption for the three year period prior to SEP certification or re-certification
 - Evidence of determination of percent site energy consumption supplied by renewable energy system for the three year period prior to SEP certification or re-certification

Innovation Credit 3: Superior Performance with Benchmarks

1 - 3 Points

Intent

To permit organizations to demonstrate superior energy performance through its ranking within a recognized external benchmark.

Credit Statement

An organization must demonstrate a ranking within the top levels of a recognized external benchmark in accordance with the table below.

Table 9: Benchmarking Credit Points

Company Position Relative to Benchmark Level	Points
Top 25%	1
Top 10%	2
Top 5%	3

This credit addresses the company performance relative to the external benchmark. Credit for company use of external benchmarks is addressed in DM Credit 2.2. Credits can be awarded for DM Credit 2.2 and Innovation Credit 3.

A recognized external benchmark is typically developed by credible organizations such as industry associations, government entities, or consulting groups.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit.

- The external benchmarks are indicators for overall energy performance. All continual improvement activities in an energy management system should contribute to improving the performance of an organization that leads to superior energy performance as recognized under the benchmark.

Measurement and Verification Criteria

The SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit and the number of points to be awarded.

- Evidence the organization demonstrates a ranking within the top levels of a recognized external benchmark

Innovation Credit 4: GHG Intensity Reduction from On-site Energy Use

2-5 Points

Intent

To promote the use of technologies and strategies that reduce reliance on carbon-based fuels consumed on-site.

Credit Statement

Demonstrate a reduction in Greenhouse Gas (GHG) intensity that is greater than the Energy performance improvement claimed by the organization during the 10-year performance period of the SEP Mature Energy Pathway for the same scope and boundary.

A GHG intensity ratio is defined as the ratio of Tons of carbon emissions from current energy consumption to baseline carbon emissions. Current energy consumption and baseline energy consumption are based on the same normalized models used for calculating energy performance improvement (see SEP Measurement and Verification Protocol for Industry). The tons of carbon emissions are based on the emissions that result only from nonrenewable, carbon-based energy consumed by the organization. For electricity, the emissions are based on source fuel consumed for electricity generation and source fuel should be based on the national fuel mix for production of electricity. To achieve this credit, the reduction in GHG intensity ratio over the 10 years after the baseline period (reduced timeframe may be justified based on the SEP Measurement and Verification Protocol) must be greater than the Superior Energy Performance Energy Performance Indicator (SEnPI) reduction during the same time period. The equation below defines the SEnPI in the SEP Measurement and Verification Protocol for Industry.

$$\text{SEnPI} = \text{BTU}^*_{\text{RptPd}} / \text{BTU}^*_{\text{Base}}$$

The GHG Intensity ratio is calculated from the SEnPI by using the carbon emission factors (CEF) for the source energy fuels mix during the current and base years. The GHG intensity ratio reduction is calculated by,

$$\text{GHG Intensity Ratio} = (\text{BTU}^*_{\text{RptPd}} \times \text{CEF}_{\text{RptPd}}) / (\text{BTU}^*_{\text{Base}} \times \text{CEF}_{\text{Base}})$$

Table 10 below shows the range of points that are awarded for this credit based on the value of the fraction of GHG Intensity Ratio to SEnPI.

Table 10: GHG Intensity Reduction Point Scale

GHG Intensity Ratio / SEnPI	Points
0.9	2
0.8	3
0.7	4
0.6	5

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit. The facility selects strategies appropriate for the organization. The facility does not need to show implementation of all strategies on this list.

- Process waste heat recovery
- Combined Heat and Power System

Measurement and Verification Criteria

The SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit and the number of points to be awarded.

- Evidence of determination of GHG intensity ratio
- Evidence of CEF determination
- Evidence of ratio of GHG intensity ratio to SEnPI

Innovation Credit 5: Other Innovative Actions (For Comment Only*)

1 - 5 Points

Intent

To permit an organization to demonstrate superior energy performance through its implementation of innovative actions, that result in energy performance improvement, that are not addressed within the Best Practice Scorecard.

Credit Statement

An organization must achieve significant energy performance improvement by implementation of technologies and strategies that are innovative and beyond the “business as usual” of other sites in their industry sector at the two digit NAICS code; these technologies and strategies cannot be addressed elsewhere within the Best Practice Scorecard.

The organization will be expected to complete an Other Innovation Credit Application and submit it to the SEP Administrator before the organization schedules the certification audit. (It is strongly suggested that the facility submit this information as early as possible.) This application will require the following types of information.

- A description of the innovative action
- The intent of the innovative action
- The metric utilized to determine improvement
- The energy performance improvement achieved
- The justification for credit acceptance

One to five points will be awarded for each documented and accepted innovative action. Only five points towards the total energy performance points can be achieved from other innovative actions.

Potential Technologies and Strategies

The following technologies and strategies are potential methods for satisfying the requirements of this credit.

- During the performance period, implement and maintain innovative actions, that are not addressed in the Best Practice Scorecard, that result in substantial energy performance improvement.

Measurement and Verification Criteria

The SEP Performance Verifier will look for the following evidence to determine if the organization satisfies the requirements of this credit and the number of points to be awarded.

- Evidence of description and intent of innovative action

- Evidence of reported energy performance improvement
- Evidence of performance improvement metric including data, collection frequency, and trends
- Evidence technology or strategy has been deployed

* This credit cannot be used for certification. The purpose of this credit is to gain input on potential changes to this scorecard.

- **ANNEXES**

ANNEX A. Normative Annex

This normative annex contains information regarding the auditing of the Industrial Facility Best Practice Scorecard credits. A normative annex is considered a requirement.

The table below designates which auditor—the SEP Lead Auditor or the SEP Performance Verifier—will be responsible for auditing each of the credits. The table also designates which credits will be audited during each stage of the audit. Surveillance audits are performed in accordance with MSE 50028.

Table A-1: Auditing Schedule and Responsibilities

Credit	Description		Auditor**	Stage 1	Stage 2
DM 1.1	Data availability		LA		X
DM 1.2	Improve data collection and analysis		PV		X
DM 2.1	EnPI updating		PV		X
DM 2.2	Establish benchmarks		PV		X
DM 3.1	Submeters		PV		X
DM 3.2	Cost centers		PV		X
SU 1	Facility energy balance		PV		X
SU 2	Designation of significant energy uses		PV		X
SU 3.1	Equipment repair and replacement policy		PV		X
SU 3.2	Utilize energy-efficient design		PV		X
SU 4.1	Energy-efficient maintenance practices		LA		X
SU 4.2	EnPIs for significant energy uses		PV		X
ES 1.1	Include procurement personnel on energy team		LA		X
ES 1.2	Demand optimization		PV		X
EP 1.1	Regular assessment of significant energy uses		LA		X
EP 1.2	Energy system assessment standards		LA		X
EP 1.3	Continual improvement tools		LA		X
EP 1.4	Life cycle costing		LA		X

Credit	Description		Auditor**	Stage 1	Stage 2
EP 2	Lower financial barriers		LA		X
SS 1.1	Resources: energy management team		LA		X
SS 1.2	Awards or incentive program for energy		LA		X
SS 1.3	Energy professional certifications		LA		X
SS 1.4	Strategic planning		LA		X
SS 2	Preventive action		PV		X
SS 3	Management review of inputs from stakeholders		LA		X
Energy Performance Credit	Energy performance credit		PV		X
Innovation Credit 1	Combined heat and power		PV		X
Innovation Credit 2	Renewable energy supply		PV		X
Innovation Credit 3	Superior performance with benchmarks		PV		X
Innovation Credit 4	GHG intensity reduction from on-site energy use		PV		X
Innovation Credit 5	Other innovative actions		PV	X	X

*LA is the SEP Lead Auditor that audits the energy management system; PV is the SEP Performance Verifier.

The auditors will not audit the Intent and Potential Technologies and Strategies sections of each scorecard credit during the audit. These are for guidance only.

[ANSI] MSE 50021 also contains some additional requirements for organizations seeking SEP certification. These requirements will be audited by the SEP Lead Auditor.

Industrial Facility Best Practice Scorecard Audit Duration

The table below explains the expected duration of the on-site (Stage 2) portion of the Industrial Facility Best Practice Scorecard audit. The audit length is expected to vary based on the certification level.

Table A-2: Industrial Facility Best Practice Scorecard Audit Duration

Certification Level	Industrial Facility Best Practice Scorecard Audit Days
Silver	1
Gold	1.5
Platinum	2

ANNEX B. Informative Annex

The Industrial Facility Best Practice Scorecard Tool may be useful for an organization in preparing for an audit.