

CEESM 2016 Strategic Energy Management Program Summary



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1 Executive Summary

The *CEE Industrial Strategic Energy Management Program Summary* collects information about the design, delivery, and results of fourteen industrial strategic energy management (SEM) programs across the US and Canada. The purpose of this document is to educate key stakeholders regarding industrial SEM program approaches and impacts and to inform program regulation, evaluation, and design. All of the programs described in this Program Summary are voluntary, ratepayer funded programs offered to industrial businesses.

The CEE SEM Minimum Elements¹ defines strategic energy management in the following way: *Strategic Energy Management can be defined simply as taking a holistic approach to managing energy use in order to continuously improve energy performance by achieving persistent energy and cost savings over the long term. It focuses on business practice change from senior management through shop floor staff, affecting organizational culture to reduce energy waste and improve energy intensity. SEM emphasizes equipping and enabling plant management and staff to impact energy consumption through behavioral and operational change. While SEM does not emphasize a technical or project centric approach, SEM principles and objectives may support capital project implementation.*

SEM programs use several different approaches, including cohort-based energy management trainings, funding support for on-site energy managers, and implementation of energy information technologies. Rather than suggest that any intervention or delivery strategy is the most effective approach to SEM implementation, this Program Summary intends to demonstrate the variation of approaches being used today to drive SEM implementation.

To date, US and Canadian SEM programs have served 707 industrial facilities, a 68 percent increase from the number measured by CEE in 2014. The programs discussed below reported providing SEM services to 287 industrial facilities in 2015. Ten programs reported a combined SEM program budget total of \$20.4 million for 2015.

The data in this Program Summary was collected by CEE using a survey fielded between April and July 2016. Because each participating program administrator uses different program development processes and schedules, this document aims to provide the best available snapshot of these programs as of the date of its publication.

¹ CEE SEM Minimum Elements (2014):

https://library.cee1.org/sites/default/files/library/11283/SEM_Minimum_Elements.pdf

2 Strategic Energy Management Program Overview

All survey respondents indicated that they use the CEE SEM Minimum Elements in some aspect of program design or delivery: to inform SEM program design, as part of a customer-facing resource such as a memorandum of understanding or energy management assessment, or in a program RFP for SEM implementation services.

Figure 1. Use of CEE SEM Minimum Elements

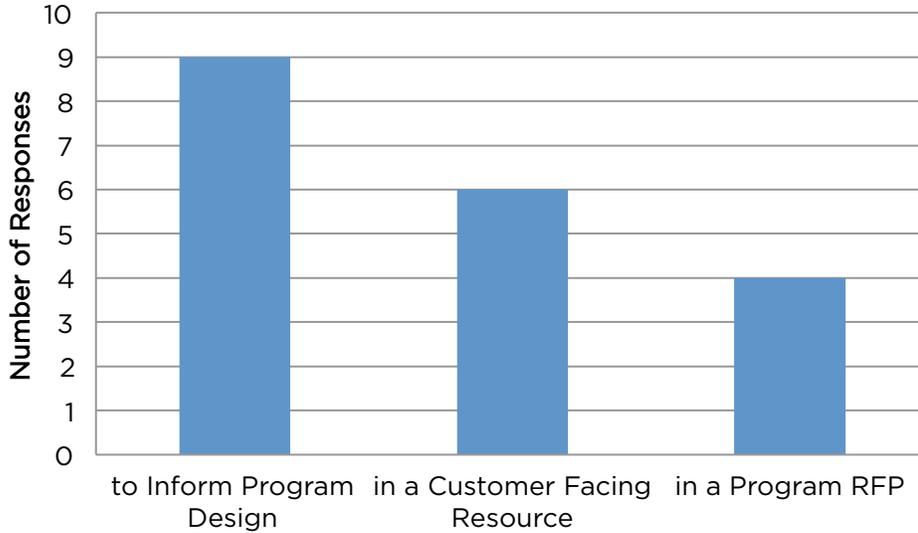


Figure 2. Programs Launched by Year

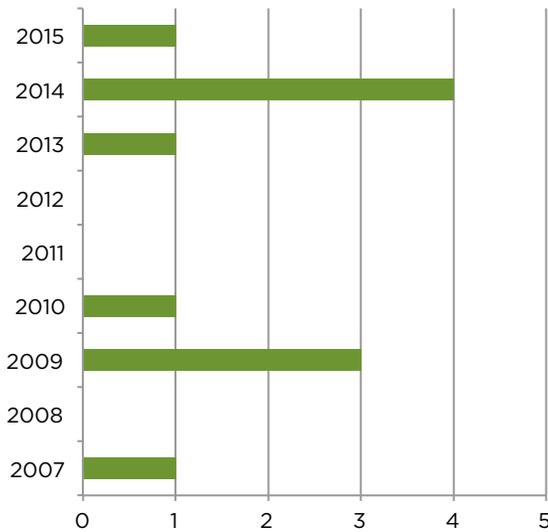
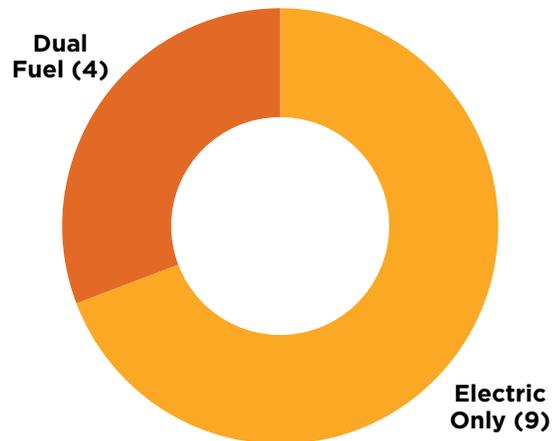


Figure 3. SEM Program Fuel Eligibility

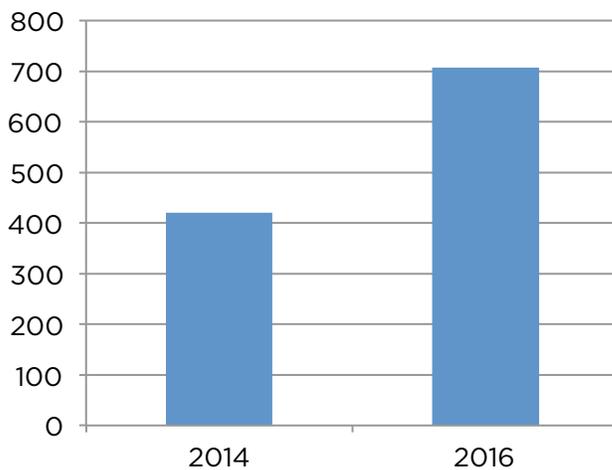


The four dual fuel SEM programs noted in Figure 3 include two dual fuel utilities and two program partnerships between electric and natural gas utilities (Com Ed with Nicor Gas and Southern California Edison with SoCalGas).

2.1 Binational Impacts of SEM Programs

Figure 4 represents the total number of industrial facilities served by SEM programs since their inception at the time of data collection by CEE, in 2014 and 2016. As of 2016, SEM programs have served 707 industrial sites, a 68 percent increase from 2014. Almost half of the growth in customers served between 2014 and 2016 is attributable to two programs, Energy Trust of Oregon and AEP Ohio. The remaining growth is explained by new SEM programs and moderate growth (in terms of customers served) at other programs.

Figure 4. **Number of Industrial Facilities Served**



2.1.1 2015 SEM Program Budgets and Energy Savings

| | |
|---|-----------------------------|
| 2015 SEM Program Budgets Total (10 programs reporting) | \$20.4 Million |
| <p>Ten program administrators shared information on their SEM program budgets in 2015. The total amount of those ten SEM program budgets is \$20.4 million. Of the ten programs reporting, five show SEM program budgets of \$0.5 million or less, and five show budgets of \$1.5 million or greater.</p> | |
| 2015 Estimated Electricity Savings (8 programs reporting) | 78.4 GWh² |
| OMB savings only (5 programs reporting) | 32.3 GWh³ |

² This energy savings figure excludes an outlier – BC Hydro Powersmart – because (1) unlike other programs in this Summary, BC Hydro’s claimed savings derived entirely from capital projects implemented by SEM program participants, and (2) it would significantly distort the binational total if included (279 GWh).

OMB and Capital Project Savings (3 programs reporting)

46.1 GWh⁴

Eight program administrators shared information on SEM program estimated electric energy savings for 2015. A ninth program provided savings data that is not included in this total (see explanation in footnote 2). Total estimated electric energy savings achieved by these eight SEM programs in 2015 is 78.4 GWh. Of the eight programs reporting savings information, five claim only operations, maintenance, and behavior (OMB) savings through the SEM program. The total OMB savings achieved by these five SEM programs in 2015 is 32.3 million kWh. The remaining three programs reporting SEM savings claim both OMB and capital project savings through the SEM program. The total SEM program savings achieved by these programs in 2015 is 46.1 million kWh.

2015 Estimated Natural Gas Savings (2 programs reporting)

434,294 therms

Two programs reported estimated natural gas savings from SEM programs in 2015. The two programs saved a total of 434,294 therms. One of these programs is offered by a dual-fuel program administrator, and the other is a joint program offered by one electric and one natural gas utility.

2.2 Energy Savings Attribution and Program Incentives

Figure 5. **Energy Savings Attributed to SEM**

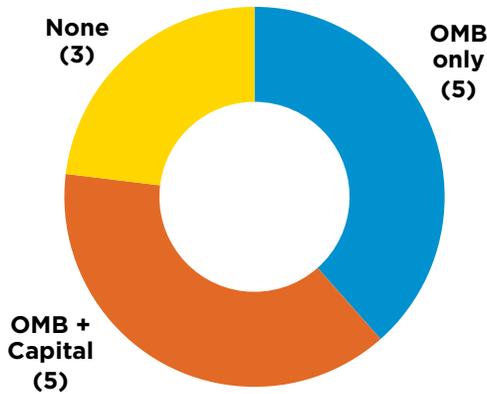
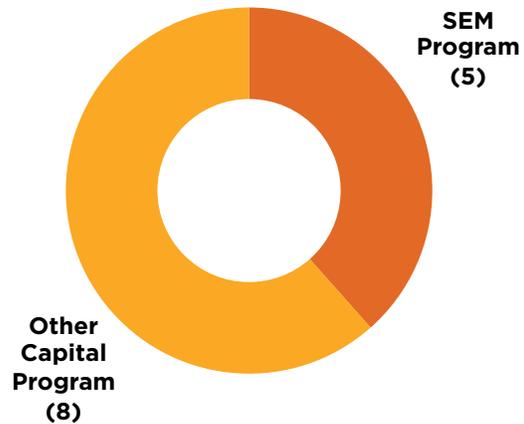


Figure 6. **Capital Measure Attribution**



Of the ten respondents in Figure 5 that claim operations, maintenance, and behavior savings, six provide a performance-based incentive. Of the four that do not provide a performance-based incentive, three respondents do not offer any financial incentives as part of SEM, and the fourth provides incentives only for capital project savings.

³ See Footnote 2

⁴ See Footnote 2

In Figure 6, of the four programs that do not attribute energy savings to the SEM program, three attribute energy savings achieved by SEM participants to other offerings. The fourth program was a pilot in its first year in 2015, and did not claim savings.

Figure 7. **Assumed Persistence of OMB Savings**

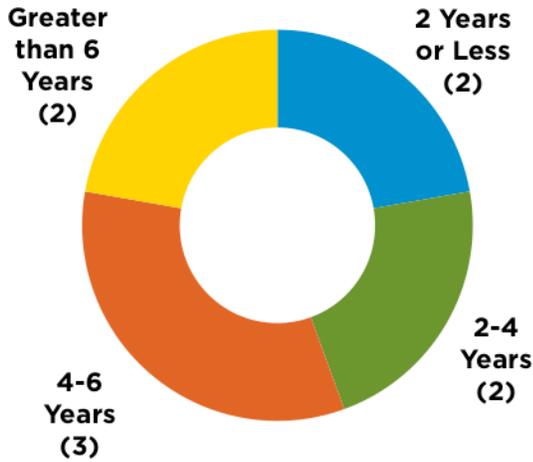


Figure 8. **SEM Program Incentives**

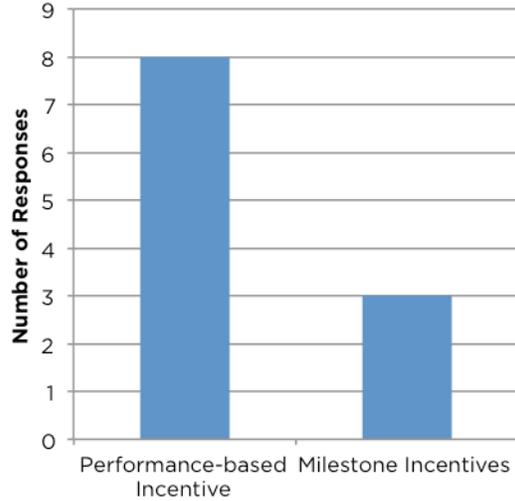


Figure 7 illustrates the lack of consensus across SEM programs about the persistence of operations-, maintenance-, and behavior-based savings achieved by SEM participants. Note that different SEM offerings from the same program administrator are counted here as separate offerings if they use different assumptions regarding OMB measure persistence.

Figure 9. **Engagement Approach**

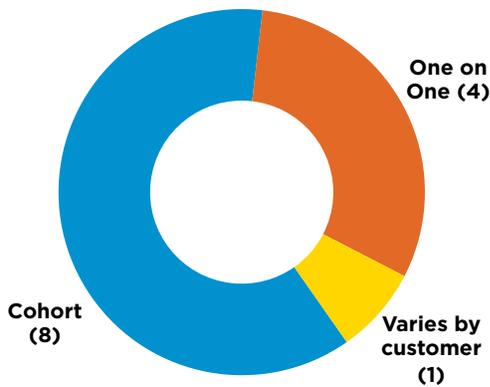
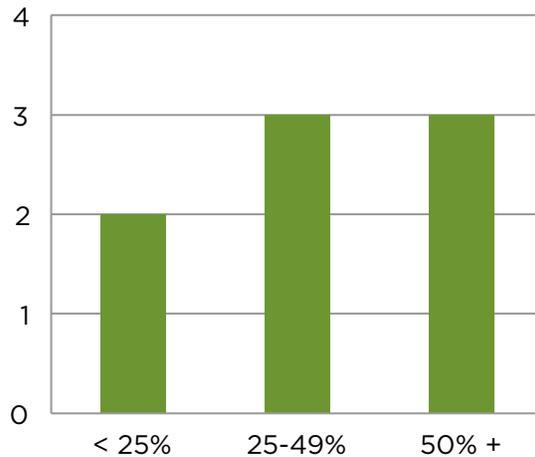


Figure 10. **Share of customer meetings conducted as cohort**



2.3 SEM Customer Engagement

Figures 9 and 10 show that 69 percent of reporting programs include a cohort training-learning component in the SEM program. However, among the eight respondents that report using cohort engagement, 63 percent report that cohort meetings make up less than half of total SEM meetings with SEM participants.

Figure 11. SEM Engagement Duration

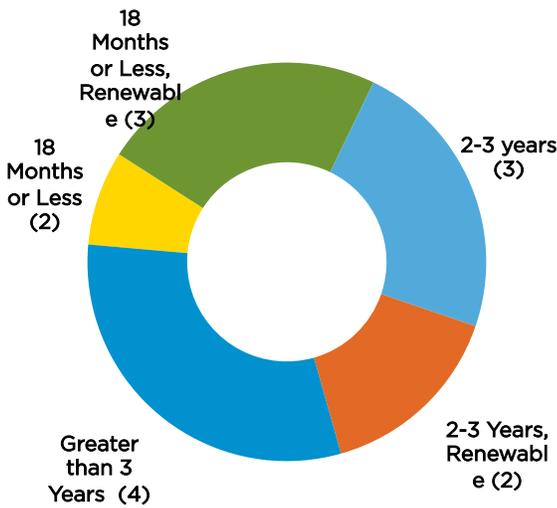


Figure 12. Engagement Duration 2014-2016

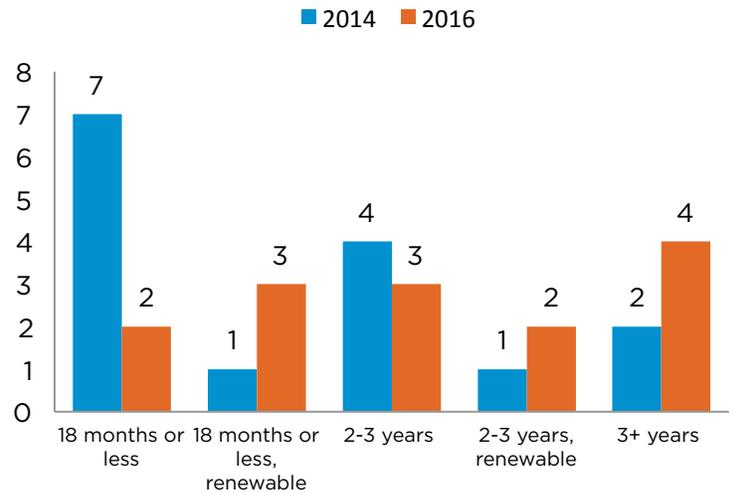


Figure 12 illustrates a shift toward longer active SEM engagements with customers, from 2014 to 2016. The number of programs with an active engagement period of 18 months or less dropped from nearly half the respondents in 2014 to only two in 2016. The figure shows a corresponding increase in the number of SEM programs with a renewable engagement period (five in 2016 vs. only two in 2014), and programs with a duration of three years or longer.

2.4 Program Incentives and Energy IT Support

Figure 13. Support for Energy IT

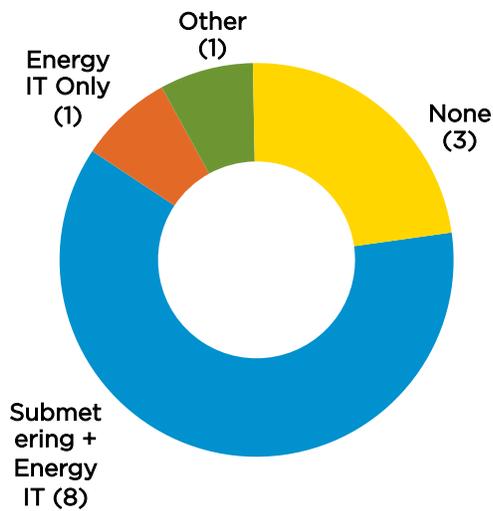


Figure 14. Support for Energy IT by Year

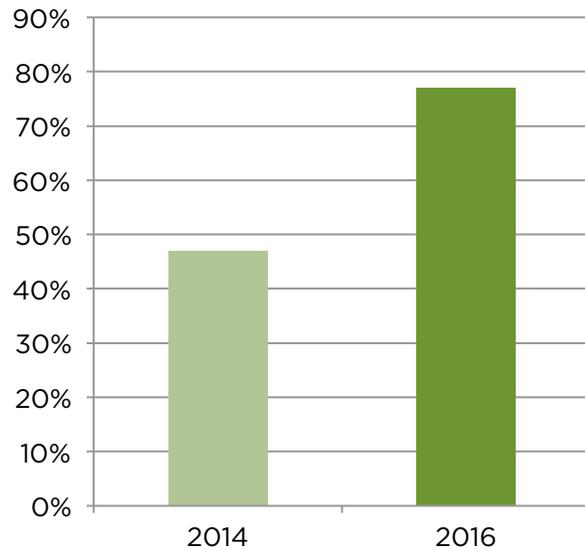


Figure 13 shows that 77 percent of program respondents provide support for implementation of energy information technologies at SEM participant sites. This includes two respondents that provide energy IT support on an as-needed basis or as part of a separate but related program offering.

Figure 14 illustrates the growth in support for energy IT among administrators of SEM programs, from 47 percent in 2014 to 77 percent in 2016. The change is due to new program respondents in 2016 that provide support for energy IT and replaced 2014 respondents that did not. There was no change in energy IT support among the programs that provided data to CEE in the 2014 Program Summary.

Ameren Illinois

| SEM PROGRAM OVERVIEW | | |
|---|---|---|
| SEM program name | Ameren Illinois Energy Efficiency SEM Program | |
| SEM program website | www.actonenergy.com | |
| Year SEM program launched | 2015 | |
| Number of SEM customers served to date | 8 | |
| Number of SEM customers served in 2015 | 8 | |
| Estimated electric savings attributed to SEM in 2015 | Not available yet | |
| Estimated natural gas savings attributed to SEM in 2015 | N/A | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | ✓ |
| | Included in program RFP or other procurement materials | |
| | Used to inform customer-facing SEM program materials | |
| | Other: | |
| REGULATORY CONTEXT | | |
| The program is required to report the following information to regulators | Energy savings, kWh | ✓ |
| | Demand savings, kW | |
| | Persistence of savings | |
| | Statistical significance of savings | |
| | Program budget or cost | |
| | Customer satisfaction | ✓ |
| Other: | | |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | ✓ |
| | Utility cost test (UCT) | |
| | Participant cost test (PCT) | |
| | Ratepayer impact measure test (RIM) | |
| SEM-related savings claimed | Operational, maintenance, or behavior-based energy savings, attributed to SEM program | |
| | Capital measure savings, attributed to SEM program | |
| | Capital measure savings, attributed to another program | |
| | Other: | |
| Persistence term used for O&M savings attributable to SEM implementation | N/A | |
| PROGRAM DELIVERY | | |

Ameren Illinois

| | | |
|--|--|---|
| SEM program go-to-market strategy | | |
| SEM participant engagement model | Participants engaged as a cohort | |
| | Participants engaged as individual organizations | ✓ |
| | Some participants are engaged as a cohort, others as individuals | |
| Approximate share of participant meetings conducted as a cohort | N/A | |
| Activities typically delivered in cohort meetings | N/A | |
| SEM participant screening criteria | Annual energy consumption | ✓ |
| | Energy savings potential | |
| | Energy management commitment | ✓ |
| | Participation in energy efficiency program offerings | |
| | Other: | |
| Length of SEM program engagement | Two years with the option for renewal | |
| PROGRAM DESIGN | | |
| Program support for obtaining and demonstrating participant commitment to SEM | Establish policies or goals | ✓ |
| | Make a commitment of resources (personnel, financial) | ✓ |
| | Sign a contract or memorandum of understanding | ✓ |
| Requirement to demonstrate results in order to remain in the program? | | |
| Program support for energy assessment and planning | Conduct an energy management assessment | ✓ |
| | Develop an energy map | ✓ |
| | Perform detailed energy studies or audits | ✓ |
| | Establish performance metrics | ✓ |
| | Develop a project register or other project plan | ✓ |
| | Other: Staffing grant for an energy manager | ✓ |
| Follow-up energy management assessment | None | |
| Program support for education and training | Energy management professional certification (such as CEM) | |
| | Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization) | ✓ |
| | Management system training for executives or managers | |
| | Development or maintenance of an energy baseline model | ✓ |
| | Energy management information system training | ✓ |
| | Other: | |

Ameren Illinois

| | | |
|---|---|---|
| Other employee engagement | The program provides participant staff access to webinars on energy efficiency topics | |
| Program support for energy IT and energy management information systems (EMIS) | Installation of submeters on end use equipment | ✓ |
| | Energy information technologies | ✓ |
| | Other: | |
| | Energy IT-EMIS support available to all SEM participants | ✓ |
| Program support for energy IT-EMIS selection and design | The program helps customers select EMIS that meets their objectives | |
| Financial support for energy IT-EMIS | Incentive amounts vary | |
| SEM program incentive structure | Pay for performance: | |
| | Capital measure incentives: | ✓ |
| | "Milestone" incentives: | |
| Monitoring and reporting SEM impacts | Performance data is collected by the SEM participant; means of collection varies by participant | |
| Program goals for SEM participants post-implementation | | |
| Post-implementation SEM support | Energy management assessments | |
| | Maintain participant energy baseline model | |
| | Ongoing support for energy IT-EMIS | |
| | Training updates for participant staff | |
| | Other: | |
| Support for other SEM pathways | ENERGY STAR Challenge for Industry | |
| | DOE Better Plants Challenge | |
| | ISO 50001 | |
| | Superior Energy Performance | |
| | Other: | |

BC Hydro

| SEM PROGRAM OVERVIEW | | |
|--|--|---|
| SEM program name | Strategic Energy Management Program – Industrial Energy Manager | |
| SEM program website | www.bchydro.com/powersmart/business/programs/energy-management/iem.html | |
| Year SEM program launched | First Industrial Energy Manager (IEM contract): 2002 First IEM with SEMP contract: 2007 Current state of program launched: 2012 | |
| Number of SEM customers served to date | IEM contracts at unique customers: 67 | |
| Number of SEM customers served in 2015 | 43 | |
| Estimated electric savings attributed to SEM in 2015 | 190 GWh (from Capital and O&M projects completed by IEMs, not solely SEM savings) | |
| Estimated natural gas savings attributed to SEM in 2015 | N/A | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | ✓ |
| | Included in program RFP or other procurement materials | |
| | Used to inform customer-facing SEM program materials | ✓ |
| | Other: | |
| REGULATORY CONTEXT | | |
| The program is required to report the following information to regulators | Energy savings, kWh | ✓ |
| | Demand savings, kW | |
| | Persistence of savings | |
| | Statistical significance of savings | |
| | Program budget or cost | ✓ |
| | Customer satisfaction | |
| | Other: | |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | ✓ |
| | Utility cost test (UCT) | |
| | Participant cost test (PCT) | |
| | Ratepayer impact measure test (RIM) | ✓ |
| Program claimed the following types of savings resulting from SEM activities | Operational, maintenance, or behavior-based energy savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to another program | |
| | Other: | |
| Persistence term used for O&M savings attributable to SEM implementation | Five years if a sustainment plan is provided, otherwise two years | |
| PROGRAM DELIVERY | | |

BC Hydro

| SEM PROGRAM OVERVIEW | | | | | | | | | | | |
|---|---|--|---|---|---|---|---|--|--|--------|--|
| SEM program go-to-market strategy | <p>The minimum annual customer consumption for BC Hydro's SEMP program is 10 GWh per year of electricity consumption. All BC Hydro customers with annual consumption above 4 GWh per year have a BC Hydro Key Account Manager (KAM) assigned to them. KAMs will meet regularly with their customers to discuss energy efficiency opportunities. KAMs sell the SEM Program to their 10GWh+ customers, and those that are ready to engage can bring on a full-time Industrial Energy Manager (IEM) who is dedicated to developing and implementing a long-term strategic plan for the organization, including employee engagement, policy, energy monitoring and targeting, and capital project implementation.</p> <p>A new offer for 4-20Gwh customers launched in September 2016, based on the cohort model that is already used by BPA and Energy Trust of Oregon.</p> | | | | | | | | | | |
| SEM participant engagement model | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Participants engaged as a cohort</td> <td style="text-align: center; width: 50px;">✓</td> </tr> <tr> <td style="padding: 2px;">Participants engaged as individual organizations</td> <td style="text-align: center;">✓</td> </tr> <tr> <td style="padding: 2px;">Some participants are engaged as a cohort, others as individuals</td> <td></td> </tr> </table> | Participants engaged as a cohort | ✓ | Participants engaged as individual organizations | ✓ | Some participants are engaged as a cohort, others as individuals | | | | | |
| Participants engaged as a cohort | ✓ | | | | | | | | | | |
| Participants engaged as individual organizations | ✓ | | | | | | | | | | |
| Some participants are engaged as a cohort, others as individuals | | | | | | | | | | | |
| Approximate share of participant meetings conducted as a cohort | N/A | | | | | | | | | | |
| Activities typically delivered in cohort meetings | N/A | | | | | | | | | | |
| SEM participant screening criteria | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Annual energy consumption: 10 GWh annually</td> <td style="text-align: center;">✓</td> </tr> <tr> <td style="padding: 2px;">Energy savings potential: A consideration, but no defined minimum threshold</td> <td style="text-align: center;">✓</td> </tr> <tr> <td style="padding: 2px;">Energy management commitment: Participant must commit to all program requirements (EMA completion, SEM Plan completion signed off on by sr. management, energy policy, Energy Monitoring & Targeting Level 1 model completion, etc.) and provide a dedicated full-time, on-site energy manager who is an employee of the company.</td> <td style="text-align: center;">✓</td> </tr> <tr> <td style="padding: 2px;">Participation in energy efficiency program offerings</td> <td></td> </tr> <tr> <td style="padding: 2px;">Other:</td> <td></td> </tr> </table> | Annual energy consumption: 10 GWh annually | ✓ | Energy savings potential: A consideration, but no defined minimum threshold | ✓ | Energy management commitment: Participant must commit to all program requirements (EMA completion, SEM Plan completion signed off on by sr. management, energy policy, Energy Monitoring & Targeting Level 1 model completion, etc.) and provide a dedicated full-time, on-site energy manager who is an employee of the company. | ✓ | Participation in energy efficiency program offerings | | Other: | |
| Annual energy consumption: 10 GWh annually | ✓ | | | | | | | | | | |
| Energy savings potential: A consideration, but no defined minimum threshold | ✓ | | | | | | | | | | |
| Energy management commitment: Participant must commit to all program requirements (EMA completion, SEM Plan completion signed off on by sr. management, energy policy, Energy Monitoring & Targeting Level 1 model completion, etc.) and provide a dedicated full-time, on-site energy manager who is an employee of the company. | ✓ | | | | | | | | | | |
| Participation in energy efficiency program offerings | | | | | | | | | | | |
| Other: | | | | | | | | | | | |
| Length of SEM program engagement | Two-year renewable performance contracts for each IEM | | | | | | | | | | |
| PROGRAM DESIGN | | | | | | | | | | | |
| Program support for obtaining and demonstrating participant commitment to SEM | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Establish policies or goals</td> <td style="text-align: center;">✓</td> </tr> <tr> <td style="padding: 2px;">Make a commitment of resources (personnel, financial)</td> <td style="text-align: center;">✓</td> </tr> <tr> <td style="padding: 2px;">Sign a contract or memorandum of understanding</td> <td style="text-align: center;">✓</td> </tr> </table> | Establish policies or goals | ✓ | Make a commitment of resources (personnel, financial) | ✓ | Sign a contract or memorandum of understanding | ✓ | | | | |
| Establish policies or goals | ✓ | | | | | | | | | | |
| Make a commitment of resources (personnel, financial) | ✓ | | | | | | | | | | |
| Sign a contract or memorandum of understanding | ✓ | | | | | | | | | | |
| Requirement to demonstrate results in order to remain in the program? | Yes, but these are customized for each participant based on opportunity and site considerations; ach specific target requirement is listed in the IEM's performance contract | | | | | | | | | | |

BC Hydro

| SEM PROGRAM OVERVIEW | | |
|--|---|---|
| Program support for energy assessment and planning | Conduct an energy management assessment | ✓ |
| | Develop an energy map | ✓ |
| | Perform detailed energy studies or audits | ✓ |
| | Establish performance metrics | ✓ |
| | Develop a project register or other project plan | ✓ |
| | Other: | |
| Follow-up energy management assessment | An energy management assessment is done prior to signing the first contract (so any applicable targets can be included in the performance contract), and again before any renewal after the two-year contract is up. | |
| Program support for education and training | Energy management professional certification (such as CEM) | ✓ |
| | Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization) | ✓ |
| | Management system training for executives or managers | ✓ |
| | Development or maintenance of an energy baseline model | ✓ |
| | Energy management information system training | ✓ |
| | Other: Advanced leadership program for management | ✓ |
| | Other: Individual training budgets for IEMs to access their choice of energy management related training | ✓ |
| Other employee engagement | Support can be provided through fully funded coaches for employee engagement plan development. The program also offers up to \$7,000 per contract to support employee awareness campaigns (reimbursement for launch events, training workshops for staff, etc). | |
| Program support for energy IT and energy management information systems (EMIS) | Installation of submeters on end use equipment | ✓ |
| | Energy information technologies | ✓ |
| | Other: | |
| | Energy IT-EMIS support available to all SEM participants | ✓ |
| Program support for energy IT-EMIS selection and design | A service provider list has been developed to assist SEM participants with Energy Monitoring & Targeting; customers can select a service provider from the list or complete the implementation themselves | |
| Financial support for energy IT-EMIS | Up to \$80,000 of project costs are fully funded so long as program requirements are fulfilled | |
| SEM program incentive structure | Pay for performance | |
| | Capital measure incentives: up to 75 percent of project cost | ✓ |
| | "Milestone" incentives | |
| Monitoring and reporting SEM impacts | Data collection, baselines and analysis are the responsibility of the IEM or the service provider. Reports are submitted to BC Hydro Conservation Engineering and reviewed. | |
| Program goals for SEM participants post-implementation | BC Hydro launched an Alumni offer for IEM graduates September 2016. It does not offer salary reimbursement, but does offer other program support like employee awareness funding and EM&T funding access, as well as access to capital incentives. | |

BC Hydro

| SEM PROGRAM OVERVIEW | | |
|--|--|---|
| Post-implementation SEM support | Energy management assessments | |
| | Maintain participant energy baseline model: five years | ✓ |
| | Ongoing support for energy IT-EMIS | ✓ |
| | Training updates for participant staff | ✓ |
| | Other: | |
| Support for other SEM pathways | ENERGY STAR Challenge for Industry | |
| | DOE Better Plants Challenge | |
| | ISO 50001: Custom support provided through SEM coaches to work on components of ISO that are covered by the SEM offer (about 70 percent of ISO requirements fit this description). | ✓ |
| | Superior Energy Performance | |
| | Other: | |

Bonneville Power Administration

| SEM PROGRAM OVERVIEW | | |
|---|---|---|
| SEM program name | Energy Smart Industrial Program | |
| SEM program website | https://www.bpa.gov/EE/Sectors/Industrial/Pages/default.aspx | |
| Year SEM program launched | 2009 | |
| Number of SEM customers served to date | 92 | |
| Number of SEM customers served in 2015 | 84 | |
| Estimated electric savings attributed to SEM in 2015 | 24 million kWh | |
| Estimated natural gas savings attributed to SEM in 2015 | N/A | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | |
| | Included in program RFP or other procurement materials | |
| | Used to inform customer-facing SEM program materials | ✓ |
| | Other: | |
| REGULATORY CONTEXT | | |
| The program is required to report the following information to regulators | Energy savings, kWh | ✓ |
| | Demand savings, kW | |
| | Persistence of savings | ✓ |
| | Statistical significance of savings | ✓ |
| | Program budget or cost | ✓ |
| | Customer satisfaction | |
| | Other: | |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | ✓ |
| | Utility cost test (UCT) | |
| | Participant cost test (PCT) | |
| | Ratepayer impact measure test (RIM) | |
| SEM-related savings claimed | Operational, maintenance, or behavior-based energy savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to another program | |
| | Other: | |
| Persistence term used for O&M savings attributable to SEM implementation | Varies; two to ten years | |
| PROGRAM DELIVERY | | |

Bonneville Power Administration

| | | | | | | | | | | | |
|--|--|--|---|---|---|--|---|--|---|--------|--|
| SEM program go-to-market strategy | <p>The Energy Smart Industrial (ESI) program is a comprehensive energy efficiency program offered by BPA and local utility. ESI uses technical account managers to build relationships with industrial facilities and helps identifies opportunities for managing energy. SEM is part of the ESI Program. The ESI Program's SEM component deepens the relationship between program and participant.</p> <p>The ESI Program is flexible in the SEM approach. The ESI Program assists some participants with development of an energy management system in either a cohort or individually. The ESI Program helps other participants identify and implement discreet O&M measures. Also, through operator training, the ESI Program helps improve awareness and practices.</p> <p>The ESI Program emphasizes multi-year engagements, ranging from two to five years. The longer engagements assist participants' implementation of continuous improvement, leading to increased savings. Longer engagement increases the reliability of reported energy savings.</p> | | | | | | | | | | |
| SEM participant engagement model | <table border="1"> <tr> <td>Participants engaged as a cohort</td> <td></td> </tr> <tr> <td>Participants engaged as individual organizations</td> <td></td> </tr> <tr> <td>Some participants are engaged as a cohort, others as individuals</td> <td>✓</td> </tr> </table> | Participants engaged as a cohort | | Participants engaged as individual organizations | | Some participants are engaged as a cohort, others as individuals | ✓ | | | | |
| Participants engaged as a cohort | | | | | | | | | | | |
| Participants engaged as individual organizations | | | | | | | | | | | |
| Some participants are engaged as a cohort, others as individuals | ✓ | | | | | | | | | | |
| Approximate share of participant meetings conducted as a cohort | Two-thirds of meetings are conducted as a cohort, the remaining third with individual participants. | | | | | | | | | | |
| Activities typically delivered in cohort meetings | | | | | | | | | | | |
| SEM participant screening criteria | <table border="1"> <tr> <td>Annual energy consumption: 4 million kWh</td> <td>✓</td> </tr> <tr> <td>Energy savings potential: Informal criterion</td> <td>✓</td> </tr> <tr> <td>Energy management commitment: Informal criterion</td> <td>✓</td> </tr> <tr> <td>Participation in energy efficiency program offerings: informal criterion</td> <td>✓</td> </tr> <tr> <td>Other:</td> <td></td> </tr> </table> | Annual energy consumption: 4 million kWh | ✓ | Energy savings potential: Informal criterion | ✓ | Energy management commitment: Informal criterion | ✓ | Participation in energy efficiency program offerings: informal criterion | ✓ | Other: | |
| Annual energy consumption: 4 million kWh | ✓ | | | | | | | | | | |
| Energy savings potential: Informal criterion | ✓ | | | | | | | | | | |
| Energy management commitment: Informal criterion | ✓ | | | | | | | | | | |
| Participation in energy efficiency program offerings: informal criterion | ✓ | | | | | | | | | | |
| Other: | | | | | | | | | | | |
| Length of SEM program engagement | Varies; two to six years. Year 1 is energy management system development. After the first year the program provides continuing support as needed. | | | | | | | | | | |
| PROGRAM DESIGN | | | | | | | | | | | |
| Program support for obtaining and demonstrating participant commitment to SEM | <table border="1"> <tr> <td>Establish policies or goals</td> <td></td> </tr> <tr> <td>Make a commitment of resources (personnel, financial)</td> <td>✓</td> </tr> <tr> <td>Sign a contract or memorandum of understanding</td> <td>✓</td> </tr> </table> | Establish policies or goals | | Make a commitment of resources (personnel, financial) | ✓ | Sign a contract or memorandum of understanding | ✓ | | | | |
| Establish policies or goals | | | | | | | | | | | |
| Make a commitment of resources (personnel, financial) | ✓ | | | | | | | | | | |
| Sign a contract or memorandum of understanding | ✓ | | | | | | | | | | |
| Requirement to demonstrate results in order to remain in the program? | No | | | | | | | | | | |

Bonneville Power Administration

| | | |
|---|--|---|
| Program support for energy assessment and planning | Conduct an energy management assessment | ✓ |
| | Develop an energy map | ✓ |
| | Perform detailed energy studies or audits | ✓ |
| | Establish performance metrics | ✓ |
| | Develop a project register or other project plan | ✓ |
| | Other: | |
| Follow-up energy management assessment | Performed annually, but follow-up assessments are typically less formal than in year 1. | |
| Program support for education and training | Energy management professional certification (such as CEM) | ✓ |
| | Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization) | ✓ |
| | Management system training for executives or managers | ✓ |
| | Development or maintenance of an energy baseline model | ✓ |
| | Energy management information system training | ✓ |
| | Other: | |
| Other employee engagement | | |
| Program support for energy IT and energy management information systems (EMIS) | Installation of submeters on end use equipment | ✓ |
| | Energy information technologies | ✓ |
| | Other: | |
| | Energy IT-EMIS support available to all SEM participants | ✓ |
| Program support for energy IT-EMIS selection and design | The ESI program performs performance tracking system design. Support for energy tracking systems is motivated by the need to accurately measure energy saved and to increase energy awareness. | |
| Financial support for energy IT-EMIS | Up to 100 percent | |
| SEM program incentive structure | Pay for performance: \$.025/kWh first year savings | ✓ |
| | Capital measure incentives: | |
| | “Milestone” incentives: Energy project manager milestones | ✓ |
| Monitoring and reporting SEM impacts | Custom models with some tools are used to automate the analysis. The ESI program develops the model. | |
| Program goals for SEM participants post-implementation | Increased energy performance by the participant year over year | |
| Post-implementation SEM support | Energy management assessments | ✓ |
| | Maintain participant energy baseline model | ✓ |
| | Ongoing support for energy IT-EMIS | ✓ |
| | Training updates for participant staff | ✓ |
| | Other: | |
| Support for other SEM pathways | ENERGY STAR Challenge for Industry | |
| | DOE Better Plants Challenge | ✓ |
| | ISO 50001 | ✓ |
| | Superior Energy Performance | ✓ |
| | Other: | |

Commonwealth Edison and Nicor Gas

SEM PROGRAM OVERVIEW

| | | |
|--|--|---|
| SEM program name | Industrial SEM | |
| SEM program website | N/A | |
| Year SEM program launched | 2014 | |
| Number of SEM customers served to date | 18 | |
| Number of SEM customers served in 2015 | 10 | |
| Estimated electric savings attributed to SEM in 2015 | 6.35 million kWh | |
| Estimated natural gas savings attributed to SEM in 2015 | 410,078 therms | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | |
| | Included in program RFP or other procurement materials | ✓ |
| | Used to inform customer-facing SEM program materials | |
| | Other: | |

REGULATORY CONTEXT

| | | |
|---|---|---|
| The program is required to report the following information to regulators | Energy savings, kWh | ✓ |
| | Demand savings, kW (provided but not required) | ✓ |
| | Persistence of savings | ✓ |
| | Statistical significance of savings | ✓ |
| | Program budget or cost | ✓ |
| | Customer satisfaction | |
| | Other: | |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | ✓ |
| | Utility cost test (UCT) | |
| | Participant cost test (PCT) | |
| | Ratepayer impact measure test (RIM) | |
| SEM-related savings claimed | Operational, maintenance, or behavior-based energy savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to SEM program | |
| | Capital measure savings, attributed to another program | ✓ |
| | Other: | |
| Persistence term used for O&M savings attributable to SEM implementation | 2-3 years; the program is still working this out with evaluation | |

PROGRAM DELIVERY

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|--|---|---|
| SEM program go-to-market strategy | ComEd and Nicor Gas have long-term relationships with our customers and work with our implementation contractor to recruit participants. Together with the implementation contractor, ComEd and Nicor Gas provide site reviews, technical resources, coaching and mentoring to SEM participants. In addition, the program provides energy management training and education for participating organizations' staff, including tools, templates, and other resources to implement strategic energy management. | |
| SEM participant engagement model | Participants engaged as a cohort | ✓ |
| | Participants engaged as individual organizations | |
| | Some participants are engaged as a cohort, others as individuals | |
| Approximate share of participant meetings conducted as a cohort | Approximately 60 percent of meetings conducted as a cohort group, 40 percent with individual participants in Year 1. Year 2 will involve 3 cohort workshops, monthly individual update meetings, and on-site support as needed. | |
| Activities typically delivered in cohort meetings | | |
| SEM participant screening criteria | Annual energy consumption: At least 150,000 therms and 5 million kWh | ✓ |
| | Energy savings potential: | |
| | Energy management commitment: Executive and organizational commitment, i.e., executive sponsor, energy champion and energy team | ✓ |
| | Participation in energy efficiency program offerings | |
| Other: | | |
| Length of SEM program engagement | The industrial pilot that began in 2014 was for one year, but participants asked to continue for another year. | |
| PROGRAM DESIGN | | |
| Program support for obtaining and demonstrating participant commitment to SEM | Establish policies or goals | ✓ |
| | Make a commitment of resources (personnel, financial) | ✓ |
| | Sign a contract or memorandum of understanding | ✓ |
| Requirement to demonstrate results in order to remain in the program? | No | |
| Program support for energy assessment and planning | Conduct an energy management assessment | ✓ |
| | Develop an energy map | ✓ |
| | Perform detailed energy studies or audits | ✓ |
| | Establish performance metrics | ✓ |
| | Develop a project register or other project plan | ✓ |
| Other: | | |
| Follow-up energy management assessment | Yes, after three months | |

| | | |
|---|--|---|
| Program support for education and training | Energy management professional certification (such as CEM) | |
| | Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization) | ✓ |
| | Management system training for executives or managers | |
| | Development or maintenance of an energy baseline model | ✓ |
| | Energy management information system training | |
| Other: | | |
| Other employee engagement | Nicor Gas and ComEd provide energy efficiency information at employee engagements | |
| Program support for energy IT and energy management information systems (EMIS) | Installation of submeters on end use equipment | |
| | Energy information technologies | |
| | Other: | |
| | Energy IT-EMIS support available to all SEM participants | |
| Program support for energy IT-EMIS selection and design | N/A | |
| Financial support for energy IT-EMIS | N/A | |
| SEM program incentive structure | Pay for performance: Year 2: \$0.10 per therm, \$0.01 per kWh | ✓ |
| | Capital measure incentives: SEM participants receive 10 percent "bonus" incentive for capital projects completed in Year 1 | ✓ |
| | "Milestone" incentives: | |
| Monitoring and reporting SEM impacts | Utilities provide 2 years of pre-SEM implementation performance data; implementation contractor builds the baseline model and trains participants to update the model; the implementation contractor is responsible for maintaining models | |
| Program goals for SEM participants post-implementation | Maintain relationship with participants as an energy efficiency resource | |
| Post-implementation SEM support | Energy management assessments | |
| | Maintain participant energy baseline model | |
| | Ongoing support for energy IT-EMIS | |
| | Training updates for participant staff | |
| | Other: | |
| Support for other SEM pathways | ENERGY STAR Challenge for Industry | ✓ |
| | DOE Better Plants Challenge | |
| | ISO 50001 | |
| | Superior Energy Performance | |

Efficiency Nova Scotia

SEM PROGRAM OVERVIEW

| | | |
|---|---|---|
| SEM program name | Strategic Energy Management | |
| SEM program website | https://efficiencyns.ca/energy-planning-management/strategic-energy-management/ | |
| Year SEM program launched | 2014 | |
| Number of SEM customers served to date | 11 | |
| Number of SEM customers served in 2015 | 9 | |
| Estimated electric savings attributed to SEM in 2015 | 3.87 GWh | |
| Estimated natural gas savings attributed to SEM in 2015 | N/A | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | ✓ |
| | Included in program RFP or other procurement materials | |
| | Used to inform customer-facing SEM program materials | ✓ |
| | Other: | |
| REGULATORY CONTEXT | | |
| The program is required to report the following information to regulators | Energy savings, kWh | ✓ |
| | Demand savings, kW | ✓ |
| | Persistence of savings | |
| | Statistical significance of savings | ✓ |
| | Program budget or cost | ✓ |
| | Customer satisfaction | |
| Other: | | |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | |
| | Utility cost test (UCT) | |
| | Participant cost test (PCT) | |
| | Ratepayer impact measure test (RIM) | |
| SEM-related savings claimed | Operational, maintenance, or behavior-based energy savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to SEM program | |
| | Capital measure savings, attributed to another program | ✓ |
| | Other: | |
| Persistence term used for O&M savings attributable to SEM implementation | Not defined at this time | |

PROGRAM DELIVERY

Efficiency Nova Scotia

| | | |
|--|---|---|
| SEM program go-to-market strategy | Efficiency Nova Scotia's Business Development (BD) team has long standing relationships with our business, non-for-profit, and institutional sector which is the sector targeted for the SEM Program. The BD team works to recruit customers to participate in a 12-month program, which is delivered through a service provider selected through an RFP process. The service provider delivers a structured program including data analysis of energy consumption and energy driver information, individual and group based training, identification of energy savings opportunities at each facility, and organizational support for integrating and utilizing energy management practices and procedures | |
| SEM participant engagement model | Participants engaged as a cohort | ✓ |
| | Participants engaged as individual organizations | |
| | Some participants are engaged as a cohort, others as individuals | |
| Approximate share of participant meetings conducted as a cohort | 25 percent | |
| SEM participant screening criteria | Annual energy consumption: The program targets large energy users, but no formal criteria are in place | ✓ |
| | Energy savings potential: | |
| | Energy management commitment: A senior management representative must sign a memorandum of understanding committing the organization to the program from a human resource and financial perspective - Efficiency Nova Scotia covers the majority of program costs, however each customer does make a financial contribution | ✓ |
| | Participation in energy efficiency program offerings | |
| | Other: | |
| Length of SEM program engagement | To date the program has been a 12-month term; after the 12 months, if a customer wants to continue in an energy management program, they can opt to continue with a second year of SEM, transition to EMIS, or continue to work with BD on a project-by-project basis for capital measures. | |
| PROGRAM DESIGN | | |
| Program support for obtaining and demonstrating participant commitment to SEM | Establish policies or goals | ✓ |
| | Make a commitment of resources (personnel, financial) | ✓ |
| | Sign a contract or memorandum of understanding | ✓ |
| Requirement to demonstrate results in order to remain in the program? | No | |
| Program support for energy assessment and planning | Conduct an energy management assessment: the program uses a proprietary tool developed by the implementer | ✓ |
| | Develop an energy map | ✓ |
| | Perform detailed energy studies or audits | ✓ |
| | Establish performance metrics | ✓ |
| | Develop a project register or other project plan | ✓ |
| | Other: | |

Efficiency Nova Scotia

| | | |
|---|---|---|
| Follow-up energy management assessment | Customers complete one energy management assessment at the beginning of their engagement and a second at the end of their engagement to measure growth | |
| Program support for education and training | Energy management professional certification (such as CEM) | |
| | Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization) | ✓ |
| | Management system training for executives or managers | |
| | Development or maintenance of an energy baseline model | ✓ |
| | Energy management information system training | |
| Other: | | |
| Other employee engagement | Efficiency Nova Scotia delivers employee engagement through communications material and educational lunch and learn sessions on each customer site; events vary based on individual customer needs. | |
| Program support for energy IT and energy management information systems (EMIS) | Installation of submeters on end use equipment | |
| | Energy information technologies | |
| | Energy IT-EMIS support available to all SEM participants | |
| | Other: | |
| Program support for energy IT-EMIS selection and design | EMIS is a separate program offering within Efficiency Nova Scotia; SEM customers are eligible to participate in EMIS. | |
| Financial support for energy IT-EMIS | The EMIS program is a separate offering from SEM | |
| SEM program incentive structure | Pay for performance: | |
| | Capital measure incentives: | |
| | “Milestone” incentives: | |
| | No financial incentives provided from the SEM program | ✓ |
| Monitoring and reporting SEM impacts | Customers supply the service provider with monthly consumption and production information, the service provider uses this information to create a model, and the service provider manually updates the model on a monthly basis with numbers provided from each customer; customers also update their own model to track events, activities, and process changes for savings to be attributed to. | |
| Program goals for SEM participants post-implementation | Transition to EMIS where applicable, and increased engagement in other program offerings. | |
| Post-implementation SEM support | Energy management assessments | |
| | Maintain participant energy baseline model | |
| | Ongoing support for energy IT-EMIS: Only for customers that go on to participate in the EMIS program. | ✓ |
| | Training updates for participant staff | |
| | Other: | |
| Support for other SEM pathways | ENERGY STAR Challenge for Industry | |
| | DOE Better Plants Challenge | |
| | ISO 50001 | ✓ |
| | Superior Energy Performance | |
| Other: | | |

Efficiency Vermont

| SEM PROGRAM OVERVIEW | | |
|---|---|---|
| SEM program name | Continuous Energy Improvement Program | |
| SEM program website | https://www.encyvermont.com/services/project-support/strategic-energy-management | |
| Year SEM program launched | 2014 | |
| Number of SEM customers served to date | 14 | |
| Number of SEM customers served in 2015 | 14 | |
| Estimated electric savings attributed to SEM in 2015 | 1,000,000 kWh | |
| Estimated natural gas savings attributed to SEM in 2015 | N/A | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | ✓ |
| | Included in program RFP or other procurement materials | |
| | Used to inform customer-facing SEM program materials: Participant MOU | ✓ |
| | Other: | |
| REGULATORY CONTEXT | | |
| The program is required to report the following information to regulators | Energy savings, kWh | ✓ |
| | Demand savings, kW | ✓ |
| | Persistence of savings | ✓ |
| | Statistical significance of savings | ✓ |
| | Program budget or cost | ✓ |
| | Customer satisfaction | ✓ |
| | Other: | |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | ✓ |
| | Utility cost test (UCT) | |
| | Participant cost test (PCT) | |
| | Ratepayer impact measure test (RIM) | |
| SEM-related savings claimed | Operational, maintenance, or behavior-based energy savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to another program | |
| | Other: Program measured the above savings, but did not claim them for 2014 pilot year. | |

Efficiency Vermont

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|---|---|---|
| Persistence term used for O&M savings attributable to SEM implementation | Awaiting evaluation results for determination of CEI based savings persistence | |
| PROGRAM DELIVERY | | |
| SEM program go-to-market strategy | Efficiency Vermont account managers and energy consultants have historically taken a very tactical approach with our larger engaged accounts. Continuous Energy Improvement (CEI) offers Efficiency Vermont an opportunity for increased engagement and a more comprehensive approach to help our customers. Our CEI program is a cohort based approach that brings each group of companies together in a series of peer to peer exchanges via workshops (Customer Commitment, Tactical Employee Engagement, Reporting, Data Tracking Tools, and Technology Best Practices, etc.), trainings, kaizens, and onsite assessments. Customer specific engagement steps include and cross functional discussion of an energy management assessment, site specific employee engagement approaches and weekly or bi-weekly site visits. | |
| SEM participant engagement model | Participants engaged as a cohort | ✓ |
| | Participants engaged as individual organizations | |
| | Some participants are engaged as a cohort, others as individuals | |
| Approximate share of participant meetings conducted as a cohort | 20 percent of meetings are cohort based | |
| Activities typically delivered in cohort meetings | | |
| SEM participant screening criteria | Annual energy consumption: 1 million kWh | ✓ |
| | Energy savings potential: | |
| | Energy management commitment: Top level management commitment via signed MOU | ✓ |
| | Participation in energy efficiency program offerings | ✓ |
| Other: | | |
| Length of SEM program engagement | Renewable annually | |
| PROGRAM DESIGN | | |
| Program support for obtaining and demonstrating participant commitment to SEM | Establish policies or goals | ✓ |
| | Make a commitment of resources (personnel, financial) | ✓ |
| | Sign a contract or memorandum of understanding | ✓ |
| Requirement to demonstrate results in order to remain in the program? | No | |

Efficiency Vermont

| | | |
|---|--|---|
| Program support for energy assessment and planning | Conduct an energy management assessment | ✓ |
| | Develop an energy map | ✓ |
| | Perform detailed energy studies or audits | ✓ |
| | Establish performance metrics | ✓ |
| | Develop a project register or other project plan | ✓ |
| | Other: | |
| Follow-up energy management assessment | Conducted annually | |
| Program support for education and training | Energy management professional certification (such as CEM) | |
| | Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization) | ✓ |
| | Management system training for executives or managers | |
| | Development or maintenance of an energy baseline model | ✓ |
| | Energy management information system training | ✓ |
| | Other: | |
| Other employee engagement | Program includes employee engagement workshops, addressing strategic and tactical opportunities | |
| Program support for energy IT and energy management information systems (EMIS) | Installation of submeters on end use equipment | ✓ |
| | Energy information technologies | ✓ |
| | Other: | |
| | Energy IT-EMIS support available to all SEM participants | ✓ |
| Program support for energy IT-EMIS selection and design | Yes | |
| Financial support for energy IT-EMIS | 75 percent cost share for EMIS, including first year subscription cost | |
| SEM program incentive structure | Pay for performance: | |
| | Capital measure incentives: Based on project economics | ✓ |
| | “Milestone” incentives: | |
| Monitoring and reporting SEM impacts | Performed by Efficiency Vermont energy consultants | |
| Program goals for SEM participants post-implementation | | |
| Post-implementation SEM support | Energy management assessments | ✓ |
| | Maintain participant energy baseline model | ✓ |
| | Ongoing support for energy IT-EMIS | |
| | Training updates for participant staff | |
| | Other: | |
| Support for other SEM pathways | ENERGY STAR Challenge for Industry | |
| | DOE Better Plants Challenge | |
| | ISO 50001 | ✓ |
| | Superior Energy Performance | ✓ |
| | Other: | |

Energy Trust of Oregon

| SEM PROGRAM OVERVIEW | | |
|---|---|---|
| SEM program name | CORE SEM and Continuous SEM | |
| SEM program website | http://energytrust.org/industrial-and-ag/industry/strategic-energy-management/ | |
| Year SEM program launched | CORE SEM: 2009 Continuous SEM: launching Fall 2016 | |
| Number of SEM customers served to date | 192 | |
| Number of SEM customers served in 2015 | 36 | |
| Estimated electric savings attributed to SEM in 2015 | 15.93 million kWh | |
| Estimated natural gas savings attributed to SEM in 2015 | 24,216 therms | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | ✓ |
| | Included in program RFP or other procurement materials | ✓ |
| | Used to inform customer-facing SEM program materials | ✓ |
| | Other: | |
| REGULATORY CONTEXT | | |
| The program is required to report the following information to regulators | Energy savings, kWh | ✓ |
| | Demand savings, kW | |
| | Persistence of savings | ✓ |
| | Statistical significance of savings | |
| | Program budget or cost | ✓ |
| | Customer satisfaction | ✓ |
| | Other: | |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | ✓ |
| | Utility cost test (UCT) | ✓ |
| | Participant cost test (PCT) | |
| | Ratepayer impact measure test (RIM) | |
| SEM-related savings claimed | Operational, maintenance, or behavior-based energy savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to SEM program | |
| | Capital measure savings, attributed to another program | ✓ |
| | Other: | |
| Persistence term used for O&M savings attributable to SEM implementation | 3 years for CORE SEM, 5 years for Continuous SEM | |
| PROGRAM DELIVERY | | |

Energy Trust of Oregon

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|--|---|----------------------------------|--|--|--|--|---|--|
| SEM program go-to-market strategy | <p>Our Program Delivery Contractors hold the long-term relationships with end use customers across the entire Production Efficiency program, and hold primary responsibility for recruiting companies for SEM. During the year-long SEM engagement, the SEM Coach takes on a larger role with the company, but PDCs remain involved through support during or after Treasure Hunts and if or when capital projects are identified. Through the SEM engagement, a combination of interactive training modules, on-site energy meetings including Treasure Hunts, data modeling, and reporting create the basic framework for energy management at each site.</p> <p>Core SEM, our 1st year SEM offering, can be deployed as a cohort-based engagement (typically between 10-20 companies) or as a stand-alone engagement, engaging energy teams to implement SEM. In the past, we have offered refrigeration operator coaching as a cohort-based engagement; however, after running that offering for four years we had a hard time finding new, large ammonia refrigeration sites.</p> <p>Continuous SEM is a one-on-one engagement offered to customers once they have completed a 1st year SEM offering. Continuous SEM will focus on one or more elements of SEM, helping the customer further embed their SEM practices, maintain their energy models, as well as helping them to continue their success with identifying new projects to implement. This offering will be a multi-year offering. Following any SEM engagement, customers continue to engage with PDCs through our custom and streamlined tracks and are also invited to attend bi-annual breakfast networking events with their peers to continue to engage them and provide training and support on SEM-related continuous improvement.</p> | | | | | | | |
| SEM participant engagement model | <table border="1"> <tr> <td data-bbox="581 1066 1393 1102">Participants engaged as a cohort</td> <td data-bbox="1393 1066 1537 1102"></td> </tr> <tr> <td data-bbox="581 1102 1393 1138">Participants engaged as individual organizations</td> <td data-bbox="1393 1102 1537 1138"></td> </tr> <tr> <td data-bbox="581 1138 1393 1291">Some participants are engaged as a cohort, others as individuals. Most participants are encouraged to join a cohort, as customer satisfaction with the cohort experience has been very high. But some sites, in particular remote rural or very large campuses, may be better suited to one- on-one engagements.</td> <td data-bbox="1393 1138 1537 1291" style="text-align: center;">✓</td> </tr> </table> | Participants engaged as a cohort | | Participants engaged as individual organizations | | Some participants are engaged as a cohort, others as individuals. Most participants are encouraged to join a cohort, as customer satisfaction with the cohort experience has been very high. But some sites, in particular remote rural or very large campuses, may be better suited to one- on-one engagements. | ✓ | |
| Participants engaged as a cohort | | | | | | | | |
| Participants engaged as individual organizations | | | | | | | | |
| Some participants are engaged as a cohort, others as individuals. Most participants are encouraged to join a cohort, as customer satisfaction with the cohort experience has been very high. But some sites, in particular remote rural or very large campuses, may be better suited to one- on-one engagements. | ✓ | | | | | | | |
| Approximate share of participant meetings conducted as a cohort | <p>For our Cohort-based offering, six workshops are conducted in the cohort environment. We estimate that approximately 50 percent of the meetings are done in the cohort environment.</p> <p>We also offer an individual version of our Core SEM offering; Continuous SEM will be an individual-based engagement.</p> | | | | | | | |
| Activities typically delivered in cohort meetings | | | | | | | | |

Energy Trust of Oregon

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|--|---|---|
| SEM participant screening criteria | Annual energy consumption: Minimum \$50k annual combined electric and gas energy spend | ✓ |
| | Energy savings potential: | |
| | Energy management commitment: The site must have executive sponsorship, dedicate an energy champion and data master, and have the ability and capacity to implement projects during the engagement. | ✓ |
| | Participation in energy efficiency program offerings | |
| | Other: Capacity and interest. Based on conversation with the program development contractor, which is typically screening for whether the customer has the capacity or resources to dedicate to the SEM initiative, whether they have any large production changes happening at the site that could compromise our ability to create a model with a working baseline or presents as a major obstacle to participation, company culture or motivation (or what we call SEM readiness), executive sponsorship, and whether they currently track production data, and whether they already use other types of management processes such as LEAN or Continuous Improvement. | ✓ |
| Length of SEM program engagement | Our 1st year Core SEM engagement is 14 months and there are two distinct, phases. The first nine months of the engagement are referred to as the Engagement period, the next three months are the Reporting period, and the last two months are for completing the report and for the celebration workshop. The Baseline period ends at enrollment and the Engagement period then begins. Going forward, completion of Core will be the prerequisite for enrollment in Continuous SEM, in which we hope to engage sites for 3 - 5 years. | |
| PROGRAM DESIGN | | |
| Program support for obtaining and demonstrating participant commitment to SEM | Establish policies or goals | ✓ |
| | Make a commitment of resources (personnel, financial) | ✓ |
| | Sign a contract or memorandum of understanding | ✓ |
| Requirement to demonstrate results in order to remain in the program? | Once recruited, the customer signs an enrollment form, which is the legal contract between the Program and the customer. It lays out commitment, expectations and incentive methodology. The customer also signs a Roles & Responsibilities document, which asks the energy champion, executive sponsor, and data manager to sign off on their roles. Continued commitment to participate by attending workshops and staying engaged with the SEM Coach is a requirement to stay in the program. | |
| Program support for energy assessment and planning | Conduct an energy management assessment | ✓ |
| | Develop an energy map | ✓ |
| | Perform detailed energy studies or audits | ✓ |
| | Establish performance metrics | ✓ |
| | Develop a project register or other project plan | ✓ |
| | Other: | ✓ |
| Follow-up energy management assessment | We offer the EMA as part of the 9th month of the engagement, this can be used to help guide them as they move into Continuous SEM. | |

Energy Trust of Oregon

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|---|---|---|
| Program support for education and training | Energy management professional certification (such as CEM) | |
| | Energy efficiency subject training: Energy engineering is covered at a high level in Core SEM, plus more detailed, system specific EE technical training is sponsored by the PE program in general, not just within SEM. | ✓ |
| | Management system training for executives or managers | |
| | Development or maintenance of an energy baseline model | ✓ |
| | Energy management information system training | ✓ |
| Other: | | |
| Other employee engagement | Employee Engagement is one of the major themes in the Core SEM curriculum. Energy Trust has an entire workshop dedicated to engaging employees. | |
| Program support for energy IT and energy management information systems (EMIS) | Installation of submeters on end use equipment: May be provided temporarily to help develop energy models or support Treasure Hunts during Core. Continuous participants will be eligible for cost share incentive to install their own submetering. | ✓ |
| | Energy information technologies | ✓ |
| | Other: At times Energy Trust has supported EMIS, both as hardware and software as a service, but it has primarily been included in engagements on an ad hoc basis. For the Refrigerator Operator Coaching cohorts (2011-2014), Energy Trust offered both hardware and software, and for the 2015 SEM 1st year cohort Energy Trust offered software only. EMIS will be offered on as an option to Continuous SEM participants. | |
| Energy IT-EMIS support available to all SEM participants: | | |
| Program support for energy IT-EMIS selection and design | Energy Trust is planning to set the specifications for an eligible EMIS and then leave it up to the customer to select what EMIS works best for them. | |
| Financial support for energy IT-EMIS | Energy Trust is planning to offer a cost share financial incentive for EMIS to Continuous SEM participants, but is still working out the details. | |
| SEM program incentive structure | Pay for performance: \$.02/kWh, and \$.20/therm for O&M savings achieved at the completion of the first-year SEM engagement. | ✓ |
| | Capital measure incentives: "Milestone" incentives: Energy Trust offer three \$1,000 milestones for meeting specific time-bound program achievements related to providing energy and production data and updated opportunity registers. | ✓ |
| Monitoring and reporting SEM impacts | The customer is primarily responsible for the collection of data that can be done either manually or automatically. The SEM Coach then creates an energy intensity model with an established baseline that meets Energy Trust Modeling Guidelines, and after a rigorous review with the PDC engineers and by internal technical managers, the coaches then deliver it to the customer to maintain during the engagement, while simultaneously monitoring the model. Ultimately, the Coach sets the baseline and then it is intended for the customer to update the model moving forward with assistance from the Coach. | |

Energy Trust of Oregon

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| <p>Program goals for SEM participants post-implementation</p> | <p>Energy Trust continues to serve these customers through its regular offerings, they continue to be engaged with their primary PDC who holds the long term relationship with the customer, and participate in the Process Efficiency program's Custom and Streamlined project tracks. Energy Trust is developing a Continuous SEM offering that will launch in 2016 Q4 designed to help these customers further their SEM practices and to implement O&M projects. Regardless of the customer's SEM enrollment status, Energy Trust PDCs continue to serve the customer in the long-term.</p> | |
| <p>Post-implementation SEM support</p> | <p>Energy management assessments</p> <p>Maintain participant energy baseline model</p> <p>Ongoing support for energy IT-EMIS</p> <p>Training updates for participant staff</p> | <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> |
| <p>Support for other SEM pathways</p> | <p>ENERGY STAR Challenge for Industry: Energy Star for industry is a program that we help our customers think about and assist with some documentation gathering.</p> <p>DOE Better Plants Challenge</p> <p>ISO 50001: Production Efficiency has assisted two customers to date in becoming ISO 50001 certified. Going forward, we would provide custom coaching support, including mock audits, to highly motivated Continuous SEM participants seeking certification.</p> <p>Superior Energy Performance</p> <p>Other:</p> | <p>✓</p> <p></p> <p>✓</p> <p></p> <p></p> |

Focus on Energy Wisconsin

| SEM PROGRAM OVERVIEW | | |
|---|---|---|
| SEM program name | Wisconsin SEM Leaders | |
| SEM program website | No website specific to SEM | |
| Year SEM program launched | Pilot in 2014 Full program in 2015 | |
| Number of SEM customers served to date | 30 | |
| Number of SEM customers served in 2015 | 30 | |
| Estimated electric savings attributed to SEM in 2015 | The program did not claim energy savings during its pilot year in 2015. The program will claim energy savings in 2016 and beyond. | |
| Estimated natural gas savings attributed to SEM in 2015 | N/A | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | ✓ |
| | Included in program RFP or other procurement materials | |
| | Used to inform customer-facing SEM program materials | |
| | Other: | |
| REGULATORY CONTEXT | | |
| The program is required to report the following information to regulators | Energy savings, kWh | ✓ |
| | Demand savings, kW | ✓ |
| | Persistence of savings | ✓ |
| | Statistical significance of savings | ✓ |
| | Program budget or cost | ✓ |
| | Customer satisfaction | ✓ |
| | Other: | |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | ✓ |
| | Utility cost test (UCT) | |
| | Participant cost test (PCT) | |
| | Ratepayer impact measure test (RIM) | |
| SEM-related savings claimed | Operational, maintenance, or behavior-based energy savings, attributed to SEM program | |
| | Capital measure savings, attributed to SEM program | |
| | Capital measure savings, attributed to another program | |
| | Other: The program did not claim energy savings in 2015. In the future the program will claim savings from operations and maintenance and capital measures. | ✓ |

Focus on Energy Wisconsin

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| Persistence term used for O&M savings attributable to SEM implementation | To be determined | |
| PROGRAM DELIVERY | | |
| SEM program go-to-market strategy | Focus on Energy targeted specific customers identified as "ready and committed" by our Focus on Energy Advisors and Utility Key Account managers. Throughout the year-long recruiting effort beginning in January 2015, Focus talked with 78 customers before achieving its enrollment goal of 30 in December 2015. Participants committed to the program by signing the SEM Leaders "Participation Agreement." The agreement spelled out the incentives and support being offered as well as expectations of participants. The senior-most executive at the facility signed the agreement as the "Authorizing Executive." The agreement also identified a "Management Sponsor" responsible for securing the necessary internal resources for SEM implementation and a "Management Representative" responsible for day-to-day implementation of the SEM program. Participating companies meet in one of three cohorts and are provided with individualized guidance and support from their assigned Focus on Energy SEM Advisor during the 12- to 18-month intensive implementation period. Participants continued receiving support on project development and incentive applications from their technical Focus on Energy Advisor. Participants will continue receiving support and guidance for their SEM program after the intensive SEM implementation period. | |
| SEM participant engagement model | Participants engaged as a cohort | |
| | Participants engaged as individual organizations | |
| | Some participants are engaged as a cohort, others as individuals | ✓ |
| Approximate share of participant meetings conducted as a cohort | Approximately 10 percent of meetings are conducted as a cohort. Those are three half-day training sessions covering specific SEM program elements. Participants largely progress at their own pace. However, Focus requires them to participate in three group sessions over the 12-month implementation period. During these cohort meetings we essentially sync-up or get everyone on the same page of understanding, even though they may individually be at different stages in the process. | |
| SEM participant screening criteria | Annual energy consumption: 1,000 kW demand threshold; must spend at least \$60k per month on combined electrical and natural gas. | ✓ |
| | Energy savings potential: Informal criterion. "Tie breaker" | ✓ |
| | Energy management commitment: Demonstrated corporate energy efforts | ✓ |
| | Participation in energy efficiency program offerings: Incentives accessed, and engagement with their Focus on Energy Advisor | ✓ |
| | Other: | |
| Length of SEM program engagement | Intensive implementation period of 12 months for SEM only; 18 months for ISO certification; as needed for SEP; ongoing support for as long as they are committed. | |
| PROGRAM DESIGN | | |

Focus on Energy Wisconsin

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| Program support for obtaining and demonstrating participant commitment to SEM | Establish policies or goals | |
| | Make a commitment of resources: Must designate a management representative to lead the SEM implementation. | ✓ |
| | Sign a contract or memorandum of understanding: The program participation agreement spells out the expectations for participants. | ✓ |
| Requirement to demonstrate results in order to remain in the program? | Yes. Participants must demonstrate progress in program implementation otherwise risk not receiving incentives and having support discontinued. While the program has savings or improvement goals, customers are not dismissed from the program for lack of improvement. They may, however, not receive the full incentive if the performance improvement goal is not achieved. | |
| Program support for energy assessment and planning | Conduct an energy management assessment | ✓ |
| | Develop an energy map: Focus conducts an Energy Review as defined by ISO 50001. That effort includes compiling energy use records/data and energy inventory which can easily be "mapped." | ✓ |
| | Perform detailed energy studies or audits | |
| | Establish performance metrics: Focus uses customer utility and production data to establish a performance model and baseline energy performance indicators. | ✓ |
| | Develop a project register or other project plan: Focus works with customers to maintain an "opportunities log" to capture all performance improvement opportunities stemming from capital equipment, O&M practices, or adjustments to significant energy use (SEU) key characteristics. | ✓ |
| | Other: Focus conducts an audit of the customers' energy management information systems or Energy IT. | ✓ |
| Follow-up energy management assessment | N/A | |
| Program support for education and training | Energy management professional certification (such as CEM): Focus offers up to \$2,000 in professional development incentives for participants' management representative to use as they choose; we also provide program sponsored training events. | ✓ |
| | Energy efficiency subject training: Focus offers scholarships to systems trainings. We also sponsor the actual training if we see an unmet need. | ✓ |
| | Management system training for executives or managers: Focus offers a one-day SEM training suitable for managers and executives. | ✓ |
| | Development or maintenance of an energy baseline model | ✓ |
| | Energy management information system training: Addressed in cohort meetings and one-day SEM training | ✓ |
| | Other: | |
| Other employee engagement | Employee engagement and awareness of energy efficiency generally and responsibility for or impact on significant energy users specifically is an expected part of implementing an effective SEM program. As such, Focus on Energy engages and encourages all participating companies on this matter. | |

Focus on Energy Wisconsin

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| Program support for energy IT and energy management information systems (EMIS) | Installation of submeters on end use equipment | ✓ |
| | Energy information technologies | ✓ |
| | Other: | |
| | Energy IT-EMIS support available to all SEM participants | ✓ |
| Program support for energy IT-EMIS selection and design | The program has identified a suitable provider to work with our program and provide services to interested customers. We can recommend other providers to participants or they can shop for their own. | |
| Financial support for energy IT-EMIS | For Focus on Energy's 30 SEM Leader participants, the program covers 75 percent of the cost up to \$15k for an EMIS assessment. Focus provides 50 percent of the cost up to \$15k toward implementation of EMIS technology. Focus is currently assessing what incentives to provide as we roll SEM out to the rest of our customer base. | |
| SEM program incentive structure | Pay for performance: The program includes an incentive for achieving a stated performance improvement goal as measured against the baseline EnPI performance model. That incentive is not based on a \$ per units of energy saved, but rather is an all or none proposition. | ✓ |
| | Capital measure incentives: | ✓ |
| | "Milestone" incentives: SEM participants can receive \$70k for implementing our SEM program; \$30k for achieving ISO 50001 certification, and another \$10k for achieving SEP designation. The \$70k incentive is earned in stages by achieving implementation milestones, but paid at the end of their active participation period. | ✓ |
| Monitoring and reporting SEM impacts | Participants are expected to provide "quarterly performance reports" to Focus on Energy. The report is essentially a top down-bottom up analysis intended to show SEM impact. | |
| Program goals for SEM participants post-implementation | Continue providing "quarter performance reports" to Focus on Energy | |
| Post-implementation SEM support | Energy management assessments | ✓ |
| | Maintain participant energy baseline model | ✓ |
| | Ongoing support for energy IT-EMIS | ✓ |
| | Training updates for participant staff | ✓ |
| | Other: | |
| Support for other SEM pathways | ENERGY STAR Challenge for Industry: Will support this program if asked by customers | |
| | DOE Better Plants Challenge | |
| | ISO 50001 | ✓ |
| | Superior Energy Performance | ✓ |
| | Other: | |

Hydro Québec

| SEM PROGRAM OVERVIEW | | |
|---|---|---|
| SEM program name | Electricity Management Systems – Industrial Systems Program | |
| SEM program website | http://www.hydroquebec.com/business/energy-efficiency/programs/industrial-systems-program/continuous-measurement/ | |
| Year SEM program launched | Current version: 2015 | |
| Number of SEM customers served to date | 20 | |
| Number of SEM customers served in 2015 | 3 | |
| Estimated electric savings attributed to SEM in 2015 | Not available | |
| Estimated natural gas savings attributed to SEM in 2015 | N/A | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | |
| | Included in program RFP or other procurement materials | |
| | Used to inform customer-facing SEM program materials | |
| | Other: Used as a reference | ✓ |
| REGULATORY CONTEXT | | |
| The program is required to report the following information to regulators | Energy savings, kWh | ✓ |
| | Demand savings, kW | |
| | Persistence of savings | ✓ |
| | Statistical significance of savings | ✓ |
| | Program budget or cost | ✓ |
| | Customer satisfaction | |
| | Other: Number of projects | ✓ |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | ✓ |
| | Utility cost test (UCT) | ✓ |
| | Participant cost test (PCT) | ✓ |
| | Ratepayer impact measure test (RIM) | ✓ |
| SEM-related savings claimed | Operational, maintenance, or behavior-based energy savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to SEM program | |
| | Capital measure savings, attributed to another program | ✓ |
| | Other: The program measures O&M and capital savings, but did not claim savings achieved in 2015. | ✓ |
| Persistence term used for O&M savings attributable to SEM implementation | 10 years, with a 5 year SEM commitment formalized by contract | |

Hydro Québec

| PROGRAM DELIVERY | | | | | | | | | | | | | | |
|--|--|---|---|---|---|--|---|--|--|--|---|--|---|--|
| SEM program go-to-market strategy | <p>Hydro-Québec’s internal team of specialized engineers and marketers plays a role in recruiting companies for SEM. The offer is limited to the biggest industrial customers. Industry word of mouth is an important part of customer engagement for this program. First, the Hydro-Québec team presents the SEM concepts to customer's higher management, and a free workshop on ISO 50 001 elements is offered for target employees. Second, a SEM business case analysis may be developed. This analysis is done by a contractor selected by the customer, but should follow a defined content. SEM participants sign a 5-year contract with Hydro-Québec to implement continuous improvement.</p> <p>The program provides technical resources, cost sharing, and energy monitoring equipment. The SEM engagement is a step by step process. Hydro-Québec resources stay in touch to support and adapt the offer to participant's needs: training, on-site energy meetings, data modeling and reporting.</p> | | | | | | | | | | | | | |
| SEM participant engagement model | <table border="1"> <tr> <td>Participants engaged as a cohort</td> <td></td> </tr> <tr> <td>Participants engaged as individual organizations</td> <td>✓</td> </tr> <tr> <td>Some participants are engaged as a cohort, others as individuals</td> <td></td> </tr> </table> | Participants engaged as a cohort | | Participants engaged as individual organizations | ✓ | Some participants are engaged as a cohort, others as individuals | | | | | | | | |
| Participants engaged as a cohort | | | | | | | | | | | | | | |
| Participants engaged as individual organizations | ✓ | | | | | | | | | | | | | |
| Some participants are engaged as a cohort, others as individuals | | | | | | | | | | | | | | |
| Approximate share of participant meetings conducted as a cohort | N/A | | | | | | | | | | | | | |
| SEM participant screening criteria | <table border="1"> <tr> <td>Annual energy consumption: \$750k electricity spend</td> <td>✓</td> </tr> <tr> <td>Energy savings potential:</td> <td></td> </tr> <tr> <td>Energy management commitment: 5-year contract with Hydro-Québec</td> <td>✓</td> </tr> <tr> <td>Participation in energy efficiency program offerings</td> <td></td> </tr> <tr> <td>Other:</td> <td></td> </tr> </table> | Annual energy consumption: \$750k electricity spend | ✓ | Energy savings potential: | | Energy management commitment: 5-year contract with Hydro-Québec | ✓ | Participation in energy efficiency program offerings | | Other: | | | | |
| Annual energy consumption: \$750k electricity spend | ✓ | | | | | | | | | | | | | |
| Energy savings potential: | | | | | | | | | | | | | | |
| Energy management commitment: 5-year contract with Hydro-Québec | ✓ | | | | | | | | | | | | | |
| Participation in energy efficiency program offerings | | | | | | | | | | | | | | |
| Other: | | | | | | | | | | | | | | |
| Length of SEM program engagement | 5 years | | | | | | | | | | | | | |
| PROGRAM DESIGN | | | | | | | | | | | | | | |
| Program support for obtaining and demonstrating participant commitment to SEM | <table border="1"> <tr> <td>Establish policies or goals</td> <td>✓</td> </tr> <tr> <td>Make a commitment of resources (personnel, financial)</td> <td>✓</td> </tr> <tr> <td>Sign a contract or memorandum of understanding</td> <td>✓</td> </tr> </table> | Establish policies or goals | ✓ | Make a commitment of resources (personnel, financial) | ✓ | Sign a contract or memorandum of understanding | ✓ | | | | | | | |
| Establish policies or goals | ✓ | | | | | | | | | | | | | |
| Make a commitment of resources (personnel, financial) | ✓ | | | | | | | | | | | | | |
| Sign a contract or memorandum of understanding | ✓ | | | | | | | | | | | | | |
| Requirement to demonstrate results in order to remain in the program? | No | | | | | | | | | | | | | |
| Program support for energy assessment and planning | <table border="1"> <tr> <td>Conduct an energy management assessment</td> <td>✓</td> </tr> <tr> <td>Develop an energy map</td> <td>✓</td> </tr> <tr> <td>Perform detailed energy studies or audits</td> <td>✓</td> </tr> <tr> <td>Establish performance metrics</td> <td></td> </tr> <tr> <td>Develop a project register or other project plan</td> <td>✓</td> </tr> <tr> <td>Other: Develop a business case for SEM and EMIS implementation</td> <td>✓</td> </tr> </table> | Conduct an energy management assessment | ✓ | Develop an energy map | ✓ | Perform detailed energy studies or audits | ✓ | Establish performance metrics | | Develop a project register or other project plan | ✓ | Other: Develop a business case for SEM and EMIS implementation | ✓ | |
| Conduct an energy management assessment | ✓ | | | | | | | | | | | | | |
| Develop an energy map | ✓ | | | | | | | | | | | | | |
| Perform detailed energy studies or audits | ✓ | | | | | | | | | | | | | |
| Establish performance metrics | | | | | | | | | | | | | | |
| Develop a project register or other project plan | ✓ | | | | | | | | | | | | | |
| Other: Develop a business case for SEM and EMIS implementation | ✓ | | | | | | | | | | | | | |

Hydro Québec

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|---|--|---|
| Follow-up energy management assessment | Yes, once each year. | |
| Program support for education and training | Energy management professional certification (such as CEM) | ✓ |
| | Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization) | ✓ |
| | Management system training for executives or managers | ✓ |
| | Development or maintenance of an energy baseline model | ✓ |
| | Energy management information system training | ✓ |
| | Other: Hydro-Québec offer is flexible depending on the specific needs of each customer. | |
| Other employee engagement | The program includes a workshop on ISO 50001 elements for all employees. | |
| Program support for energy IT and energy management information systems (EMIS) | Installation of submeters on end use equipment | ✓ |
| | Energy information technologies | ✓ |
| | Other: | |
| | Energy IT-EMIS support available to all SEM participants | ✓ |
| Program support for energy IT-EMIS selection and design | Program staff and consultants support SEM participants in the selection and design of energy IT systems, as needed. | |
| Financial support for energy IT-EMIS | 50 percent of eligible purchase and installation costs of continuous measuring equipment, up to \$75,000 (including annual software subscription fee) 50 percent of development and implementation costs of electricity management system, up to \$75,000 (including annual software subscription fee) Cumulative maximum since May 1, 2015: \$150,000 (excluding additional amount) | |
| SEM program incentive structure | Pay for performance: \$.01/kWh for O&M savings | ✓ |
| | Capital measure incentives: attributed to other programs | ✓ |
| | "Milestone" incentives: | ✓ |
| Monitoring and reporting SEM impacts | | |
| Program goals for SEM participants post-implementation | Help Hydro-Québec customers to improve efficiency and competitiveness | |
| Post-implementation SEM support | Energy management assessments | ✓ |
| | Maintain participant energy baseline model | ✓ |
| | Ongoing support for energy IT-EMIS | ✓ |
| | Training updates for participant staff | ✓ |
| | Other: All of the above provided throughout 5 year contract duration. | ✓ |
| | | |
| Support for other SEM pathways | ENERGY STAR Challenge for Industry | |
| | DOE Better Plants Challenge | |
| | ISO 50001: Supported through workshops and training | ✓ |
| | Superior Energy Performance | |
| | Other: | |

Idaho Power

| SEM PROGRAM OVERVIEW | | |
|---|--|---|
| SEM program name | Refrigerator Operator Coaching (ROCEE) Wastewater Energy Efficiency Cohort (WWEEC) Water Supply Optimization Cohort (WSOC) | |
| SEM program website | www.idahopower.com/business | |
| Year SEM program launched | ROCEE: 2011 WWEEC: 2013 WSOC: 2016 | |
| Number of SEM customers served to date | ROCEE: 8 WWEEC: 11 Total: 34 WSOC: 15 | |
| Number of SEM customers served in 2015 | | |
| Estimated electric savings attributed to SEM in 2015 | 7 MWh | |
| Estimated natural gas savings attributed to SEM in 2015 | N/A | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | ✓ |
| | Included in program RFP or other procurement materials | ✓ |
| | Used to inform customer-facing SEM program materials | ✓ |
| | Other: | |
| REGULATORY CONTEXT | | |
| The program is required to report the following information to regulators | Energy savings, kWh | ✓ |
| | Demand savings, kW | |
| | Persistence of savings | ✓ |
| | Statistical significance of savings | ✓ |
| | Program budget or cost | ✓ |
| | Customer satisfaction | ✓ |
| | Other: | |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | ✓ |
| | Utility cost test (UCT) | ✓ |
| | Participant cost test (PCT) | ✓ |
| | Ratepayer impact measure test (RIM) | |
| SEM-related savings claimed | Operational, maintenance, or behavior-based energy savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to another program | ✓ |
| | Other: | |
| Persistence term used for O&M savings attributable to SEM implementation | 1 year | |

Idaho Power

| PROGRAM DELIVERY | | | | | | | | | | | |
|--|--|--|---|---|---|--|---|--|--|--------|--|
| SEM program go-to-market strategy | Idaho Power Program Delivery Contractors work with the customers during the first two years, with program engineers heavily involved and customer reps involved and invited to attend workshops and one-on-one meetings. During the two year-long SEM engagement the contractors take on a larger role with the customer, but program engineers remain involved through support during scans and if or when capital projects are identified. Through the SEM engagement, a combination of interactive training modules, webinars, on-site energy meetings including scans, data modeling and reporting create the basic framework for energy management at each site. All of our offerings (wastewater, refrigeration, and water supply) are deployed in a cohort model (between 8-15 customers) engaging energy teams to implement SEM. ROCEE trains operators on-site on numerous refrigeration controls and settings, and then relies on employees to train others in organization on teachings from the program. WWEEC (wastewater) and WSOC (water) has a heavy SEM focus with plant managers and public works directors attending, as well as policy makers from DEQ and EPA in attendance to support the efforts. Post any SEM engagement, customers continue to engage with Idaho Power through our custom and streamlined projects and are also invited to attend lunch networking events with their cohorts and others who have completed SEM to continue to engage them and provide training and support on SEM related continuous improvement. | | | | | | | | | | |
| SEM participant engagement model | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Participants engaged as a cohort</td> <td style="width: 20%; text-align: center;">✓</td> </tr> <tr> <td>Participants engaged as individual organizations</td> <td></td> </tr> <tr> <td>Some participants are engaged as a cohort, others as individuals</td> <td></td> </tr> </table> | Participants engaged as a cohort | ✓ | Participants engaged as individual organizations | | Some participants are engaged as a cohort, others as individuals | | | | | |
| Participants engaged as a cohort | ✓ | | | | | | | | | | |
| Participants engaged as individual organizations | | | | | | | | | | | |
| Some participants are engaged as a cohort, others as individuals | | | | | | | | | | | |
| Approximate share of participant meetings conducted as a cohort | All customers attend cohort based workshops, the program also engages them in one-on-one meetings between workshops. | | | | | | | | | | |
| SEM participant screening criteria | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Annual energy consumption: Only a criterion for customers interested in EMIS</td> <td style="width: 20%; text-align: center;">✓</td> </tr> <tr> <td>Energy savings potential:</td> <td></td> </tr> <tr> <td>Energy management commitment:</td> <td></td> </tr> <tr> <td>Participation in energy efficiency program offerings</td> <td></td> </tr> <tr> <td>Other:</td> <td></td> </tr> </table> | Annual energy consumption: Only a criterion for customers interested in EMIS | ✓ | Energy savings potential: | | Energy management commitment: | | Participation in energy efficiency program offerings | | Other: | |
| Annual energy consumption: Only a criterion for customers interested in EMIS | ✓ | | | | | | | | | | |
| Energy savings potential: | | | | | | | | | | | |
| Energy management commitment: | | | | | | | | | | | |
| Participation in energy efficiency program offerings | | | | | | | | | | | |
| Other: | | | | | | | | | | | |
| Length of SEM program engagement | Two years for all programs, but talking about moving to an ongoing support phase. | | | | | | | | | | |
| PROGRAM DESIGN | | | | | | | | | | | |
| Program support for obtaining and demonstrating participant commitment to SEM | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Establish policies or goals</td> <td style="width: 20%; text-align: center;">✓</td> </tr> <tr> <td>Make a commitment of resources (personnel, financial)</td> <td style="text-align: center;">✓</td> </tr> <tr> <td>Sign a contract or memorandum of understanding</td> <td style="text-align: center;">✓</td> </tr> </table> | Establish policies or goals | ✓ | Make a commitment of resources (personnel, financial) | ✓ | Sign a contract or memorandum of understanding | ✓ | | | | |
| Establish policies or goals | ✓ | | | | | | | | | | |
| Make a commitment of resources (personnel, financial) | ✓ | | | | | | | | | | |
| Sign a contract or memorandum of understanding | ✓ | | | | | | | | | | |
| Requirement to demonstrate results in order to remain in the program? | Idaho Power has found that even customers that are not engaged at the beginning of the cohort still learn throughout the process and come to us later with capital projects, even if they did not achieve behavioral savings. | | | | | | | | | | |

Idaho Power

| | | |
|---|---|---|
| Program support for energy assessment and planning | Conduct an energy management assessment | ✓ |
| | Develop an energy map | ✓ |
| | Perform detailed energy studies or audits | ✓ |
| | Establish performance metrics | ✓ |
| | Develop a project register or other project plan | ✓ |
| | Other: | |
| Follow-up energy management assessment | No | |
| Program support for education and training | Energy management professional certification (such as CEM) | |
| | Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization) | ✓ |
| | Management system training for executives or managers | |
| | Development or maintenance of an energy baseline model | ✓ |
| | Energy management information system training | ✓ |
| | Other: | |
| Other employee engagement | | |
| Program support for energy IT and energy management information systems (EMIS) | Installation of submeters on end use equipment | ✓ |
| | Energy information technologies | ✓ |
| | Other: | |
| | Energy IT-EMIS support available to all SEM participants: Except in the case of the water cohort, where it would not be feasible to install EMIS at every meter. The model correlates well without it, thus with monthly data, the customer will be able to see progress. | ✓ |
| Program support for energy IT-EMIS selection and design | | |
| Financial support for energy IT-EMIS | The program covers the cost of the EMIS and the subscription fee during the course of the cohort, after the cohort period has expired, it is up to the customer to maintain the license. Their cost would then be eligible costs for incentive, should they achieve additional savings. | |
| SEM program incentive structure | Pay for performance: \$0.18/kWh saved in each year, up to 70 percent of the incurred costs | ✓ |
| | Capital measure incentives: \$0.18/kWh saved first year, up to 70 percent of the incurred costs | ✓ |
| | "Milestone" incentives: | |
| Monitoring and reporting SEM impacts | Manual collection of data performed by the customer. Delivery contractor responsible for creating and maintaining baseline. | |
| Program goals for SEM participants post-implementation | Ongoing goals include developing a deeper relationship with the customers, and engaging with their capital projects. Talking about going forward with additional years of SEM with those that are achieving results. | |

Idaho Power

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| Post-implementation SEM support | Energy management assessments | ✓ |
| | Maintain participant energy baseline model | ✓ |
| | Ongoing support for energy IT-EMIS | ✓ |
| | Training updates for participant staff | ✓ |
| | Other: | |
| Support for other SEM pathways | ENERGY STAR Challenge for Industry | |
| | DOE Better Plants Challenge | |
| | ISO 50001 | |
| | Superior Energy Performance | |
| | Other: | |

PacifiCorp

| SEM PROGRAM OVERVIEW | | |
|---|---|---|
| SEM program name | wattsmart Business Program | |
| SEM program website | wattsmart.com | |
| Year SEM program launched | 2013 | |
| Number of SEM customers served to date | 17 | |
| Number of SEM customers served in 2015 | 15 | |
| Estimated electric savings attributed to SEM in 2015 | 6.1 GWh | |
| Estimated natural gas savings attributed to SEM in 2015 | N/A | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | ✓ |
| | Included in program RFP or other procurement materials | |
| | Used to inform customer-facing SEM program materials | |
| | Other: | |
| REGULATORY CONTEXT | | |
| The program is required to report the following information to regulators | Energy savings, kWh | ✓ |
| | Demand savings, kW | |
| | Persistence of savings | ✓ |
| | Statistical significance of savings | ✓ |
| | Program budget or cost | ✓ |
| | Customer satisfaction | |
| | Other: | |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | ✓ |
| | Utility cost test (UCT) | ✓ |
| | Participant cost test (PCT) | ✓ |
| | Ratepayer impact measure test (RIM) | ✓ |
| SEM-related savings claimed | Operational, maintenance, or behavior-based energy savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to SEM program | |
| | Capital measure savings, attributed to another program | ✓ |
| | Other: | |
| Persistence term used for O&M savings attributable to SEM implementation | 3 years | |
| PROGRAM DELIVERY | | |

PacifiCorp

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| SEM program go-to-market strategy | Face to face interaction with large, managed utility customers via internal energy efficiency project manager staff. No general bulk marketing of any kind. | |
| SEM participant engagement model | Participants engaged as a cohort | |
| | Participants engaged as individual organizations | |
| | Some participants are engaged as a cohort, others as individuals | ✓ |
| Approximate share of participant meetings conducted as a cohort | 37 percent of meetings are conducted as a cohort, 63 percent with individual participants | |
| SEM participant screening criteria | <u>Annual energy consumption:</u> | |
| | Energy savings potential: Different for individuals vs. cohort. In cohort, we allow smaller thresholds due to economy of scale. For a large individual, they must save 1-2 million kWh to be considered. For cohorts, we will aggregate to that amount. | ✓ |
| | Energy management commitment: See detailed description below | ✓ |
| | Participation in energy efficiency program offerings Other: | |
| Energy management commitment detailed | Pacificorp uses a 5-page assessment guide to consider if a customer is ready for engagement. Questions are assigned points and a final score determines readiness to engage. Sample questions are included below: <u>Executives</u> Will the plant manager and/or site VP meet with you? Is the executive on-board with investing human resources in a strategic initiative? Will the executive sign an Energy Policy and support energy management at the executive level? <u>Organization</u> Is organization in stable growth mode (i.e. not rapidly expanding or shrinking)? Is the company financially stable (not merging, being acquired, or in receivership)? Is there low personnel turnover? Does the facility have internal training programs? Does the facility have visible signs of recognition and internal communication? Does the organization have solid preventive maintenance and investments in plant improvements versus only "fixing what is broken"? <u>Facility</u> Is the facility part of a multi-site organization? Has the facility participated in other Rocky Mountain Power Wattsmart programs? Does the facility have variability (not running 24/7/365)? Is the facility open to refine their O&M procedures (i.e. not totally "locked down")? Is the facility generally well-maintained, clean and orderly? (this indicates management systems, continuous improvement, and/or preventive maintenance) Is the facility more than ten years old? (this is to understand potential savings) Does the facility have centralized building/production systems (e.g. SCADA, BMS) and staff with access to this data? | |

PacifiCorp

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| | Does the facility have clearly understood access to energy data? (i.e. your contact knows exactly who to go to for this data) <u>History</u> Does the organization have a positive experience with management systems and/or continuous improvement? | |
| Length of SEM program engagement | 18-24 months | |
| PROGRAM DESIGN | | |
| Program support for obtaining and demonstrating participant commitment to SEM | Establish policies or goals | ✓ |
| | Make a commitment of resources (personnel, financial) | ✓ |
| | Sign a contract or memorandum of understanding | |
| Requirement to demonstrate results in order to remain in the program? | None | |
| Program support for energy assessment and planning | Conduct an energy management assessment | |
| | Develop an energy map | ✓ |
| | Perform detailed energy studies or audits | ✓ |
| | Establish performance metrics | ✓ |
| | Develop a project register or other project plan | ✓ |
| Other: | | |
| Follow-up energy management assessment | No | |
| Program support for education and training | Energy management professional certification (such as CEM) | |
| | Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization) | ✓ |
| | Management system training for executives or managers | |
| | Development or maintenance of an energy baseline model | ✓ |
| | Energy management information system training | ✓ |
| Other: | | |
| Other employee engagement | None | |
| Program support for energy IT and energy management information systems (EMIS) | Installation of submeters on end use equipment | |
| | Energy information technologies | |
| | Other: Energy IT-EMIS support available to all SEM participants | |
| Program support for energy IT-EMIS selection and design | N/A | |
| Financial support for energy IT-EMIS | N/A | |

PacifiCorp

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| SEM program incentive structure | Pay for performance: \$.02/kWh first year savings | ✓ |
| | Capital measure incentives: \$.015/kWh if not a deemed measure | ✓ |
| | “Milestone” incentives: | |
| Monitoring and reporting SEM impacts | This is conducted during the engagement by the utility and is a combination of automated and manual processes. Each customer is different, and cohorts are larger data sets. Utility provides the customer their baseline. | |
| Program goals for SEM participants post-implementation | PacifiCorp plans subsequent phases of continual engagement. Thus far we have only begun this with one customer. | |
| Post-implementation SEM support | Energy management assessments | |
| | Maintain participant energy baseline model | |
| | Ongoing support for energy IT-EMIS | |
| | Training updates for participant staff | |
| | Other: | |
| Support for other SEM pathways | ENERGY STAR Challenge for Industry | |
| | DOE Better Plants Challenge | |
| | ISO 50001 | |
| | Superior Energy Performance | |
| | Other: | |

Southern California Edison—SoCalGas

| SEM PROGRAM OVERVIEW | | |
|---|---|---|
| SEM program name | Continuous Energy Improvement (CEI) Program | |
| SEM program website | https://www.socalgas.com/for-your-business/energy-savings/cei | |
| Year SEM program launched | 2010 | |
| Number of SEM customers served to date | 28 | |
| Number of SEM customers served in 2015 | 7 | |
| Estimated electric savings attributed to SEM in 2015 | Non-resource acquisition program | |
| Estimated natural gas savings attributed to SEM in 2015 | Non-resource acquisition program | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | ✓ |
| | Included in program RFP or other procurement materials | |
| | Used to inform customer-facing SEM program materials | ✓ |
| | Other: Used to support program structure and objectives with regulators | ✓ |
| REGULATORY CONTEXT | | |
| The program is required to report the following information to regulators | Energy savings, kWh | |
| | Demand savings, kW | |
| | Persistence of savings | |
| | Statistical significance of savings | |
| | Program budget or cost | ✓ |
| | Customer satisfaction | ✓ |
| | Other: CEI is currently a non-resource program. Information is not reported to regulators regarding SEM program performance, though the program serves as a pipeline for customers to participate in other resource-based rebate and incentive program. | ✓ |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | |
| | Utility cost test (UCT) | |
| | Participant cost test (PCT) | |
| | Ratepayer impact measure test (RIM) | |
| SEM-related savings claimed | Operational, maintenance, or behavior-based energy savings, attributed to SEM program: the program tracked and measured O&M savings, but did not claim them for 2015. | ✓ |
| | Capital measure savings, attributed to SEM program | |
| | Capital measure savings, attributed to another program | ✓ |
| | Other: | |

Southern California Edison—SoCalGas

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| Persistence term used for O&M savings attributable to SEM implementation | N/A | |
| PROGRAM DELIVERY | | |
| SEM program go-to-market strategy | The program has two approaches: One-on-one onsite coaching is provided to assist the customer in the organizational and technical assessment of the customer’s facility, as well as planning, implementation and in setting up a methodology for continuously evaluating and modifying the operations, as needed, to optimize the success of CEI persisting after the one-on-one coaching has ended. A structured cohort peer learning approach with training workshops is available for multi-site facilities, but no customers are currently participating in this approach. | |
| SEM participant engagement model | Participants engaged as a cohort | |
| | Participants engaged as individual organizations | ✓ |
| | Some participants are engaged as a cohort, others as individuals | |
| Approximate share of participant meetings conducted as a cohort | N/A | |
| SEM participant screening criteria | Annual energy consumption: 250 kW demand and 50,000 therms | ✓ |
| | Energy savings potential: | |
| | Energy management commitment: Demonstrate that company leadership is committed to long-term energy improvement | ✓ |
| | Participation in energy efficiency program offerings | ✓ |
| | Other: Participants must be customers of SCE and So Cal Gas | ✓ |
| Length of SEM program engagement | One on one on site coaching: two years | |
| PROGRAM DESIGN | | |
| Program support for obtaining and demonstrating participant commitment to SEM | Establish policies or goals | ✓ |
| | Make a commitment of resources (personnel, financial) | ✓ |
| | Sign a contract or memorandum of understanding | ✓ |
| Requirement to demonstrate results in order to remain in the program? | Participants are required to achieve key program milestones. | |
| Program support for energy assessment and planning | Conduct an energy management assessment | ✓ |
| | Develop an energy map | |
| | Perform detailed energy studies or audits | ✓ |
| | Establish performance metrics | ✓ |
| | Develop a project register or other project plan | ✓ |
| Other: | | |
| Follow-up energy management assessment | No. However, the program does include a “light-touch” post-CEI engagement component to track customer persistence following the end of the one-on-one coaching from CEI Advisors. | |

Southern California Edison—SoCalGas

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|---|--|---|
| Program support for education and training | Energy management professional certification (such as CEM) | |
| | Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization) | ✓ |
| | Management system training for executives or managers | |
| | Development or maintenance of an energy baseline model | ✓ |
| | Energy management information system training | |
| Other: | | |
| Other employee engagement | The program hosts an energy awareness event to educate all employees on the CEI initiative and introduce the energy policy, goals, and energy team. | |
| Program support for energy IT and energy management information systems (EMIS) | Installation of submeters on end use equipment | |
| | Energy information technologies | |
| | Other: SEM advisors assist participants in developing energy dashboards | ✓ |
| | Energy IT-EMIS support available to all SEM participants | |
| Program support for energy IT-EMIS selection and design | N/A | |
| Financial support for energy IT-EMIS | N/A | |
| SEM program incentive structure | Pay for performance: | |
| | Capital measure incentives: | |
| | “Milestone” incentives: | |
| | No financial incentives provided from the SEM program | ✓ |
| Monitoring and reporting SEM impacts | Energy impact is evaluated in several ways including a top down approach using energy use intensity and a bottom up approach that documents energy impacts of energy savings measures. Improvements from operational, behavioral, or cultural changes may result in incremental savings impacts that accumulate over time. Therefore, trend analysis over a significant time period is required to quantify these improvements. Monitoring and reporting is performed by the SEM advisors and implementation contractor. | |
| Program goals for SEM participants post-implementation | Assist program participants to develop a self-sustaining energy management system by the end of the CEI engagement. Utility account managers will continue to follow-up with program participants, with the strategic energy management plan as a basis for future efficiency projects. | |
| Post-implementation SEM support | Energy management assessments | |
| | Maintain participant energy baseline model | ✓ |
| | Ongoing support for energy IT-EMIS | |
| | Training updates for participant staff | |
| | Other: | |
| Support for other SEM pathways | ENERGY STAR Challenge for Industry | |
| | DOE Better Plants Challenge | |
| | ISO 50001 | ✓ |
| | Superior Energy Performance | ✓ |
| | Other: The program informs customers about these programs, but no direct support is provided. | |

Xcel Energy

| SEM PROGRAM OVERVIEW | | |
|---|--|---|
| SEM program name | Process Efficiency (PE) and Energy Information Systems (EIS) | |
| SEM program website | None provided | |
| Year SEM program launched | Process Efficiency: 2007 EIS: 2015 | |
| Number of SEM customers served to date | Process Efficiency: 146 EIS: 0 | |
| Number of SEM customers served in 2015 | Process Efficiency: 23 EIS: 0 | |
| Estimated electric savings attributed to SEM in 2015 | 21.1 GWh | |
| Estimated natural gas savings attributed to SEM in 2015 | N/A | |
| Program uses the CEE SEM Minimum Elements in the following ways: | Used as a resource to inform program design | ✓ |
| | Included in program RFP or other procurement materials | |
| | Used to inform customer-facing SEM program materials | |
| | Other: | |
| REGULATORY CONTEXT | | |
| The program is required to report the following information to regulators | Energy savings, kWh | ✓ |
| | Demand savings, kW | ✓ |
| | Persistence of savings | ✓ |
| | Statistical significance of savings | ✓ |
| | Program budget or cost | ✓ |
| | Customer satisfaction | |
| | Other: Costs by type | ✓ |
| Required program cost-effectiveness tests | Total resource cost test (TRC) | ✓ |
| | Utility cost test (UCT) | ✓ |
| | Participant cost test (PCT) | ✓ |
| | Ratepayer impact measure test (RIM) | ✓ |
| SEM-related savings claimed | Operational, maintenance, or behavior-based energy savings, attributed to SEM program | |
| | Capital measure savings, attributed to SEM program | ✓ |
| | Capital measure savings, attributed to another program | |
| | Other: The program claims operational savings (not behavioral). In "Operational" we include the examples of automated set points, AHU leak reduction, outside air reduction. | ✓ |

Xcel Energy

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| Persistence term used for O&M savings attributable to SEM implementation | For operational savings (described in cell above): 7 years | |
| PROGRAM DELIVERY | | |
| SEM program go-to-market strategy | Xcel Energy's Account Representatives directly influence customers to enroll in the PE program. The program is delivered by a contractor, who along with the account representatives, maintain long-term relationships with the customer. The program provides two phases of studies as well as implementation support and M&V for capital and operational improvements. Xcel Energy recently introduced EIS which can be a stand-alone program or an additional module within PE. | |
| SEM participant engagement model | Participants engaged as a cohort: The program is considering adding the cohort model for one or two specific industries, but has not done so to date. | |
| | Participants engaged as individual organizations | ✓ |
| | Some participants are engaged as a cohort, others as individuals | |
| Approximate share of participant meetings conducted as a cohort | N/A | |
| SEM participant screening criteria | Annual energy consumption: 2 GWh (formerly 10 GWh) | ✓ |
| | Energy savings potential: | |
| | Energy management commitment: | |
| | Participation in energy efficiency program offerings | ✓ |
| Other: | | |
| Length of SEM program engagement | Phase 1 - "Identification" - Usually < 2 months. Phase 2 - "Scoping" (and detailed study) - 2-6 months Phase 3 - "Implementation" - Up to 5 years. | |
| PROGRAM DESIGN | | |
| Program support for obtaining and demonstrating participant commitment to SEM | Establish policies or goals | ✓ |
| | Make a commitment of resources (personnel, financial): described below | ✓ |
| | Sign a contract or memorandum of understanding | ✓ |

Xcel Energy

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|--|---|--|---|--|---|---|---|---|---|--|---|--------|--|
| <p>Requirement to demonstrate results in order to remain in the program?</p> | <p>The program requires customers to demonstrate commitment and deliver on several key milestones, in two phases: Phase 1 Requirement: Commitment and input from members of the site management team including function representatives from operations, finance, facilities or utilities management, maintenance, and procurement. Phase 2 Requirement: The customer must</p> <ul style="list-style-type: none"> • Assign individual(s) to be responsible for "development of energy management" • Provide knowledgeable plant support personnel for on-site field evaluations • Furnish plant data (if available) including floor plan layouts, equipment data sheets, previous reports or data collected, metered data for energy, available operating parameters and key volume indicators • Provide prior reports that document understanding of energy opportunities • Provide or disclose financial approval criteria, or hurdle rate, for projects, and agree to good-faith efforts to fund and implement projects that meet that financial criteria • Provide financial contribution of a maximum total contribution of \$7,500 | | | | | | | | | | | | |
| <p>Program support for energy assessment and planning</p> | <table border="1"> <tr> <td>Conduct an energy management assessment: The program uses Envinta 1-to-5</td> <td>✓</td> </tr> <tr> <td>Develop an energy map</td> <td>✓</td> </tr> <tr> <td>Perform detailed energy studies or audits</td> <td>✓</td> </tr> <tr> <td>Establish performance metrics</td> <td>✓</td> </tr> <tr> <td>Develop a project register or other project plan</td> <td>✓</td> </tr> <tr> <td>Other:</td> <td></td> </tr> </table> | Conduct an energy management assessment: The program uses Envinta 1-to-5 | ✓ | Develop an energy map | ✓ | Perform detailed energy studies or audits | ✓ | Establish performance metrics | ✓ | Develop a project register or other project plan | ✓ | Other: | |
| Conduct an energy management assessment: The program uses Envinta 1-to-5 | ✓ | | | | | | | | | | | | |
| Develop an energy map | ✓ | | | | | | | | | | | | |
| Perform detailed energy studies or audits | ✓ | | | | | | | | | | | | |
| Establish performance metrics | ✓ | | | | | | | | | | | | |
| Develop a project register or other project plan | ✓ | | | | | | | | | | | | |
| Other: | | | | | | | | | | | | | |
| <p>Follow-up energy management assessment</p> | <p>The program offers follow-up assessments if the original assessment is out-of-date, or if a more detailed, specialized study of a complex system is recommended.</p> | | | | | | | | | | | | |
| <p>Program support for education and training</p> | <table border="1"> <tr> <td>Energy management professional certification (such as CEM)</td> <td></td> </tr> <tr> <td>Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization)</td> <td></td> </tr> <tr> <td>Management system training for executives or managers</td> <td></td> </tr> <tr> <td>Development or maintenance of an energy baseline model</td> <td>✓</td> </tr> <tr> <td>Energy management information system training</td> <td></td> </tr> <tr> <td>Other:</td> <td></td> </tr> </table> | Energy management professional certification (such as CEM) | | Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization) | | Management system training for executives or managers | | Development or maintenance of an energy baseline model | ✓ | Energy management information system training | | Other: | |
| Energy management professional certification (such as CEM) | | | | | | | | | | | | | |
| Energy efficiency subject training (such as pump system efficiency, refrigeration system optimization) | | | | | | | | | | | | | |
| Management system training for executives or managers | | | | | | | | | | | | | |
| Development or maintenance of an energy baseline model | ✓ | | | | | | | | | | | | |
| Energy management information system training | | | | | | | | | | | | | |
| Other: | | | | | | | | | | | | | |
| <p>Other employee engagement</p> | <p>None offered at this time</p> | | | | | | | | | | | | |
| <p>Program support for energy IT and energy management information systems (EMIS)</p> | <table border="1"> <tr> <td>Installation of submeters on end use equipment</td> <td></td> </tr> <tr> <td>Energy information technologies: EMIS support is available through the EIS program</td> <td>✓</td> </tr> <tr> <td>Other:</td> <td></td> </tr> <tr> <td>Energy IT-EMIS support available to all SEM participants: EMIS program only</td> <td>✓</td> </tr> </table> | Installation of submeters on end use equipment | | Energy information technologies: EMIS support is available through the EIS program | ✓ | Other: | | Energy IT-EMIS support available to all SEM participants: EMIS program only | ✓ | | | | |
| Installation of submeters on end use equipment | | | | | | | | | | | | | |
| Energy information technologies: EMIS support is available through the EIS program | ✓ | | | | | | | | | | | | |
| Other: | | | | | | | | | | | | | |
| Energy IT-EMIS support available to all SEM participants: EMIS program only | ✓ | | | | | | | | | | | | |

Xcel Energy

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| Program support for energy IT-EMIS selection and design | An Xcel Energy-contracted vendor is available to enrolled customers. An enrolled customer could select a different vendor and receive custom performance-based incentives, but we do not offer support for that selection. | |
| Financial support for energy IT-EMIS | Financial incentives based on anticipated savings, up to 60 percent of installation costs as well as 1st year subscription fees. Cost sharing of additional subscription fees would be considered on an individual case basis. | |
| SEM program incentive structure | Pay for performance | |
| | Capital measure incentives: Energy Management Systems or Compressed Air improvements: greater of \$0.0685/kWh or \$600/kW. All other capital or O&M Measures: greater of \$0.0457/kWh or \$400/kW. | ✓ |
| | "Milestone" incentives | |
| | Other: For completion of "bundles" of measures identified in phase 2, the customer receives a 30 percent bonus above all incentives received in that bundle. | ✓ |
| Monitoring and reporting SEM impacts | Post monitoring or data collection for capital and operational projects is manual, via system logs or by placing data loggers. It is performed by the program contractor and/or the state's 3rd party auditor. In either case, the expense is born by the program (not the customer). | |
| Program goals for SEM participants post-implementation | The program seeks to follow-up with each enrollee to prompt implementation of all the identified measures, and to continuously improve energy performance. | |
| Post-implementation SEM support | Energy management assessments | ✓ |
| | Maintain participant energy baseline model | |
| | Ongoing support for energy IT-EMIS: EMIS program only | ✓ |
| | Training updates for participant staff | |
| | Other: | |
| Support for other SEM pathways | ENERGY STAR Challenge for Industry | |
| | DOE Better Plants Challenge | |
| | ISO 50001 | |
| | Superior Energy Performance | |
| | Other: | |