



GROUP D

Strategic Energy Management Activity Report – PY2023 Interim Findings

California Public Utilities Commission

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Glossary of key terms and acronyms

California Public Utilities Commission (CPUC)

Energy Champion – A customer representative for the success of the SEM program at the site. This individual is responsible for coordinating both with the SEM Energy Coach and internally with any site staff, including the Energy Team, Data Owner, and Executive Sponsor.

Energy Coach – A customer-facing member of the vendor's team responsible for supporting customers and communicating progress with the program administrator (PA).

Energy efficiency (EE) – In this context, activities or programs that encourage customers to invest in more efficient equipment or controls that reduce energy use while maintaining a comparable level of service.

Energy Management Assessment (EMA) – A review that provides a cycle-by-cycle summary of the site's energy management business practices relative to the business practices introduced in that cycle. The EMA is based on US DOE's 50001 Ready Energy Management assessment (50001 Ready EMA).

Energy Management Information System (EMIS) – The proper integration and visualization of energy information, allowing multiple levels of employees and management within an organization to take actions and make decisions that save energy and maintain energy savings.

Energy Team – A cross-functional team (i.e., a team including management, production, procurement, maintenance, HR) that meets regularly to manage and develop any energy management-related business practices and activities.

Evaluation, Measurement, and Verification (EM&V) – the collection of methods and processes used to assess the performance of energy efficiency activities so that planned results can be achieved with greater certainty and future activities can be more effective.

Executive Sponsor – The highest-level manager available at the site (typically the site or facility manager), responsible for ensuring the Energy Team has the resources it needs to succeed during the SEM program.

Impact Study - A systematic process to evaluate energy projects' environmental, social, and economic effects.

Implementation Vendor – A third-party entity contracted by a program administrator (PA) to design, implement, and deliver programs.

Implementation Vendor Program Manager (VPM) – The program manager at the third-party entity contracted by the program administrator to oversee and implement various SEM programs.

Independent Evaluator – Independent evaluation experts that contract with various program administrators to oversee and ensure transparency with final contracting between program administrators and implementation vendors.

Marin Clean Energy (MCE) Measure – A specific customer action that reduces or otherwise modifies energy end-use patterns; a product whose installation and operation at a customer's premises reduces the customer's on-site energy use.

Net-to-gross ratio (NTGR) – The ratio of verified net energy savings to verified gross energy savings for an efficiency program.

Pacific Gas and Electric Company (PG&E)

Program Year (PY)

San Diego Gas & Electric (SDG&E)



Southern California Edison (SCE)

Southern California Gas (SCG) Strategic Energy Management (SEM) – A method of managing energy that uses techniques for continual improvement and takes a systematic approach to energy performance. SEM involves, at a minimum, the following three elements: commitment, energy management planning and implementation, and a system for measuring and reporting performance.

Third-Party (3P) Vendor – Organization that implements programs on behalf of a utility.

Program administrator (PA) – An entity tasked with the functions of portfolio management of energy efficiency programs and program choice.

Program administrator Program Manager (PAPM) – The PA staff person responsible for the success of the PA's SEM program, with the responsibility of overseeing the SEM implementation vendor.

Sector or market sector – A group of customers in the same general industry.

1 EXECUTIVE SUMMARY

This interim report shares key insights from the first year of DNV's two-year evaluation of California's Strategic Energy Management (SEM) program conducted for the California Public Utilities Commission (CPUC). The study highlights progress and opportunities to help Program Administrators (PAs) strengthen energy efficiency efforts across the state.

1.1 Background

SEM is a high-engagement approach to energy management that emphasizes continuous improvement and a systematic method for enhancing program participants' energy performance. This high level of participant engagement is integral to SEM's success. The SEM program implementer uses an Energy Coach to work with site-level staff to identify and execute energy-saving opportunities. Participating sites commit their staff to fulfilling the SEM-defined roles of Energy Champion (participant SEM lead), the Executive Sponsor (participant decision-maker), and other support roles as part of the participant Energy Team.

SEM is built on three core elements: commitment, energy management planning and implementation, and a system for measuring and reporting performance. The SEM Design Guide outlines the following core elements that all programs must provide to participants.¹ These are:

1. **Kick-off meeting.** Introducing SEM to the site, defining the roles at the facility, and laying out a program schedule.
2. **Energy management assessment (EMA).** Assessing the site's current energy use policies and procedures. The implementer conducts these assessments each year of the program and has the option to share the results with the facility.
3. **Energy use mapping.** Detailed mapping of all energy consumption at the facility.
4. **Energy treasure hunt.** Walking through the entire facility searching for ways to reduce energy waste, either through capital project upgrades or process and behavioral changes.
5. **Action plan and support.** Identifying and creating action plans to meet SEM requirements, including meetings, trainings, and workshops.
6. **Energy management information system (EMIS).** Developing a system to manage energy use and model energy savings across the entire facility.
7. **Future planning.** Creating a plan for meeting program requirements in future program years, and for continuing to pursue energy efficiency after program participation ends.

The SEM vendor must maintain a site-specific **Opportunity Register** to record and track the progress of each identified energy savings action.

Designed as a long-term program that works with participants over a six-year period, the SEM program is divided into three two-year phases. Participants join in groups, called cohorts, based on when they start. Each phase includes specific planning and action steps. Participant projects started in the first year are often improved and expanded upon in the second year.

¹ Sergio Dias Consulting. *California SEM M&V Guide*. https://pda.energydataweb.com/api/view/2648/CA_SEM_MV_Guide_v3.02.pdf



1.2 Research objectives

While California's SEM programs have operated in the industrial sector since 2018, they have since expanded to other sectors.² With this expansion, and an increase in third-party program implementers administering SEM programs, it is important to ensure that SEM projects continue to adhere to the SEM Design Guide.

The primary objectives of this research are to:

- Evaluate the degree to which the SEM PAs' delivery met the spirit and intent of the SEM Design Guide³ in Program Year (PY) 2023 and PY 2024.
- Assess stakeholder satisfaction with the program.
- Identify opportunities for improvement.

1.3 Study approach

DNV interviewed a cross-section of program stakeholders and reviewed program records to complete the above research objectives. We conducted 40 interviews of SEM participants, implementation vendors, PA staff, and state independent evaluators. The Activity Report, conducted in parallel with the PY 2023 SEM evaluation, measurement, and verification (EM&V) study,⁴ shares a common participant sample.

Due to the program being delivered in three, two-year cycles, a full sample of SEM participants spans two calendar years. Accordingly, the Activity Report also spans two years, to capture a sample of all projects completing a cycle. This interim report, or Phase 1, represents year one, and Phase 2 represents year two. We provide a high-level explanation of these two phases below:

- Phase 1: Data collected for projects completing a two-year cycle in PY2023. Data collection includes PA staff and implementer staff of all participating PAs and independent evaluators, as well as survey responses about sampled projects. In PY2024, only Marin Clean Energy (MCE), Southern California Edison (SCE), and Southern California Gas (SCG) had projects completing a cycle due to how the PAs manage the SEM cohorts. The participant sample size for Phase 1 projects is roughly one-third of the full, two-year sample.
- Phase 2: Data collected for projects completing a two-year cycle in PY2024. Data collection will include further implementer staff interviews for all participating PAs, survey responses for a selected sample of projects, and in-depth interviews with all PAs who completed projects in PY 2024. We will also interview customers who ended their participation to understand their decision-making. This participant sample for Phase 2 is roughly two-thirds of the full two-year sample and includes a sample of projects from all PAs.

Similar to the 2023 SEM EM&V Study, the Phase 2 report will integrate the interim findings from this report with the data collection findings in Phase 2.

Table 1-1 shows the population of SEM projects completed in PY 2023 and the expected number of completed projects for PY 2024. Similar to the PY 2023 SEM EM&V study, this study reports findings for MCE, SCE, and SCG completed projects, since PG&E and SDG&E had no projects to complete a cycle in PY 2023.

² DNV. 2024. *SEM Expansion Study: Final Report*. California Public Utilities Commission. https://pda.energydataweb.com/api/view/3978/CPUC_SEM_Expansion_Study_Final%20Report.pdf.

³ Sergio Dias Consulting. *California SEM M&V Guide*. https://pda.energydataweb.com/api/view/2648/CA_SEM_MV_Guide_v3.02.pdf

⁴ DNV and Guidehouse. 2025. Group D Evaluation, Measurement, and Verification of Program Year 2023 Strategic Energy Management Projects. California Public Utilities Commission. https://www.calmac.org/publications/SEM_PY_2023_EMV_Report.pdf. This is an impact study, which is, as defined by the California Energy Efficiency Evaluation Protocols (2006), evaluates the net energy and demand savings resulting from energy efficiency programs.

Table 1-1. SEM projects completing a cycle in PY 2023 and in PY 2024

Estimated project populations	Projects completing cycle in PY 2023	Projected completing cycle in PY 2024
PG&E	–	40
SDG&E	–	-
MCE	4	1
SCE	40	25–35
SCG	9	2–3
Total	53	68–79⁵

DNV attempted interviews of the Energy Champions, Executive Sponsors, and Energy Team Members, as well as the implementation Energy Coaches of each of the sampled projects. We designed these interviews to fulfil the objectives of this study and to support the PY 2023 SEM EM&V study; thus, the team conducted data collection as a joint activity between the two independent studies. Common survey instruments included questions supporting both objectives. The PY 2023 SEM EM&V study applied a theory-driven attribution (TDA) research approach, which measured SEM Design Guide compliance and participant engagement. We integrated the TDA quantitative results into this study (see Section 4.1.5) since they support the objectives to determine program compliance and customer satisfaction.

Of the various groups interviewed, specific details of each interview effort are below:

- PA program managers (5 completes)
 - DNV interviewed representatives from all PAs that run SEM programs.
 - Questions focused on the SEM process, their interaction with participants and vendors, and overall satisfaction, both for them with the program and their best estimate of vendor and customer satisfaction.
- Implementation vendor program managers (5 completes) and their Energy Coaches (9 completes)
 - DNV interviewed representative vendor program managers from all PAs that run SEM programs.
 - We interviewed the Energy Coaches who work with these vendors to synthesize project-related learnings with responses collected from participants.
 - Questions focused on the SEM process, vendor interaction with participants and the PAs, vendor satisfaction, their perception of PA and customer satisfaction, and questions needed to quantify program influence and TDA learnings.
- Independent evaluators (2 completes)
 - These interviews collected information to understand contracting between the PAs and the independent evaluators for SEM programs, as well as financial performance learnings.

⁵ These ranges are being finalized as of the writing of this report.

- SEM program participants, including Energy Champions, Executive Sponsors, and Energy Team members (19 completes representing 14 sites)
 - Interview topics include TDA, program influence, program process, and participant satisfaction.
 - We attempted to survey other members of the selected project's Energy Team, but without success, largely due to poor contact information.

DNV tabulated and synthesized the results of the interviews to produce the preliminary qualitative findings, conclusions, and recommendations of this interim report. The phase 2 Activity Report will include more complete quantitative results.

1.4 Findings, conclusions, and recommendations

Findings from the 2023 data collection (see Table 1-2) provided consistent indications of trends, but for a relatively small population that excluded two PAs.⁶ The PY2024 sample and follow-up will provide substantially more input from all PAs and additional projects, allowing DNV to finalize the interim results. For the full findings, recommendations, and implications for the next Activity Report, please see Section 5.

Table 1-2. PY 2023 findings, conclusions, and recommendations

Key findings and conclusions	Preliminary recommendations and considerations
1. Programs generally deliver the SEM Design Guide-specified components to participants, although participants' perceived value scores of the individual components range from 5.1 to 8.9 out of 10. This shows variability in participant satisfaction. A few participants report that they did not receive the EMIS activity, the EMA activity, or workshop trainings, among others. Not receiving all required Guide activities shows a lack of compliance and indicates that some participants are not receiving all services the program is designed to deliver, and indicating the service is not supporting the objectives of the program.	CPUC staff should consider a more comprehensive quality control apparatus to ensure consistent and comprehensive delivery of SEM activities to participants. This enhanced quality control will help target areas for improvement and bring accountability so that participants are getting a more consistent experience. Future activity reports and NTG surveys should track and benchmark progress through annual polling of participant satisfaction and program experience. The vendors should ensure implementation consistency across the Design Guide activities. Ensuring program Implementation Plans (IPs) closely support the program design described in the most recent SEM guides⁷. Future activity reports should be leveraged to review IPs
2. The vendor and PA project managers rate the Treasure Hunt as the most valued activity. Respondents further indicated the value of the in-person Treasure Hunt, discussing the engagement benefits of face-to-face interaction. The SEM guide requires a	We recommend that programs continue offering Treasure Hunts in the manner that adheres to the SEM Design Guide which supports multiple in-person Treasure Hunts. For these reasons we recommend that Treasure Hunts be conducted every cycle, if possible, and in person. Respondents clearly

⁶ We selected the sample of projects for customers and Energy Coaches to reach a 90/10 precision over the two years for the 2023 SEM EM&V study. The Activity Report data collection did not seek to achieve a precision target.

⁷ Sergio Dias Consulting. "California Industrial SEM M&V Guide, Version 4.02." May 11, 2025.

Key findings and conclusions	Preliminary recommendations and considerations
Treasure Hunt in first year of the first cycle and as a recommended option in the first year of subsequent cycles. None of the interviewed participants' sites had received more than one Treasure Hunt. In addition to the Treasure Hunt, participants rated the Executive Sponsor as a high-value participant role. Participants also highly rated the regular check-ins with their Energy Coach and Energy Champion. Interestingly, all nine of Vendor A's participants volunteered that they rated the vendor's Opportunity Register highly. There is a drop-off in site participation and engagement after Year 1. Vendor staff mentioned that in-person meetings improved customer engagement.	articulated the value of these Treasure Hunts, and annual in-person events can enhance engagement by allowing participants and their facility staff to interact with the program implementation vendors and Coaches. We recommend that identifying and engaging an Executive Sponsor during the screening process be mandatory to allow the implementation vendor to estimate how involved this Executive Sponsor will be. An active Executive Sponsor, supported by effective tools, is critical to project success and will ensure active participation in regular check-ins, another area identified as important to participants. Further, we recommend that programs include at least one in-person engagement activity per year, due to the positive response to in-person engagement. This can be the Treasure Hunt or a different activity. The Treasure Hunt every cycle, annual in-person engagement, and mechanism for engaging the executive sponsor should be reflected in the program implementation plans. The SEM program should track progress through review of program implementation plans, focusing on Treasure Hunt frequency and format, executive sponsor engagement during screening, and annual reporting.
3. Customer tools: Participants indicated confusion with the EMA and EMIS elements of the program, providing lower scores when asked about awareness and satisfaction. Conversely, participants also appreciated the Opportunity Register tools that one vendor shared. Phase 2 of the research will consider whether EMA and EMIS require further review and clarification for the programs. A review of EMA and EMIS activities could facilitate a better understanding of the lack of engagement and delivery.	PAs should consider reviewing the guidance documents around the EMA and EMIS to identify areas of ambiguity and provide more direction for implementation vendors and participants. We recommend training participants on the EMIS tool usage and EMA activity, via in-person workshops or virtual check-ins, and regularly reviewing how participants use the tools. Implementation Vendors should provide required tools and programs (EMA and EMIS, among others) to help participants progress, and programs should learn from other successes, such as the participants who highlighted a specific vendor's excellent Opportunity Register or tackled a particularly challenging implementation issue that is relevant to other similar business entities. This can be measured by a detailed plan's inclusion in the program implementation plan document and through subsequent participant satisfaction polling.

Key findings and conclusions	Preliminary recommendations and considerations
4. Participant awareness of the Action Plan – specifically its existence and purpose - was low (delivery scores for each PA ranged from 1.6 to 2.5 out of 5), and participants rated its purpose as unclear. This suggests that these plans are not being created in partnership with participants as often as they should be, the value is not being properly articulated, or implementation vendors are not fully aware of the expectation for delivery.	The SEM program should track progress through review of Program Implementation Plans for planned EMA and EMIS guidance updates and through longitudinal participant satisfaction polling related to EMA and EMIS tools. CPUC staff should consider Design Guide revisions for Action Plans development, including more explicit expectations for the implementation vendors. These plans should be explicitly linked to high-value activities, such as the Treasure Hunt and Opportunity Register, by making them an integral part of these activities to improve their relevance and inclusion. Vendors should also review the Action Plan with participants on an annual or biannual basis to maintain visibility and alignment. The SEM program should track progress by documenting SEM Design Guide updates to Action Plan guidance and verifying vendor application of these updates through periodic review of Action Plan use and participant review cadence.
5. The SEM Design Guide identifies other Energy Team roles beyond the Energy Champion and the Executive Sponsor. However, most project files did not identify additional Energy Team members. Further, the participants noted the importance of the Executive Sponsor in both engagement and project success. Developing and maintaining customer relationships are key, and having a robust team working together with the Energy Coach benefits this.	Implementation Vendors should enforce clear requirements for the site Energy Team. The Energy Team should identify specific individuals for each role at the beginning of the project, and the Energy Coach should verify that the roles have appropriate coverage. The SEM guide identifies necessary roles and responsibilities for an Energy Team and these are vital to site success. Future SEM activity reports should monitor progress by tracking how often project documentation list the full Energy Team composition beyond the Energy Champion and Executive Sponsor, and by assessing the continued engagement of each site-specific Executive Sponsor as a contributor to participant engagement across sites.
6. Long-term success relies on internal staffing continuity and support. Participant dropout due to a lack of on-site resources or organization staffing changes is a persistent issue. Although customers are largely satisfied with the program, participant dropout due to lack of on-site resources is a persistent issue. Also,	Participants can mitigate issues with turnover by building a robust Energy Team and roster, including back-up Energy Champions at the participant's site, to engage with the program and mitigate turnover disruptions. Programs should consider incorporating this team planning into the participant screening process and ensure Energy Sponsor support for significant internal staffing.

Key findings and conclusions	Preliminary recommendations and considerations
the PAs could not provide a list of dropout sites.	We recommend that the implementation vendor work with the participant to perform annual updates to the energy team contacts list. This will aid in understanding time commitment requirements in relation to Energy Team size. In addition, allowing for a program “pause” period when active internal staffing is temporarily not available could be beneficial to long-term engagement with participants. This will allow customers to remain participants while allowing for the flexibility to solve staffing issues. Program Implementers should document participant dropouts and conduct an exit interview to learn why. The PAMP might best conduct this, as they oversee the programs and the program quality. Future activity reports should track progress by monitoring the frequency of back-up or deputy Energy Champion designation—particularly for sites with historically high staff turnover—the regular updating of Energy Team member lists, use of statewide forums to gather feedback on program pause options when site staffing is unavailable, and the completeness of participant dropout tracking, including the frequency of conducted exit interviews.
7. Findings of this research indicate that the programs need to achieve the right balance between scaling SEM and identifying customers who can commit to the program. Program growth is vital to achieve energy savings, but growth requires customers SEM is designed for. As discussed in prior findings, the customers often did not have the resources necessary to appropriately commit to SEM. Two of five vendors do not disclose the expected manpower commitment with enrollees.	We recommend that Implementation Vendors conduct more targeted screening of customers. This will help the program focus on customers who can commit to the program long-term. This screening may include: - Clear discussion of customer resource requirements. - Greater understanding of customer goals and if SEM is the appropriate pathway for achieving them. This requires an acknowledgement that the SEM program may not be suitable for some participants due to the level of engagement needed. Better identification of expected commitment and understanding of typical industry staffing trends would benefit this screening. The SEM program should track progress by monitoring the frequency with which screening documentation includes discussion of manpower and time commitments, assessment of customer goals and SEM suitability, and by evaluating

Key findings and conclusions	Preliminary recommendations and considerations
8. Some participants expressed frustration when implementation vendors assigned to their projects lacked experience with the participant's industry or technical operations. Participants noted that insufficient industry alignment limited vendors' ability to provide relevant technical guidance, leaving participants feeling unsupported in navigating SEM activities—for example, when vendors lacked familiarity with the operational processes typical of the participant's sector.	post-enrollment persistence to assess the effectiveness of targeted screening. . Implementation vendors must ensure they have qualified staff with relevant industry experience to effectively serve the kinds of customers they are targeting for the program. The following steps will help Implementation Vendors better serve program participants: - Define required expertise and verify qualifications: Create a competency matrix outline the technical and industry-specific skills needed for each customer segment. Further, implement a structured vetting process, including resume reviews and reference check to match staff to participant needs. - Conduct biannual performance reviews and gather customer feedback to ensure staff alignment with program goals. Future SEM activities should track progress by collecting and benchmarking participant feedback on implementer industry and technical expertise over time and by assessing whether concerns are systemic across the SEM program or concentrated among specific implementation vendors.

Section 5 includes additional findings and their associated considerations that require further research in Phase 2.



2 INTRODUCTION

SEM programs in California are expanding into the non-industrial sector, resulting in a growing number of non-industrial projects. At the same time, the PAs are increasingly using third-party program implementers. This dynamic environment presents opportunities for meaningful energy savings but also increases the risk of programs drifting out of compliance with SEM principles.

To understand the design, effectiveness, and compliance of SEM programs, DNV, on behalf of the California Public Utilities Commission (CPUC), performed a comprehensive review of SEM program documentation and interviewed a wide variety of stakeholders. This document represents an interim reporting of findings of projects completing a cycle in PY 2023 but is not comprehensive of all SEM programs and all PAs in California. The 2025–2026 Activity Report will sample projects completing a cycle in PY 2024, that when combined with the PY 2023 sample will represent the full population of SEM PAs and participants, producing an integrated and comprehensive view of SEM.

This Activity Report builds on and at times directly references previously completed studies, which are now available to stakeholders on CALMAC:

- SEM Expansion Study: Title: Strategic Energy Management Expansion Study, May 23, 2024
CALMAC ID: CPU0376.01
This sets the groundwork for approving SEM for non-industrial participants and linking the SEM NTRG to the SEM Program Design. The report concluded that the SEM program design is applicable and feasible for most non-residential sectors, with some sectors potentially needing minor adjustments. The expansion study also noted the importance of program flexibility and highlighted that the quality of engagement is a core indicator of success.
- PY 21-PY 2022 Interim Ex Post Findings.
CALMAC ID:
This study took a deeper look at how well the measures implemented in the PY 21-PY 2022 evaluated savings impact evaluation were compliant with the intentions of the SEM Guides. While projects were for the most part compliant, there were areas for improvement, like ensuring projects files are complete and reporting of zero savers in CEDARS. The study also examined the fraction of measure savings from capital measures and the fraction of savings calculated using top-down vs. bottom-up methods.
- 2023 – 2024 Activity Report
CALMAC ID:
This study addressed topics that required research to support CPUC guidance. The subjects included an analysis of shortcomings in CEDARS when reporting SEM multi-year engagement in CEDARS, a review of SEM Design and M&V Guides, and a summary of how custom measures were currently treated within SEM. We made these findings for the CPUC staff, and we recommended no major changes.

3 METHODOLOGY

DNV interviewed 40 stakeholders, soliciting feedback and input from a variety of SEM program stakeholders to develop a holistic understanding of SEM program design, implementation, and performance. The goal of the study was to confirm program delivery is compliant with the SEM Design Guide and to improve program performance, with a particular focus on assessing program delivery, program satisfaction across stakeholders, and program compliance. This study complements the Impact Study,⁸ and both studies share a common participant sample. The priorities and direction of these methods did pivot, at times, to better address the needs of the CPUC and the realities of data collection. Section **Error! Reference s** **ource not found.** describes these adjustments.

Table 3-1 illustrates the program population that was the sample frame for this year's Activity Report and Impact Study (the PY 2023 completed projects) and the anticipated population for the next iteration, highlighting the greater representation achieved by finalizing this research effort in the next Activity Report.

Table 3-1. Expected SEM program populations

Estimated project populations	2023 completed projects	2024 completed projects
PG&E	–	40
SDG&E	–	–
MCE	4	1
SCE	40	25 – 35
SCG	9	2 – 3
Total	53	68-79
Reporting:	2024 – 2025 Activity Report w/ Impact Study	2025 – 2026 Activity Report w/ Impact Study

3.1 Stakeholder interviews and dispositions

Our interview efforts included in-depth interviews (IDIs) conducted as part of the annual NTG evaluation of SEM programs and this standalone Activity Report. Table 3-2 outlines these efforts, and we describe them in greater detail below. The summary includes data collected directly under this study scope and as part of the joint NTGR scope.

Table 3-2. Interview efforts as part of the data collection task

Survey target	Target	Interview completes	Instrument type
PA: Program Manager	5	5 ⁹	IDI

⁸ "Evaluation, Measurement, and Verification of Program Year 2023 Strategic Energy Management Projects" Found at https://www.calmac.org/publications/SEM_PY_2023_EMV_Report.pdf

⁹ DNV conducted group interviews for each of the five PAs. We spoke with 2 representatives from MCE, 1 from SCE, 4 from SCG and SDG&E, and 6 from PG&E.

Survey target	Target	Interview completes	Instrument type
Implementation Vendor: Program Manager	5-8	5	IDI
Implementation Vendor: Energy Coach	8	9	IDI
State Independent Evaluator: Contracts	1-2	2	IDI
Dropout/partial interviews	5-10	0	IDI
Participant interviews, Energy Champion, and Executive Sponsor	16-20	19, across 11 projects	IDI
Completes	40-53	40	

3.1.1 Program administrator program manager (PAPM) interviews

DNV conducted five interviews with the relevant program managers and additional staff from the five SEM Program Administrator Program Managers (PAPMs). Note that we interviewed PAPMs from PG&E and SDG&E even though there were no projects completed for these two PAs in PY 2023. We conducted each PAPM interview separately to mitigate potential response bias. Where multiple PM staff members worked on the same SEM program, we interviewed those PMs at the same time for the sake of efficiency. We provided the interviewees with the questions and the topics in advance to allow them to prepare.

We designed these interviews to be flexible, asking both closed- and open-ended questions, allowing interviewers to tease out further nuance from the respondent. The topics addressed in the interviews included:

- The effectiveness of the vendor and how the PA/vendor relationship is supporting SEM success
- Program dropouts: How many drops have there been? Why and when do they drop out? What can programs do to limit them?
- Core SEM program components: Are all components being performed? How effective are they? How much time do they take?
- Cost allocation of projects, with a focus on understanding how costs are allocated when multiple customers (or customers of different sizes) are involved
- The Program Implementation Plans (PIPs) and program design as part of the CA SEM design guide
- The quality of the program and how it is maintained
- Program satisfaction, as detailed in Section 3.1.6

3.1.2 Implementation vendor program manager (VPM) and Energy Coach interviews

Third-party implementation vendors are a core piece of California's SEM programs, with multiple vendors managing the PAs' SEM programs. DNV conducted five interviews with implementation vendor program managers (VPMs) from two

implementation firms (with separate VPMs for each PA program) to understand their perspective on the SEM programs, their function, and the process.

As with the PAPM interviews, we designed these interviews to be flexible, asking both closed- and open-ended questions, allowing interviewers to tease out further nuance from the respondent. The topics addressed in the interviews included:

- The PA/implementer working relationship and communication channels
- Program dropouts: How many have there been? When do dropouts occur? Why do they drop out? What can programs do to limit them?
- The transition from early planning to program implementation
- Core SEM program components: Are core components being performed? How effective are they? How much time do they take?
- Quality control (QC) procedures
- Cost allocation of projects, with a focus on understanding how costs are allocated when multiple customers (or customers of different sizes) are involved
- Program satisfaction, as detailed in Section 3.1.6
- We asked the Energy Coach about the SEM delivery and customer response for each of the projects in the sample.

The implementation vendor Energy Coaches were about delivery quality, focusing on the SEM process, commitment, and their perception of how customers viewed their interactions for each sampled project. The Energy Coach is the customer's primary point of contact with the implementation vendor. The Energy Coach is responsible for the overall delivery of the program for one or more specific sites and will typically lead the Kick-off, Treasure Hunt, and regular check-ins.

3.1.3 Customer interviews

We conducted interviews with customer-designated Energy Champions and Executive Sponsors of the sampled projects in a common instrument that incorporated NTG, theory-driven attribution (TDA), and process panels of questions.

Section 3.1.6 shows the common process questions added to the NTG survey are shown in Section 3.1.6.

3.1.4 Interview dropouts and partials

DNV attempted to recruit program dropouts and partial applicants to ask why they ended their participation and what they perceived to be program pros and cons. While we planned to ask these interviewees the process questions identified in Section 3.1.6, we were unable to recruit any dropouts. We will try again in the fall.

3.1.5 State independent evaluator interviews

We interviewed two state independent evaluators who provided review and recommendations of the third-party SEM implementor selection and contracting. These interviews provided an outside perspective on contracting terms and cost accounting. Our prior data collection activities informed these interviews. Topics addressed included:

- Structure of SEM contracts and mechanisms to provide payment to implementers
- Acceptable terms and conditions for monitoring the quality of delivery

3.1.6 Common program participant process questions

Many of the interviews detailed in this section included a series of process-related questions posed to program participants designed to elicit multiple perspectives on SEM program performance. These questions took slightly different forms depending on the interviewee, but generally asked:

- What were you and your company hoping to achieve by participating in the program?



- In what way is the program, as it is structured and delivered, aiding you in meeting those goals? Which components do you find most valuable?
- What could the program do better or change to meet your goals?
- How much time did you spend in the last twelve months on activities directly related to the program (workshops, data collection, reporting, etc.)? Please do not include the time required to install capital projects.
- How much time did others in your company spend in the last twelve months on program-related activities?
- In your judgment, does the value added by the program warrant these resources?

3.2 Recommended changes for Phase 2

The Evaluation Team recommends including the Energy Team and dropout surveys in the Phase 2 study. These surveys did not succeed because we could identify few Energy Team members or dropouts. In the Phase 2 study, the population will be much larger, thus increasing the probability of completing interviews. We will also begin compiling contact names earlier in the process to allow PAs more time to assist.

The PAs have noted that these customers may not be the most willing to talk with DNV. Still, the value of better understanding their motivations is important, and DNV will collaborate with PA account representatives to recruit some of these customers for interviews.

The Evaluation Team plans to use the Phase 1 interview guides in the Phase 2 study with minor modifications to probe select areas for a more nuanced understanding of a topic. Table 1-2 indicates where this may be beneficial.

4 RESULTS

This section presents the results of our interview efforts. Section 4.1 presents results from each group of stakeholders, and Section 4.2 synthesizes and analyses results from all stakeholders.

Wherever possible, we have organized results in both sections around four themes:

- **Design elements and compliance:** The design and delivery of SEM programs, including how well programs align with the SEM Design Guide
- **Stakeholder satisfaction:** Stakeholder perceptions of the quality of the delivery and customer satisfaction
- **Delivery burden:** The resources required for participation or delivery
- **Drop out and recruiting:** The reasons customers drop out of the program before completion, along with any insights on recruitment and identifying customers well-suited for the program

4.1 Findings

Each of the following subsections presents stakeholder interview results organized around the four themes outlined above. Introductory tables summarize the interviewees' key findings.

4.1.1 Customer interviews

DNV completed IDIs with customer Energy Champions and Executive Sponsors, drawn from projects with each of the PAs, with projects completing a cycle in 2023 (see Table 4-1 and Table 4-2).

Table 4-1. Customer interviewee profile

Program Administrator	Energy Champion	Executive Sponsor	Unique projects completed in PY2023	Unique projects represented in results
SCE	7	4	40	7
MCE	2	-	4	2
SCG	3	2	9	3
SCE/SCG	1		1	1
SDG&E	No 2023 projects completed			
PG&E	No 2023 projects completed			
Total	13	6	53	13

Table 4-2. Key findings from customer interviews

Program element	Key findings
Design elements and compliance	• One vendor's project management and opportunity register software and structured coaching were key drivers of engagement; 9 of 13 responses cited this product as essential for tracking, buy-in, and savings. • Energy Champions rated the Treasure Hunt an 8.2 out of 10 for its value. All Energy Champions noted that they preferred in-person Treasure Hunts.

Program element	Key findings
Stakeholder satisfaction	9 of 11 customers indicated high satisfaction with the program and that the program supported their goals - Engagement began strong but often declined; only two sites maintained high engagement, while 10 saw decreases. Five exited early due to resource constraints. - Two sites noted that the Energy Coach did not have sufficient knowledge of their industry.
Delivery burden	Time investment varied widely across sites. Of 18 Energy Champion and Executive Sponsor respondents, seven estimated between 50 and 200 combined site team hours/year; three reported less than 50 hours; three reported greater than 500 hours. Most said the effort was worthwhile.
Dropout and recruiting	Lack of transition planning or broader energy team support often drove dropout. Of 13 responses, five sites had no backup plan for the Energy Champion role; five ended participation early. In several cases, the Energy Champion was the only team member, leaving no support if they left or had limited capacity.

Customer perspective: Design elements and compliance

Customers consistently highlighted key program features that drove both satisfaction and engagement. Many appreciated a particular vendor's SEM tool as a project management and tracking resource, with nine customers noting its importance in managing projects, tracking energy use, and modeling energy saving. One customer noted that "[The tool] was critical for getting [the site] to quantify savings and justify to upper management." At the same time, another explained that it "helped get additional facility staff to buy in to the program requirements." Similarly, customers pointed to regular coaching check-ins and structured follow-ups as essential to maintaining momentum, with one Energy Champion emphasizing how "the regular meetings... were key to keeping the site staff on task for completing SEM activities." The team performed these check-ins both virtually and in-person, but the study did not gauge whether either was more valuable to the customer.

Table 4-3 shows that customers are generally receiving SEM required activities, and the programs are compliant with meeting the design requirements of the SEM Design Guide. The two activities scored most highly by the customer were Support from the Executive Sponsor (8.9) and then the Energy Treasure Hunt (8.2). Both activities empower Energy Coaches to make change. The first approach involves having internal support, while the second provides the coach with knowledge of opportunities and avenues to pursue. When further discussing Treasure Hunts, every Energy Coach interviewed indicated they prefer in-person Treasure Hunts over virtual ones.

Table 4-3. Customer reports of delivery and value of SEM activities

Services	% report activity conducted	If conducted, how valuable? <0-10>	Weighted value (Value * n)
Support from the Executive Sponsor	92%	8.9 (n=12)	106.8
Energy Treasure Hunt: identifying opportunities to reduce energy waste	100%	8.2 (n=13)	106.6
Regular check-in meetings with the Energy Coach	100%	8.1 (n=13)	105.3
Recommendations from the Energy Team	100%	8.1 (n=12)	97.2
Technical support and information provided by the Energy Coach	92%	7.7 (n=12)	92.4

Services	% report activity conducted	If conducted, how valuable? <0-10>	Weighted value (Value * n)
Peer-to-peer meetings conducted by the implementation vendor	92%	5.7 (n=11)	62.7
Training in workshops conducted using educational modules	77%	7.1 (n = 8)	56.8
Milestone and/or performance incentives	69%	5.8 (n = 9)	52.2
Assistance in developing an Energy Management Information System (EMIS) that integrates energy data into existing control and reporting systems	77%	5.1 (n = 7)	35.7
Kick-off Meeting conducted at the start of the cycle?	100%	-	
Site mapping of energy use	100%	-	
An energy model tracking energy savings	92%	-	
Creation of a Data Collection Plan conducted by a facility Data Owner	77%	-	
An Integrated Demand Side Management (IDSM) Data Collection Plan including demand data, time of use information, and energy storage data <CYCLE 2>	69%	-	
A Greenhouse Gas (GHG) Data Collection Plan, including information on GHG emissions at the facility	39%	-	

Customer satisfaction

Overall customer satisfaction was strong: Nine of 11 responding sites reported that the program supported their goals and were satisfied with its structure, coaching support, and useful tools. However, while early engagement was strong, many sites struggled to maintain the same level of participation over time, with only two sites reporting high engagement throughout all program years and 10 sites reporting declining engagement over time. Five sites ended their SEM program participation early due to staffing or capacity constraints. Most sites entered the program with enthusiasm and a genuine interest in identifying and acting on energy-saving opportunities, driven mainly by motivated Energy Champions.

Energy Champions had predominantly positive impressions of the implementer, with some nuance. Table 4-4 shows the average scores (out of 10) for how Energy Champions felt about professionalism, preparedness, and knowledge of their sites. For both professionalism and preparedness, Energy Champions gave high scores.

Knowledge of the facility received lower scores, with an average of 6.8, suggesting room for improvement in site-specific familiarity. In three cases, customers explicitly articulated frustration with the program's technical depth, and some of these sites, particularly in specialized industries, felt that implementation staff lacked the expertise to identify opportunities beyond basic operational fixes. For example, one site noted that the implementation team "did not know how to evaluate some of the site's major energy-consuming equipment" and wished that someone had provided more technical support. Another site noted that program implementers "identified some BRO projects but lacked expertise to fully understand the site's major energy-consuming equipment." This disappointment contributed to both sites dropping out of the program after Year 2.

Table 4-4. Energy Champion's scoring of implementer

Question	Average	Median
Thinking about your experience with [Field-IMPLEMENTER] staff, how would you rate their professionalism on a scale of 0 to 10, where 0 is extremely unprofessional and 10 is extremely professional?	9.5	10
How would you rate their preparedness on a scale of 0 to 10, where 0 is extremely unprepared and 10 is extremely prepared?	8.5	9
How would you rate how well they knew your facility on a scale of 0 to 10, where 0 is extremely unknowledgeable and 10 is extremely knowledgeable?	6.8	7

Despite these challenges, people widely saw the program as worthwhile. Even among sites that did not complete all program years or experienced a decline in participation, most reported that SEM led to greater awareness and behavioral changes (5), measurable savings (7), and energy management resulting in lasting operational and organization changes (4). These findings suggest that the program model is sound—but that long-term success depends heavily on internal staffing continuity and support for embedding SEM practices into day-to-day operations.

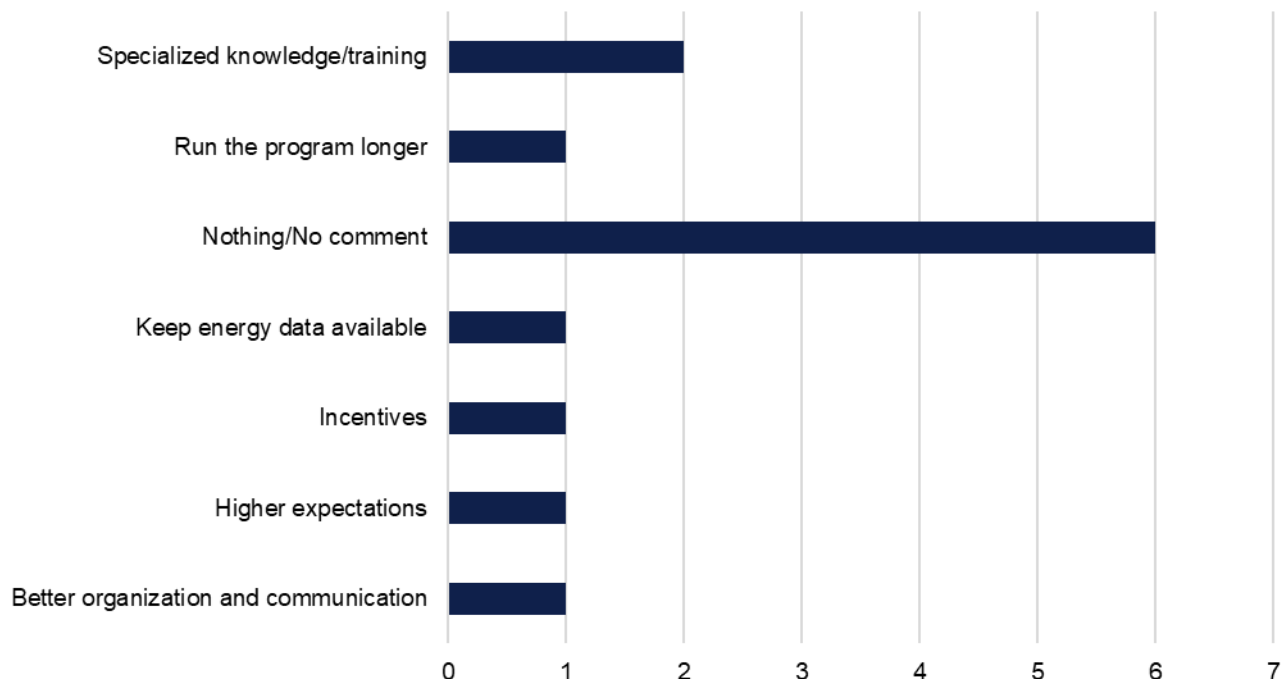
For numerous sites, the SEM program led to a noticeable shift in organizational behavior. Several sites reported that the trainings and hands-on activities helped build staff awareness and reframed how staff considered energy use in daily operations. One site described how the program “helped us look at how we do business a bit differently,” while another shared that it “retrained a bunch of employees to be sensitive to energy use.”

Customers described a range of ways the program delivered value:

- *“Opened our eyes up to sites we didn’t do Treasure Hunt on—provided us with awareness.”*
- *“Focused on different opportunity areas where we can stop wasting and make sense of energy-related subjects.”*
- *“At first the corporate folks wanted to check the box for energy efficiency... however, the SEM program quantified how significant the savings could be, so the executives saw the real value.”*
- *“Ability to make improvements in an operational setting at a rapid pace where they could realize savings... as well as raise awareness amongst employees and provide opportunities for training.”*

As shown in Figure 4-1, the majority of Energy Champions had no suggestions to improve the SEM program to meet their needs. No consensus emerged among specific suggestions, with the varied responses including more specialized knowledge/training, running a longer program, better incentives, better organization and communication, and keeping energy data available.

Figure 4-1. Energy Champion: How could the program do better or change to better meet your goals? (n=13)





Overall, customers noted a number of themes throughout their interviews, as Table 4-5 shows. All but two of the sites noted having strong Energy Champions, but only four denoted having engaged Energy Teams. Common themes included limited resources and decreasing engagement over time. The right column includes the TDA results and, although there are few correlations, the two sites that denoted having high engagement over time both reported strong energy teams and a strong Energy Champion. These sites also had high TDA scores.

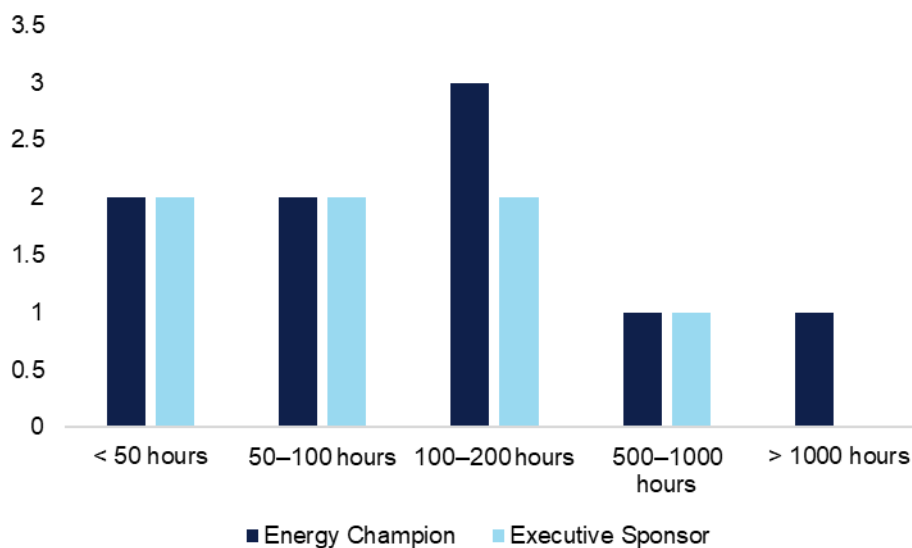
Table 4-5. Themes identified during customer interviews

Customer characteristic					Participation outcome			
Site number	Engaged Energy Champion (EC)	Engaged Energy Team	Disappointed with Program Element	Limited Resources	High Engagement Throughout Program Participation	Engagement Declined Over Time	Participation Ended (Due to Decline in Engagement or Lack of Technical Expertise)	TDA Results
1	✓			✓		✓	✓	0.96
2	✓			✓		✓		0.91
3	✓	✓			✓			0.97
4	✓					✓		0.84
5	✓		✓			✓	✓	0.66
6	✓	✓				✓		0.83
7	✓		✓	✓		✓	✓	0.82
8		✓	✓	✓		✓	✓	0.78
9				✓				0.86
10	✓			✓		✓		0.85
11	✓	✓			✓			0.91
12	✓					✓		0.91
13	✓			✓		✓		0.70

Customer perspective: Delivery burden

Customer time spent on program-related activities varied significantly across sites. Energy Champions and Executive Sponsors provided estimates of how much time their organizations spent on SEM program activities over the past year, including workshops, data collection, and reporting (see Figure 4-2). Most estimates fell between 50 and 200 hours annually, with seven responses in that range. A few customers reported very low levels of time investment (<50 hours), while others described substantial commitments, including two responses between 500 and 1,000 hours, and one response exceeding 1,000 hours. Some respondents were unable to estimate time due to turnover or distributed responsibilities. These responses reflect a wide range of organizational engagement levels and resource availability across sites and do not reflect how many members were on an Energy Team.

Figure 4-2. Estimated total annual hours that organizations spent on SEM program activities, as reported by Energy Champions and Executive Sponsors



All but one respondent reported that the value added by the SEM program justified the time and resources their organization invested. The remaining respondent described it as “borderline.”

Dropout and recruiting

Even among satisfied sites, long-term engagement often declined due to limited internal resources. The organizational structure frequently isolated Energy Champions in their roles, without providing a larger Energy Team to support implementation. Only four sites reported Energy Team engagement other than the Energy Champion. When asked about transition planning if they could no longer serve as Energy Champions, Energy Champion respondents gave varied answers. Five sites reported having no formal transition plan in place, while four indicated they had an informal or general idea of how a transition might occur. Only three respondents noted having a formal or structured plan to ensure program continuity.

“When the Energy Champion was pulled away from the site to open a new plant, there was no one available to continue to champion the SEM program.”

Where sites lacked a plan to backfill SEM responsibilities, the departure or reassignment of the Energy Champion led to sharp drops in engagement and, in five cases, the end of program engagement. One customer’s story succinctly captures

this dynamic: “When the Energy Champion was pulled away from the site to open a new plant, there was no one available to continue to champion the SEM program.”

As mentioned above, another site said that the implementation team “did not know how to evaluate some of the site's major energy-consuming equipment” and wished that someone had provided more technical support. Another site noted that program implementers “identified some BRO projects but lacked expertise to fully understand the site's major energy-consuming equipment.” This disappointment contributed to both sites dropping out of the program after Year 2.

4.1.2 Program Administrator (PA) Interviews

DNV conducted interviews with 17 staff members across all five SEM program PAs, including those without customers who had completed projects in 2023. Most of the interviewees were the PA Program Manager (PAPM), but others included engineers, advisors, and EM&V staff (see Table 4-6).

We asked PA staff a set of questions similar to the questions used for the implementation vendor program manager interviews for consistency. See Table 4-7 for a list of the key findings from these interviews.

Table 4-6. PA interviewee profile

Program Administrator	PAPM interview	Other PA staff
SCE	1	1
MCE	1	2
SCG	1	4
PG&E	1	6
SDG&E	1	4
Total	5	17

Table 4-7. Key findings from PA interviews

Program element	Key findings
Design elements and compliance	- Internal mechanisms exist to prevent program savings from being claimed by more than one program. - In-person Treasure Hunts establish customer buy-in, and subsequent Treasure Hunts in subsequent years could help with continued engagement. Energy modeling training can be hit or miss.
Stakeholder satisfaction	- Most customer activities are designed to be done virtually. - PAs estimated a high level of customer satisfaction: 9 on a 10-point scale.
Delivery burden	- Four of the five PAs observe customer interactions by attending program activities. - Four of five PAPMs do not know if the time commitment is communicated during recruitment. One indicated they only communicate time commitment if asked.

Program element	Key findings
Dropout and recruiting	- Three of the five PAs estimate program dropout rates of 12%–25%. - Customer staff bandwidth or turnover at the site was responsible for the dropout. - Implementer leads recruitment after receiving PA contacts.

Design elements and compliance

The PA staff rated Treasure Hunts and the Opportunity Register as the most valuable components. A Treasure Hunt establishes buy-in with the customer, builds their relationship with the program manager, and helps all parties align on how the program can support business goals. Most PA staff believed that all program activities are important to customer engagement; however, they noted that they consider two activities less important than the rest. First, peer meetings may be relatively less helpful because customers are more interested in how the program has impacted their own energy usage. Second, energy modeling training can be hit-or-miss, with some noting ample training and others noting the training as lacking from implementation vendors.

All PA staff noted that the program has transitioned a significant amount of activities to virtual delivery, though most took the time to highlight that the Treasure Hunt is still conducted in person. The COVID-19 pandemic exacerbated this transition.

Three PAPMs had three different recommendations for program design improvements: clear rulebook guidance and measures for customer process review, re-engagement after Year 2 (the Cycle 2 and 3 Treasure Hunt is optional), and guidelines for how to get staff up to speed following a transition within the customer's organization.

Stakeholder satisfaction

PAPMs expected their customers to express high levels of satisfaction, giving an average estimate of customer satisfaction at 9.0 on a 10-point scale. To maintain a responsive program that meets customer needs, four PAPMs use questionnaires and surveys to assess the program's effectiveness and track the customer journey. One PAPM noted never receiving negative feedback about their implementation vendor.

PA delivery burden

PAs reported that they have internal QC procedures across the various areas of the program, including customer selection, documentation, savings calculations, reporting, contractor invoices, and customer satisfaction. All but one PA reported regularly attending meetings with customers to observe their interactions with program staff. Most of these meetings are conducted virtually. Two PAs reported taking the lead on introducing the customer to the program, one relied on the implementation vendor, and the final two used a mixed approach.

Four of the five PAs reported that their customers participated in multiple energy-saving programs. However, existing mechanisms prevent programs from claiming savings more than once, and programs generally apply savings to the one that incurs the costs. Four of the five PAPMs indicated that cost-effectiveness is most important at the program level. However, all five stated that it is beneficial to understand it at the customer level.

Four of five PAPMs indicated they did not know if the program communicated the potential time commitments to customers being recruited. The fifth noted that "It varies. We disclose it if the customer asks but otherwise do not."

Dropout and recruiting

While some PAs were unaware of any dropouts, three reported a rate from 12% to 25%. While most noted that customers dropped out in the second year, all of them said that customer staff bandwidth or turnover was responsible for the site leaving the program, which is consistent with customer and VPM reports. Suggestions to mitigate dropout include allowing customers the flexibility to pause program engagement and introducing new incentives for measures. (One program

implementer does, indeed, allow their customers to pause program engagement, and the PAs working with that implementer are aware of this practice. A separate PA independently suggested the idea of a pause during our interview.)

When recruiting customers, the PAPMs described their process, which involved the PAs passing contacts and/or warm leads off to the implementers for recruitment and program introduction. All the PAPMs noted the implementers being core to the recruitment, though one noted sometimes doing it themselves as well. Across all PAs, it is clear that the implementer takes the lead on recruitment.

4.1.3 Implementation vendor program manager (VPM) interviews

DNV interviewed five implementation vendor program managers (VPMs) of SEM programs acting on behalf of the PAs (see Table 4-8). These are distinct from the implementation vendor Energy Coach interviews which are discussed in the next section.

Table 4-8. VPM interviewee profile

Program administrator	Unique vendor program manager
SCE	1
MCE	1
SCG	1
PG&E	1
SDG&E	1
Total	5

Table 4-9. Key findings from VPM interviews

Program element	Key findings
Design elements and compliance	• In-person Treasure Hunts establish customer buy-in and build relationships. • Quality control standards vary across PAs. • Lack of compliance with EMIS and EMA is challenging for customers. • Existing mechanisms and systems prevent savings from being attributed to more than one program.
Stakeholder satisfaction	• Most program activities are conducted virtually. • VPMs estimated a high level of customer satisfaction: 8.2 on a 10-point scale.
Delivery burden	• Three of five VPMs report the vendor does not communicate to the customer the customer time commitment expectations.
Drop out and recruiting	• VPMs estimated the dropout rate of 5%–30%. • Low staff engagement, lack of projects, lack of savings, or turnover at the company or sites causes dropout. • Implementer leads recruitment after receiving PA contacts.

Design elements and compliance

The VPMs all identified Treasure Hunts as the most important activity for engaging customers in the SEM program. Additionally, three of the VPMs interviewed, representing four of the five PA programs noted that Treasure Hunts are better offered in person as opposed to virtually. (The other VPM did not mention Treasure Hunts in the context of virtual program delivery.) Like the PAs, the VPMs believe that all program activities are important. However, they suggested that the EMA activity, adaptation of the SEM guide to other sectors, and end-of-year reporting may be relatively less valuable to customers.

All VPMs noted that the in-person nature of Treasure Hunts allows them to familiarize themselves with the staff and the site. This builds relationships and establishes buy-in with the company. However, all the VPMs noted that, other than the Treasure Hunt, most program activities take place virtually. This is beneficial to both customers and program staff, as customers can be spread out over a large geographic area. One VPM noted that their workshop and education offerings are a blend of in-person and virtual.

VPMs noted that one program element that can be improved is increased EUL knowledge. A project in Year 1 can't claim incremental savings by Year 6. VPMs also identified several areas for improvement, including the Energy Management Information System (EMIS) deliverable, whose expected outcome is unclear; some EMA wording that is difficult for customers to understand; guidance for custom projects; and assistance with customer staff turnover.

Vendor estimates of customer satisfaction

VPMs expected their customers to express high levels of satisfaction, giving an average estimate of customer satisfaction at 8.2 out of 10.

To ensure effective customer education and culture change, each VPMs has introduced different features like allowing customers to pause their use of the program, long-term planning with the customer including standard operating procedures (SOPs), customer feedback, relationship/touch point check-ins with customers, and building a robust Energy Team at the site.

Vendor delivery burden

To better understand the customer experience, DNV asked the VPMs how much time they typically advise site staff to commit in their first year. Two of the five VPMs fail to communicate the anticipated hours required for potential and entering customers during recruitment while the other three indicated providing general ranges.

VPMs described the various activities of the PA and their independent third-party reviewers used to maintain the quality of the product. However, one VPM noted that QC standards are not consistent across the PAs. Each PA and reviewer interprets the California SEM Guide differently, which can be a challenge to the implementation vendors. To account for this variation across the programs, the VPMs reported that they developed guides and templates to ensure compliance.

Specifically, while customers can participate in other programs in addition to SEM, existing mechanisms ensure that PAs do not attribute savings to more than one program. Also, organizations often conduct education and workshop activities with a cohort, they calculate the costs associated with these activities by customer count rather than a flat rate for the event.

Dropout and recruiting

While most of the VPMs reported that 5%–15% of customers drop out of the program, one noted that 30% of their enrollees drop out after Year 1. They attributed dropouts to a combination of factors, including:

- Low staff engagement
- The absence of energy-saving projects
- Unrealized savings from program activities

- The sale or change of ownership.

One VPM said that some sites are able to complete all their program activities in Year 1 and then move on from the program.¹⁰ In order to mitigate dropout, the VPMs recommend building a robust team at the site, building long-term relationships with customers, offering program engagement flexibility, and helping the customer understand the whole process.

When recruiting customers. The VPMs note that they may directly recruit customers, or their PAs will give them leads. Three of the five VPMs explicitly noted getting either warm leads or customer lists from the PA, and 1 VPM expressed a desire for more PA involvement. All VPMs pointed out that the implementer is usually the first to introduce the SEM program to customers.

4.1.4 Energy Coach findings

While conducting the NTG research, DNV interviewed implementation vendor Energy Coaches in addition to the VPMs to understand their perspective (see Table 4-10 and Table 4-11). Energy Coaches manage the ongoing customer interactions and oversee the day-to-day engagement with customers. This section presents the results of those interviews.

Table 4-10. Energy Coach interviewee profile

Program Administrator	Energy Coach	Projects represented
SCE	3	4
MCE	1	1
SCG	1	3
PG&E	No projects completed in 2023	
SDG&E	No projects completed in 2023	
Total	5	8

Table 4-11. Key findings from Energy Coach interviews

Program element	Key findings
Design elements and compliance	Though not explored at length, respondents noted that all design guide activities are part of the process. Further, 25% noted the programs would benefit from EMA guidance improvement.
Stakeholder satisfaction	• 87% of respondents indicated the Treasure Hunt is most important for engagement. • Energy Coaches indicated Energy Champions were highly engaged. • Energy Coaches ranked Energy Teams lower on engagement.

¹⁰ The evaluator did not verify that all activities were delivered in a single year and notes that subsequent years of reporting would be required regardless to measure performance.

Program element	Key findings
Delivery burden	Most coaches met with Energy Champions/Teams monthly. One conducted biweekly meetings, and another met every two months.
Drop out and recruiting	• 50% reported drop out or no re-enrollment of some customers. • 25% reported no dropout or re-enrollment of some customers. • 25% had no response.

Design elements and compliance

Energy Coaches reported the integration or presence of all the program design elements required by the SEM Design Guide, including the kick-off, EMA, Treasure Hunt, trainings, check-ins, etc. Seven of the eight respondents noted the Treasure Hunt was the most important activity for engaging customers. One respondent emphasized recruitment as the most important, and two others highlighted check-ins. These Energy Coaches noted that Treasure Hunts are effective because they get the customers involved in the process and build relationships between the program and the site. Energy Coaches were less unified in identifying the least beneficial activity for engagement, but 50% pointed to the EMA, as its structure and rigidity did not provide as much engagement benefit.

Twenty-five percent of survey respondents said they had no suggestions to improve the program, 25% mentioned improving EMA, and other suggestions included fewer reporting requirements, adjusting timelines, and aligning programs with the needs of customers instead of the needs of the utility.

Stakeholder satisfaction

The survey opened by asking respondents, "In your opinion, what is the most important job of the Energy Coach for the success of the SEM program?" Respondents noted the importance of serving as a resource to customers, keeping things moving in a timely manner, and providing encouragement and motivation.

"Help motivate and coach the customers to build a robust energy management program."

"Turn engineering into English."

"...facilitate, encourage, motivate, introduce change management tactics, and promote engagement."

Energy Coaches ranked the Energy Champions' level of engagement highly, with an average of 7.7 out of 10. One respondent ranked Energy Champion engagement at one due to the individual changing roles.

Energy Coaches provided a wider range when ranking the level of engagement of the larger Energy Teams, with ranks from 1 to 10, and the average being 5.1. Energy Coaches gave a few reasons for these rankings, but some indicated that team turnover, diminished oversight from the Energy Champion, and unclear responsibilities contributed to their low rankings.

Delivery burden

As summarized in Table 4-12, Energy Coaches reported meeting with the Energy Champions and Energy Teams at different frequencies. Most common were monthly meetings, while 28% of Energy Coaches reported a bi-weekly cadence, and another indicated meeting once every two months. Seven of eight respondents indicated they conducted these meetings virtually, via a program like Skype or Teams.

Table 4-12. Frequency of Energy Coach and customer meetings

Frequency of Meeting	% of respondents
Monthly	57%
Bi-weekly	29%
Other	14%

Dropout and recruiting

Table 4-13 summarizes Energy Coaches' reports of customers dropping out or choosing not to re-enroll after the first year.

Table 4-13. Energy Coach reported drop out or no re-enrollment

Response	%
Yes	50%
No	25%
No response	25%

Four of the six who responded to this question indicated some level of dropout or choosing not to enroll again. Reasons given include:

- Not enough opportunities
- Layoffs within the company or a lack of company resources to commit to the SEM effort
- Customers were not engaged

4.1.5 NTG integrated research

As discussed in the methods section, we conducted the data collection for this study and the NTGR study jointly. The NTG study applied a Theory Driven Attribution (TDA) research approach, which measured SEM Design Guide **compliance and customer engagement** by triangulating the perspectives of the Energy Champions, Executive Sponsors, and Energy Team Members, as well as the implementation vendor Energy Coaches. We synthesized this feedback and scored it against seven SEM Design Guide Requirements (DGRs). We scored each Category on a 1-3 scale (1 = very weak; 2 = moderate; 3 = very strong).¹¹ This scoring looked particularly at the reported quality of delivery and the quality of the engagement from the vendor for each DGR, which Table 4-14 shows.

Table 4-14. SEM Design Guide requirements

Design Guide requirements
1 – Kick-off meeting. Introducing SEM to the site, defining the roles at the facility, and laying out a program schedule.
2 – Energy Management Assessment (EMA). Assessing the site's current energy use policies and procedures. The implementer conducts these assessments each year of the program and has the option of sharing the results with the facility.
3 – Energy Use Mapping. Detailed mapping of all energy consumption at the facility.
4 – Energy Treasure Hunt. Walking the entire facility searching for ways to reduce energy waste either through capital project upgrades or process and behavioral changes.

¹¹ This information was also presented in the SEM PY 2023 EM&V Report in the TDA findings section, though this Activity Report is diving deeper into the scoring and nuances of the findings.

Design Guide requirements

5 – Action Plan and Support. Identifying and creating action plans to meet SEM requirements including meetings, trainings, and workshops.

6 – Energy Management Information System (EMIS). Developing a system to manage energy use and model energy savings across the entire facility.

7 – Future Planning. Creating a plan for meeting program requirements in future program years as well as how to continue to pursue energy efficiency after program participation ends

Table 4-15 presents the unweighted TDA results by project with a simple average by PA, and Table 4-16 presents average scores by PA for each DGR. The indicators are consistent with the final program NTGR results presented in the 2023 impact report. Two of the PA programs (both delivered by Cascade Energy) have high TDA indicators and high NTGR results. The MCE program, delivered by CLEAResult, received lower TDA indicator values for the two gas-only sites, and a lower gas NTGR.

Table 4-15. PY 2023 TDA results by site

Site ID	Vendor	Delivery compliance score	Engagement score	Combined TDA score
A_01	V1	0.98	0.95	0.97
A_02	V1	0.94	0.98	0.96
A_03	V1	0.99	0.83	0.91
A_04	V1	0.94	0.88	0.91
A_05	V1	0.92	0.74	0.83
A_06	V1	0.88	0.75	0.82
A_07	V1	0.79	0.76	0.78
B_01 ¹	V1	0.90	0.93	0.91
AB Summary		0.92	0.85	0.89
C_01	V1	0.84	0.88	0.86
C_02	V1	0.91	0.79	0.85
C_03	V1	0.86	0.83	0.84
D_01 ¹	V1	0.90	0.93	0.91
CD Summary		0.88	0.86	0.87
E_01 ²	V2	0.65	0.74	0.70
E_02	V2	0.60	0.71	0.66
E Summary		0.63	0.73	0.68

¹ No gross evaluated savings due to missing data.

² Commercial site

Table 4-16. Average delivery and engagement scores by PA on a 1-3 scale

Design Guide requirement	Component	Average SCE Score n=8	Average SCG Score n=4	Average MCE Score n=2
1 – Kick-off meeting. Introducing SEM to the site, defining the roles at the facility, and laying out a program schedule.	Delivery	3.0	3.0	2.5
	Engagement	2.3	2.5	2.0
2 – Energy Management Assessment (EMA). Assessing the site's current energy use policies and procedures. The implementer conducts these assessments each year of the program and has the option of sharing the results with the facility.	Delivery	3.0	3.0	3.0
	Engagement	3.0	3.0	3.0
3 – Energy Use Mapping. Detailed mapping of all energy consumption at the facility.	Delivery	2.8	2.5	1.5
	Engagement	2.8	2.8	3.0
4 – Energy Treasure Hunt. Walking the entire facility searching for ways to reduce energy waste either through capital project upgrades or process and behavioral changes.	Delivery	2.6	2.8	2.1
	Engagement	2.5	2.8	2.5
5 – Action Plan and Support. Identifying and creating action plans to meet SEM requirements including meetings, trainings, and workshops.	Delivery	2.5	2.4	1.6
	Engagement	2.8	2.8	1.5
6 – Energy Management Information System (EMIS). Developing a system to manage energy use and model energy savings across the entire facility.	Delivery	2.8	3.0	1.5
	Engagement	2.6	2.8	2.3
7 – Future Planning. Creating a plan for meeting program requirements in future program years as well as how to continue to pursue energy efficiency after program participation ends.	Delivery	2.6	1.8	1.0
	Engagement	2.1	1.5	1.0
Average Delivery		2.8	2.6	1.9
Average Engagement		2.6	2.6	2.2

4.1.6 Independent evaluator interviews

DNV conducted two interviews with two independent evaluators working on California programs (see Table 4-17). One interviewee explained that their core function is to monitor the public solicitation process and help to apply SEM into broader sectors, working with all PAs in the state. The other interviewee noted that along with currently evaluating two PAs, they “ensure fairness and transparency in final contracting with the utilities and contractors.”

The PA contracts with independent evaluators and intends them to monitor and aid in contracting between the PA and the implementation vendor.

Table 4-17. Key findings from independent evaluator interviews

Program element	Key findings
Design elements and compliance	• Restrained cashflow to program managers may limit pool of companies who can bid on the contract • There are claw back provisions in contracts for lack of performance by program managers
Stakeholder satisfaction	Not applicable
Delivery burden	Not applicable

Program element	Key findings
Drop out and recruiting	Not applicable

Design elements and compliance

The independent evaluators noted that receiving payment from the utilities that they are also required to rate can be awkward, making it difficult at times to freely express observations or opinions.

DNV and evaluators discussed the general structure of how contracting payment transfers are set up and executed. The respondents noted that the PAs do not involve independent evaluators in the actual contract conversations, though they encourage the PAs to discuss the compensation setup with the implementation vendors early in the process. The most common payment process is a pay-for-performance structure. In certain circumstances, payment terms are becoming more flexible and beneficial to the implementation vendors. SCE recently made such changes after one of its RFPs received no responses because of onerous contracting requirements. Within these payment structures, it is most common to find performance milestones. Programs sometimes tie milestones to customer satisfaction, Treasure Hunts, or other events. With that said, PAs recognize that not all implementation vendors can manage the gaps in cashflow created by milestone payments and can use other mechanisms, such as pre-payments. Both evaluators also noted that there are claw-back provisions in the contracts that allow the PA to retract a payment to the vendor due to a lack of performance. However, neither was confident that those claw-back provisions had triggered this far.

The independent evaluators noted that the point in a project cycle when an implementation vendor can receive payment varies by PA. One evaluator emphasized their preference for paying implementation vendors for activities that move a program towards goals. They cautioned that without enough cashflow, it may starve the market of healthy program providers.

4.2 Synthesis and analysis

According to our interviews, much is working across SEM programs (see Table 4-18). Programs appeared to be largely in compliance and PAs and implementers reported high levels of customer satisfaction, ranking it at 9 and 8.2, respectively, on a 10-point scale. Customers themselves largely agreed, with most (9 of 11) reporting that the program supported their goals and that they were satisfied with its structure, coaching support, and useful tools. However, the drop-out rate is significant ranging between 10% and 30% for a variety of reasons, but low engagement often cited. A consensus emerged across stakeholder groups that finding opportunities for in-person customer engagement is critical to program success, and potentially key to strengthening the program as it expands. Companies always perform Treasure Hunts in person, and they drive substantial engagement, but there are no required activities to get back on site in the following years. Stakeholders suggested that some program elements could be improved, and these correlated with a lack of customer engagement, either due to internal turnover, confusion about the purpose of a program element, or a lack of certainty that the program could meet their specific needs. Additionally, respondents noted the EMA and EMIS as an area of confusion and could use clarification for the programs.

Table 4-18. Findings across stakeholders by theme

	Customers	PA PMs	Vendor PMs	Energy Coach	Independent Evaluator
Design elements and compliance	Energy Champions rated the Treasure Hunt an 8.2 out of 10 for its value.	PAPMs design customer activities to be conducted remotely.	Quality control standards vary across PAs.	7 of 8 respondents said the Treasure Hunt activity is most important for engagement.	Restrained cashflow to program managers may limit pool of companies who can bid on the contract.
	One vendor's project management and opportunity register software and structured coaching were key drivers of engagement; 9 of 13 responses cited this product as essential for tracking, buy-in, and savings.	Four of the five PAPMs observe customer interactions by attending program activities.	Lack of compliance with EMIS and EMA is challenging for customers.	Though not explored at length, respondents note all Design Guide activities as being part of the process.	Contracts have claw back provisions for lack of performance by program managers.
		Internal mechanisms to prevent savings double counting.	Internal mechanisms to prevent savings double counting.	Further, 25% noted the programs would improve with EMA guidance improvement.	
Stakeholder satisfaction	DNV linked TDA Program Delivery scores to the vendor which scores program deliver compliance with the SEM Guides. Cascade delivers programs for SCE and SCG with PA TDA delivery scores of 0.92 and 0.88 scores, respectively. MCE, delivered by CLEAResult, received a notably lower delivery score of 0.63.				Not applicable
	9 of 11 customers indicated high satisfaction with the program and that it supported their goals. Difficult to maintain engagement. Two sites maintained high engagement, while 10 saw	Average estimated customer satisfaction: 9 out of 10. In-person Treasure Hunts establish site buy-in to program, and a subsequent Treasure Hunt could help with	Average estimated customer satisfaction at 8.2 out of 10. In-person Treasure Hunts establish site buy-in to program, establish relationship.	Coaches indicated Energy Champions were highly engaged. Coaches ranked energy teams lower for engagement.	Not applicable.

	Customers	PA PMs	Vendor PMs	Energy Coach	Independent Evaluator
Delivery Burden	decreases. Five exited early due to resource constraints. Two sites said the Energy Coach lacked sufficient knowledge of their industry.	continued engagement. Energy modeling training can be hit or miss.	PMs generally conduct program activities virtually.		
	DNV linked TDA Program Engagement scores to the vendor which scores customer engagement. Cascade delivers programs for SCE and SCG with PA TDA delivery scores of 0.85 and 0.86 scores, respectively. MCE, delivered by CLEAResult, received a notably lower engagement score of 0.73.				
	Time investment varied widely across sites. Of 18 EC & ES respondents: 7 estimated 50–200 hours/year; 3 reported <50 hours; 3 reported >500 hours. Most said the effort was worthwhile.	Four of five PAPMs do not know if anyone communicates time commitment during recruitment. Four of the five PAs observe customer interactions by attending program activities.	Two of five VPMs don't communicate time commitment expectations. The remainder communicate general ranges.	Most coaches met with champions/teams monthly. One did biweekly and one did every two months.	Not applicable.
Dropout & Recruitment	Lack of transition planning or team support often drove dropout. Of 13 responses, five sites had no backup plan for the Energy Champion role; five ended participation early.	Three of the five PAs estimate program dropout rates of 12%-25%. Customer staff bandwidth or turnover at site was responsible for dropout.	Estimated dropout rate of 5%-30%. Low staff engagement, lack of projects, lack of savings, or turnover at company at sites causes dropout.	50% reported dropout or no re-enrollment. 25% reported no dropout or re-enrollment. 25% had no response.	Not applicable.



	Customers	PA PMs	Vendor PMs	Energy Coach	Independent Evaluator
		Implementer leads recruitment after receiving PA contacts.	Implementer leads recruitment after receiving PA contacts.		

4.2.1 Program design and compliance

The TDA Delivery score is an important indicator of program compliance. The TDA research indicated an average delivery compliance by PA of SCE (0.92), SCG (.88), and MCE (0.63), indicating strong compliance by some and opportunities for growth with others. Table 4-3, shows that of the various SEM activities discussed in the Energy Champion interviews, five activities had 100% of respondents indicate it being conducted.

PAPMs and VPMs reported ambiguity and inconsistency as the greatest challenges to program compliance. Different practices across PAs, burdensome administrative requirements, or ambiguity about how to adapt SEM for customers beyond the industrial sector all introduced complexity, confusion, and an increased risk of non-compliance. Likewise, where customers were confused about the expectation or purpose of a program element, they were less likely to engage and, potentially, not fully comply – a common complaint about the EMA and EMIS, for example. Examples of this include the VPMs noting various expectations, depending on PA, and the EMA and EMIS requirements being difficult to understand.

While both the VPMs and PAPMs view all program activities as important, they consider the EMA activity, adaptation of the SEM guide, and end-of-year reporting to be the least valuable. PAPMs also regard all activities as important, though they find peer meetings and energy modeling training to be potentially less beneficial. Customers expressed confusion about the energy management information system requirement in the SEM guide. This requirement had the lowest level of engagement and is likely the least compliant aspect of program execution.

4.2.2 Stakeholder satisfaction

The TDA Engagement score is an important indicator of customer engagement and ultimately satisfaction. The TDA research indicated an average engagement factor by PA of SCE (0.85), SCG (.86), and MCE (0.73).

Interviewees cited customer engagement, in its many forms, repeatedly as key to customer participation and satisfaction. When engagement ebbed, either because of turnover among site staff or as the program moved into its second year, customers became more likely to drop out. We cannot ignore the value of the in-person Treasure Hunt here. Although typically the only in-person activity, verbal responses from VPMs, Energy Champions, and Energy Coaches confirmed the value it had on engagement.

Both the implementers and the customers (including the Energy Champions and Energy Coaches) stress the importance of in-person Treasure Hunts in the SEM journey as well as a strong Executive Sponsor. They are opportunities to build relationships with site staff, which could help with long-term engagement despite staff turnover. Also, Treasure Hunts help establish buy-in for the program by quantifying the energy efficiency opportunities at the site. In addition, customers said that engaging site staff in training workshops is a key element of delivery, not just of engagement. Customers also reported significant learning from SEM trainings, which helped them identify deeper energy savings opportunities. On the other hand, SEM customers reported that staff turnover can hinder program momentum and decrease engagement. Specifically, new Energy Champions were often less engaged or familiar with program requirements, leading to a decline in energy-saving efforts. Small Energy Teams limited site engagement and ability to participate in required activities. While most implementers inform customers about the average staff commitment required in the first year, two out of five SEM programs did not provide this information. Customers without this information could underestimate the time needed to maximize program benefits long-term. Generally, sites struggle to allocate sufficient resources to SEM due to competing work priorities, hindering their ability to sustain engagement and improvement efforts. To minimize dropouts, PAs and implementers suggest providing customers with flexibility, such as the option to pause the program, establishing a robust team at the site, fostering long-term relationships with customers, and ensuring they fully understand the entire SEM process.



Some Energy Champions expressed disappointment over their inability to identify deep retrofit opportunities, attributing it to having limited access to the site during peak operation periods. However, one implementation vendor's Opportunity Register software tool was instrumental in managing projects, tracking energy use, and quantifying savings, contributing to higher engagement among facility staff. Customers voiced this without being asked. Leveraging this tool to effectively communicate improvement opportunities could be a solution to continue program momentum at a site.

4.2.3 Resource burden

Each PA differently interprets, for example, the California SEM Guide, so quality control practices vary across PAs. This can be challenging for implementers, as each reviewer has a different approach to compliance. Implementers also reported that the administrative burden of the program can be challenging. They suggest streamlining the documentation and reporting, if possible.

During conversations with the PAs and implementers, the most common suggestion to improve the scalability of the SEM program was to streamline the documentation or reduce the administrative burden requirements. One implementer noted that in other jurisdictions, an energy model is sufficient proof of the project, but in California, there is a heavy burden to document everything. This is a challenge, especially for self-guided projects¹² in which a site takes on more of the burden in managing the project. When asked about challenges scaling SEM, one VPM noted that dealing with ambiguity within the program is a greater challenge. Specifically, adapting criteria to sectors other than the industrial sector has been difficult. For example, with a school district, the customer is the district as a whole, but developing an opportunity register for an entire school district is a challenge, one for which implementers must get special approval from the CPUC. This example highlights that, while SEM is anticipated to be a useful program design for most non-residential sectors, there may be some in which a few sectors cannot easily meet the SEM engagement needs. Furthermore, the SEM Expansion Study noted that there was no evidence suggesting the necessity of creating a distinct SEM guide for each sector but recommended flexibility in terms of program delivery for non-industrial customers.¹³

Cost allocation. The VPMs and the PMs at all organizations but one concurred that evaluating cost-effectiveness at the program level is more meaningful than a site-level evaluation since cost-effectiveness serves as the performance metric for the entire program. One program mainly uses cohorts, so evaluating cost-effectiveness on the cohort level is the most informative for them. However, some VPMs noted that customer-level cost effectiveness can be a helpful metric, enabling them to balance sites with varying levels of savings to achieve overall cost-effectiveness at the program level.

All PAs and implementers have reported engaging customers in joint cohort activities due to this delivery method being the primary method as described in the design guide, particularly through educational workshops and modules.¹⁴ Four of the programs indicated that the costs associated with these joint deliverables are calculated based on customer organization attendance and then allocated to individual projects. Conversely, one program uses a flat, deliverable-based cost calculation.

SEM customers can participate in additional utility programs, and most PAs actively encourage this enrollment. However, both implementers and PAs have established accounting measures to prevent the double-counting of savings attributed to these programs.

¹² Though less common, the CPUC Decision in 16-08-019 allows for flexible implementation pathways. Theoretically, if the site or customer follows the design guide, uses existing condition baseline, and appropriately models and measures energy savings according to program rules, they would be eligible for the impact factors. This is what the interviewee was referring to.

¹³ DNV. 2020. *SEM Expansion Study: Final Report*. California Public Utilities Commission. https://pda.energydataweb.com/api/view/3978/CPUC_SEM_Expansion_Study_Final%20Report.pdf.

¹⁴ Sergio Dias Consulting. *California SEM M&V Guide*. https://pda.energydataweb.com/api/view/2648/CA_SEM_MV_Guide_v3.02.pdf

4.2.4 Dropout

Program dropouts proved to be a prevalent reality amongst interviewees, though the details as to the reasons may be more nuanced. PA PMs estimated 12%-25% of their customers either drop out mid cycle or do not re-enroll in a subsequent Cycle 2 or 3, and the VPMs estimated 5%–30%. These responses are consistent with each other. Also, 50% of the Energy Coaches indicated dealing with customers who dropped out or ended early.

Implementers identified two primary moments when a site drops out of the program: after the first year (before starting Y2) or at the beginning of the program—a false start. One implementer estimated that approximately 30% of customers drop out after the first year. Implementers and PAs indicated that site dropouts were typically due to low staff engagement, lack of energy efficiency project opportunities, or unrealized savings.

The predominant reason given is engagement and staff consistency at the customer site. The Energy Champion is the cornerstone of engagement for a site and if they switch roles or have engagement issues, almost always the site saw issues. The ability for a customer to have support staff for the Energy Champion is very important, to help weather the storm if there is turnover. As noted in the customer interviews, in five cases, the departure or reassignment of an Energy Champion led to the end of program engagement. As a respondent noted, “When the Energy Champion was pulled away from the site to open a new plant, there was no one available to continue to champion the SEM program.”

Better recruiting. Interviewees cited opportunities for customer engagement at the start of recruitment. Three out of five implementers mentioned receiving both customer leads and warm handoffs from the PAs. Those who received less support expressed a desire for greater involvement from PAs in lead generation and warm handoffs. Program evaluators also advocate for PA involvement in recruitment and customer engagement to foster sustainable long-term relationships with the program. Recruiting the types of customers who will succeed in SEM is key to successful program delivery. Specifically, sites under a parent company with a strong focus on energy efficiency have been more successful in maintaining SEM engagement over time as opposed to customers who may have challenges in devoting the necessary level of engagement and management support (see school district example above).

5 CONCLUSIONS AND RECOMMENDATIONS

Table 5-1. Conclusions and recommendations

Key findings and conclusions	Preliminary recommendations and considerations	2025 – 2026 Activity Report research or focus
1. Programs generally deliver the SEM Design Guide-specified components to participants, although participants' perceived value scores of the individual components range from 5.1 to 8.9 out of 10. This shows variability in participant satisfaction. A few participants report that they did not receive the EMIS activity, the EMA activity, or workshop trainings, among others. Not receiving all required Guide activities shows a lack of compliance and indicates that some participants are not receiving all services the program is designed to deliver, and indicating the service is not supporting the objectives of the program.	CPUC staff should consider a more comprehensive quality control apparatus to ensure consistent and comprehensive delivery of SEM activities to participants. This enhanced quality control will help target areas for improvement and bring accountability so that participants are getting a more consistent experience. Future activity reports and NTG surveys should track and benchmark progress through annual polling of participant satisfaction and program experience. The vendors should ensure implementation consistency across the Design Guide activities. Ensuring program Implementation Plans (IPs) closely support the program design described in the most recent SEM guides¹⁵. Future Activity Reports should be leveraged to review IPs	Gain deeper understanding into activities via customer and vendor staff interviews to identify structures to help the programs maintain consistency across implementers and customers.
2. The vendor and PA project managers rate the Treasure Hunt as the most valued activity. Respondents further indicated the value of the in-person Treasure Hunt, discussing the engagement benefits of face-to-face interaction. The SEM guide requires a Treasure Hunt in	We recommend that programs continue offering Treasure Hunts in the manner that adheres to the SEM Design Guide which supports multiple in-person Treasure Hunts. For these reasons we recommend that Treasure Hunts be conducted every cycle, if possible, and in person. Respondents clearly articulated the value of these Treasure Hunts, and annual in-person events can enhance	Include more directed questions about the vendor support platforms and the importance of check-ins and the Executive Sponsor role.

¹⁵ Sergio Dias Consulting. "California Industrial SEM M&V Guide, Version 4.02." May 11, 2025.

Key findings and conclusions	Preliminary recommendations and considerations	2025 – 2026 Activity Report research or focus
first year of the first cycle and as a recommended option in the first year of subsequent cycles. None of the interviewed participants' sites had received more than one Treasure Hunt. In addition to the Treasure Hunt, participants rated the Executive Sponsor as a high-value participant role. Participants also highly rated the regular check-ins with their Energy Coach and Energy Champion. Interestingly, all nine of Vendor A's participants volunteered that they rated the vendor's Opportunity Register highly. There is a drop-off in site participation and engagement after Year 1. Vendor staff mentioned that in-person meetings improved customer engagement.	engagement by allowing participants and their facility staff to interact with the program implementation vendors and Coaches. We recommend that identifying and engaging an Executive Sponsor during the screening process be mandatory to allow the implementation vendor to estimate how involved this Executive Sponsor will be. An active Executive Sponsor, supported by effective tools, is critical to project success and will ensure active participation in regular check-ins, another area identified as important to participants. Further, we recommend that programs include at least one in-person engagement activity per year, due to the positive response to in-person engagement. This can be the Treasure Hunt or a different activity. The Treasure Hunt every cycle, annual in-person engagement, and mechanism for engaging the executive sponsor should be reflected in the program implementation plans. The SEM program should track progress through review of program implementation plans, focusing on Treasure Hunt frequency and format, executive sponsor engagement during screening, and annual reporting.	
3. Customer tools: Participants indicated confusion with the EMA and EMIS elements of the program, providing lower scores when asked about awareness and satisfaction. Conversely, participants also	PAs should consider reviewing the guidance documents around the EMA and EMIS to identify areas of ambiguity and provide more direction for implementation vendors and participants. We recommend training participants on the EMIS tool usage and EMA activity, via in-person	Add questions to customer, vendor program manager, and Energy Coach interviews for deeper understanding of their experience of EMA/EMIS process.

Key findings and conclusions	Preliminary recommendations and considerations	2025 – 2026 Activity Report research or focus
appreciated the Opportunity Register tools that one vendor shared. Phase 2 of the research will consider whether EMA and EMIS require further review and clarification for the programs. A review of EMA and EMIS activities could facilitate a better understanding of the lack of engagement and delivery.	workshops or virtual check-ins, and regularly reviewing how participants use the tools. Implementation Vendors should provide required tools and programs (EMA and EMIS, among others) to help participants progress, and programs should learn from other successes, such as the participants who highlighted a specific vendor's excellent Opportunity Register or tackled a particularly challenging implementation issue that is relevant to other similar business entities. This can be measured by a detailed plan's inclusion in the program implementation plan document and through subsequent participant satisfaction polling. The SEM program should track progress through review of Program Implementation Plans for planned EMA and EMIS guidance updates and through longitudinal participant satisfaction polling related to EMA and EMIS tools.	
4. Participant awareness of the Action Plan – specifically its existence and purpose - was low (delivery scores for each PA ranged from 1.6 to 2.5 out of 5), and participants rated its purpose as unclear. This suggests that these plans are not being created in partnership with participants as often as they should be, the value is not being properly articulated, or implementation vendors are not fully aware of the expectation for delivery.	CPUC staff should consider Design Guide revisions for Action Plans development, including more explicit expectations for the implementation vendors. These plans should be explicitly linked to high-value activities, such as the Treasure Hunt and Opportunity Register, by making them an integral part of these activities to improve their relevance and inclusion. Vendors should also review the Action Plan with participants on an annual or biannual basis to maintain visibility and alignment. The SEM program should track progress by documenting SEM Design Guide updates to Action Plan guidance and verifying vendor application of these	Participant and Energy Coach interviews should promote Action Plan development before and after implementation interaction.

Key findings and conclusions	Preliminary recommendations and considerations	2025 – 2026 Activity Report research or focus
	updates through periodic review of Action Plan use and participant review cadence.	
5. The SEM Design Guide identifies other Energy Team roles beyond the Energy Champion and the Executive Sponsor. However, most project files did not identify additional Energy Team members. Further, the participants noted the importance of the Executive Sponsor in both engagement and project success. Developing and maintaining customer relationships are key, and having a robust team working together with the Energy Coach benefits this.	Implementation Vendors should enforce clear requirements for the site Energy Team. The Energy Team should identify specific individuals for each role at the beginning of the project, and the Energy Coach should verify that the roles have appropriate coverage. The SEM guide identifies necessary roles and responsibilities for an Energy Team and these are vital to site success. Future SEM activity reports should monitor progress by tracking how often project documentation list the full Energy Team composition beyond the Energy Champion and Executive Sponsor, and by assessing the continued engagement of each site-specific Executive Sponsor as a contributor to participant engagement across sites.	Learn more about hours estimates in comparison to the number of energy team members. Gain qualitative insight into energy team burden and effectiveness.
6. Long-term success relies on internal staffing continuity and support. Participant dropout due to a lack of on-site resources or organization staffing changes is a persistent issue. 7. Although customers are largely satisfied with the program, participant dropout due to lack of on-site resources is a persistent issue. Also, the PAs could not provide a list of dropout sites.	Participants can mitigate issues with turnover by building a robust Energy Team and roster, including back-up Energy Champions at the participant's site, to engage with the program and mitigate turnover disruptions. Programs should consider incorporating this team planning into the participant screening process and ensure Energy Sponsor support for significant internal staffing. We recommend that the implementation vendor work with the participant to perform annual updates to the energy team contacts list. This will aid in understanding time commitment	Confirm findings with broader sample, including PG&E.

Key findings and conclusions	Preliminary recommendations and considerations	2025 – 2026 Activity Report research or focus
	requirements in relation to Energy Team size. In addition, allowing for a program “pause” period when active internal staffing is temporarily not available could be beneficial to long-term engagement with participants. This will allow customers to remain participants while allowing for the flexibility to solve staffing issues. Program Implementers should document participant dropouts and conduct an exit interview to learn why. The PAPM might best conduct this, as they oversee the programs and the program quality. Future activity reports should track progress by monitoring the frequency of back-up or deputy Energy Champion designation—particularly for sites with historically high staff turnover—the regular updating of Energy Team member lists, use of statewide forums to gather feedback on program pause options when site staffing is unavailable, and the completeness of participant dropout tracking, including the frequency of conducted exit interviews.	
8. Findings of this research indicate that the programs need to achieve the right balance between scaling SEM and identifying customers who can commit to the program. Program growth is vital to achieve energy savings, but growth requires customers SEM is designed for As discussed in prior findings, the customers often did not have the resources necessary to appropriately commit to SEM.	We recommend that Implementation Vendors conduct more targeted screening of customers. This will help the program focus on customers who can commit to the program long-term. This screening may include: - Clear discussion of customer resource requirements. - Greater understanding of customer goals and if SEM is the appropriate pathway for achieving them.	Ask implementation vendors to rate their overall, financial performance, and oversight satisfaction. Perform a survey among dropout sites to better understand staffing structure at the site. Engage PAs early to better identify these customers. Further investigate the SEM sales pitch to customers and dropouts to confirm customers fully know what they are agreeing to.

Key findings and conclusions	Preliminary recommendations and considerations	2025 – 2026 Activity Report research or focus
Two of five vendors do not disclose the expected manpower commitment with enrollees.	This requires an acknowledgement that the SEM program may not be suitable for some participants due to the level of engagement needed. Better identification of expected commitment and understanding of typical industry staffing trends would benefit this screening. The SEM program should track progress by monitoring the frequency with which screening documentation includes discussion of manpower and time commitments, assessment of customer goals and SEM suitability, and by evaluating post-enrollment persistence to assess the effectiveness of targeted screening. .	Ask implementation vendors for best practices and lessons learned for screening customers. Interview customers about their screening experience.
9. Some participants expressed frustration when implementation vendors assigned to their projects lacked experience with the participant's industry or technical operations. Participants noted that insufficient industry alignment limited vendors' ability to provide relevant technical guidance, leaving participants feeling unsupported in navigating SEM activities—for example, when vendors lacked familiarity with the operational processes typical of the participant's sector.	Implementation vendors must ensure they have qualified staff with relevant industry experience to effectively serve the kinds of customers they are targeting for the program. The following steps will help Implementation Vendors better serve program participants: - Define required expertise and verify qualifications: Create a competency matrix outline the technical and industry-specific skills needed for each customer segment. Further, implement a structured vetting process, including resume reviews and reference check to match staff to participant needs. - Conduct biannual performance reviews and gather customer feedback to ensure staff alignment with program goals. Future SEM activities should track progress by collecting and benchmarking	

Key findings and conclusions	Preliminary recommendations and considerations	2025 – 2026 Activity Report research or focus
	participant feedback on implementer industry and technical expertise over time and by assessing whether concerns are systemic across the SEM program or concentrated among specific implementation vendors.	



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