**Southern California Edison**



Cascade Energy, Inc.

Implementation Plan

SPARKe Industrial & Agricultural SEM program

**DRAFT 2**

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# Program Budget and Savings Information

## Program and/or Sub-Program Name

SPARKe Industrial & Agricultural SEM

## Program and/or Sub-Program ID Number

SCE\_3P\_SEM\_004

## Program and/or Sub-Program Budget Table

Table 1 SPARKe Implementation Budget Allocation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Cost Category  | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | Total |
| Administration  | $ 55,296 | $ 142,878 | $ 500,098 | $ 475,091 | $ 500,962 | $ 279,197 | $1,953,522  |
| Marketing, Outreach | $ 126,391 | $ 1,667,205 | $ 250,049 | $ 237,546 | $ 250,481 | $ 139,603 | $2,671,275  |
| Incentive/Rebate |  | $ 90,787 | $ 483,086 | $ 785,261 | $ 1,436,319 | $ 1,442,585 | $4,238,038  |
| Direct Implementation | $ 184,552 | $ 1,214,465 | $ 4,250,836 | $ 4,038,275 | $ 4,258,173 | $ 2,373,174 | $16,319,475  |
| Total | $ 366,239 | $ 3,115,335 | $ 5,484,069 | $ 5,536,173 | $ 6,445,935 | $ 4,234,551 | $25,182,302  |

## Program and/or Sub-Program Gross Impacts Table

Total System Benefits (TSB) is the primary metric. Savings will be estimated using the methodology outlined in the [California SEM M&V Guide.](https://pda.energydataweb.com/api/view/2647/CA_3_CYCLE_SEM_Design_Guide_V1.01.pdf)

Table 2 Total System Benefits Targets

|  |  |  |
| --- | --- | --- |
| Delivery Period Month of each Delivery Period Year | Expected Total System Benefit (TSB) | Savings Price (in $/TSB) |
| Dec, 2025 | 1,245,030 | $ 0.859 |
| Jun, 2026 | 2,659,058 | $ 0.742 |
| Dec, 2026 | 4,328,898 | $ 0.742 |
| Jun, 2027 | 3,772,272 | $ 0.525 |
| Sep, 2027 | 1,357,670 | $ 0.525 |
| Dec, 2027 | 5,126,943 | $ 0.525 |
| Jun, 2028 | 3,288,964 | $ 0.497 |
| Sep, 2028 | 2,817,151 | $ 0.497 |
| Dec, 2028 | 5,657,506 | $ 0.497 |
| Jun, 2029 | 3,011,204 | $ 0.490 |
| Dec, 2029 | 5,633,038 | $ 0.490 |
| Total TSB & Average Savings | 38,897,734 | $0.581 |

Table 3 Energy Savings Goals

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Savings | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | Total |
| Gross Demand Reduction (kW) | - | 371 | 1,975 | 2,727 | 2,958 | 1,996 | 10,027 |
| Gross Energy Savings (kWh) | - | 2,766,514 | 14,869,437 | 20,898,306 | 22,194,246 | 15,243,990 | 75,972,493 |
| Gross Gas Savings (Therms) | - | 5,636 | 30,117 | 61,684 | 159,258 | 195,152 | 451,847 |

## Program and/or Sub-Program Cost-Effectiveness (TRC)

Table 4 SPARKe Industrial & Agricultural SEM cost-effectiveness goals 2024 - 2029

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SPARKe Industrial & Agricultural SEM Goals | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | Average TRC |
| Expected TRC Ratio | - | 0.40 | 1.23 | 1.77 | 1.82 | 2.17 | 1.48 |

## Program and/or Sub-Program Cost-Effectiveness (PAC)

Table 5 SPARKe Industrial & Agricultural program cost-effectiveness goals, 2024-2029

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SPARKe Industrial & Agricultural SEM Goals | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | Average PAC |
| Program Administrator Cost (PAC) | - | 0.40 | 1.26 | 1.81 | 1.73 | 1.89 | 1.42 |

## Type of Program and/or Sub-Program Implementer

Table 6: Implementer Type

| **Program Implementer** |  |
| --- | --- |
| PA-delivered |[ ]
| Third Party-Delivered | [x]  |
| Partnership |[ ]

## Market Sector

Table 7: SPARKe Market Sectors

| **SCE Business Plan Sector** | **Yes** |
| --- | --- |
| Residential |[ ]
| Commercial | [ ]  |
| Industrial |[x]
| Agricultural |[x]
| Public |[ ]
| Cross-Cutting |[ ]

## Program and/or Sub-Program Type

Table 8: Program Type

| **Program Type** |  |
| --- | --- |
| Resource  | [x]  |
| Non-Resource  |[ ]

## Market Channels and Intervention Strategies:

Table 9: SPARKe Market Channels and Intervention Strategies

| **Market Channels** |  |
| --- | --- |
| Upstream |[ ]
| Midstream |[ ]
| Downstream |[x]
| **Intervention Strategies**  |  |
| Direct Install |[ ]
| Incentive |[x]
| Finance |[x]
| Audit |[x]
| Technical Assistance |[x]

**Campaign Goals and Timeline:**

SPARKe Industrial & Agricultural SEM is designed to occur over a 6-year timeline. Objectives are outlined in Section 2.1 (below), and Goals are outlined in Section 1, Tables 2 – 5 (above), respectively.

Table 10 Program Launch and Delivery Timeline

|  |  |
| --- | --- |
| Projected Completion Date | Activity |
| 7/9/2024 | **Finalized Implementation Plan**: Cascade and SCE have agreed on the final Implementation Plan, and it has been posted to CEDARS. |
| 7/9/2024 | **Ramp Up:** Participant recruiting and continued staffing |
| 12/10/2024 | **Marketing and Advertising:** Launch of marketing and advertising campaign. |
| 12/10/2024  | **Program Delivery Launch**: SPARKe program delivery commences. |
| 1/1/2027 | **Ramp Down:** Active participants continue to the end of their current cycle. No new cycles will launch. |
| 12/31/2029 | **Close Out:** All cohort cycles will be complete. |

# Implementation Plan Narrative

## Program Description

Non-residential customers – especially larger customers – are under numerous pressures to reduce their energy use. These pressures include a need to reduce operational costs and to meet energy efficiency and decarbonization goals (either internally or externally imposed). SPARKe addresses persistent barriers to the uptake of energy efficiency for many large customers. It provides technical, coaching and incentive support to spur follow through on energy-saving opportunities.

The SPARKe Industrial & Agricultural SEM Program will deliver the program framework detailed in the most recently published [California SEM Design Guide](https://pda.energydataweb.com/api/view/2647/CA_3_CYCLE_SEM_Design_Guide_V1.01.pdf)and[California SEM M&V Guide](https://pda.energydataweb.com/api/view/2648/CA_SEM_MV_Guide_v3.02.pdf) to Industrial and Agricultural Customers with annual energy usage greater than 2M kWh in Southern California Edison’s (SCE) service territory.

Strategic Energy Management (SEM) as prescribed by the California SEM Design Guide takes customers through a progression of educational modules and site-specific activities over a series of three, two-year cycles. The progression of educational modules builds so that by the end of the sixth year of participation, the customer has a much-improved capacity to manage energy at their site as compared to the first year.

SPARKe includes innovative delivery approaches beyond the California SEM Design Guide and California SEM M&V Guide. These include new customer targeting approaches, tailored delivery to cost-effectively serve a larger number of customers, resources to help customers make the business case for and implement more projects, and supplemental technical, coaching and financial support for decarbonization and electrification projects.

The objectives of the SPARKe Industrial & Agricultural SEM program include:

* **Maximize energy savings and TSB** by (1) using data to target customer with highest savings potential, (2) including capital projects within SEM for more net savings, faster claims, and higher customer satisfaction, and (3) encouraging electrification projects with significant gas savings and high TSB
* **Leverage Energy Sensei ®** to streamline reporting and standardize savings claims for both modeled and bottom-up calculations
* **Increase customer engagement and satisfaction** by tailoring the delivery approach to include the smaller side of the large customer segment, provide a shared energy manager to help resource constrained customers complete projects, allow customer to pursue all project types through a single program and contact
* **Promote electrification and decarbonization** through electrification incentives and decarbonization subject-matter expert consultation
* **Provide an equitable program** through on-bill and third-party financing options, Disadvantaged Community (DAC) recruiting, and Diverse Business Enterprise (DBE) subcontracting

## Program Delivery and Customer Services

SPARKe Industrial & Agricultural SEM is designed to occur over a 6-year timeline. The program will be delivered via the following phases:

### Recruiting/Outreach

* **Customer Identification** – Cascade will use historic energy data to identify customers with significant energy savings potential both in general and peak periods. The customers will be divided into two segments: Large (>10 GWh annual energy use) and Mid-Large (2GWh – 10 GWh annual energy use)
* **Outreach/Enrollment** – Cascade will directly contact Large Customers in conjunction with SCE Account Managers. Customer interactions will be tracked to support a positive customer experience both during and post-recruitment.

Outreach to Mid-Large Customers will utilize broader communications appropriate for the higher volume of customers in this segment, including email, social media, advertising, and collateral. Cascade will leverage the latest developments in artificial intelligence (large language models) to improve both outreach and delivery efficiency.

### SEM Delivery

SEM delivery for both Large and Mid-Large Customers will follow the cycles and provide all education modules and site-specific activities prescribed in the California SEM Design Guide. Cascade will tailor time spent on delivery of these tasks to match the customer savings potential identified at the Treasure Hunt.

* **Large Customer Track**: Delivery closely resembles the Industrial SEM program that Cascade is currently delivering for SCE. Each cohort includes 10 to 12 customers.
* **Mid-Large Customer Track**: SEM tasks will be customized to cost effectively reach more of the smaller customers. Cohorts are larger, with approximately 20 customers.

Each customer will be assigned an SEM coach who provides single-point-of-contact support, motivation, and customer service throughout the program.

Energy Sensei®, an energy performance platform, will be provided to all customers to track projects and Greenhouse Gas. Energy Sensei® is described in greater detail in Section 3.

The following three figures illustrate the program sequences for Cycles 1, 2, and 3, respectively.



Figure 1: Program Sequence for SEM Cycle 1



Figure 2: Program Sequence for SEM Cycle 2



Figure 3: Program Sequence for SEM Cycle 3

### Measurement and Verification

Cascade will report annual savings in alignment with the latest[California SEM M&V Guide](https://pda.energydataweb.com/api/view/2648/CA_SEM_MV_Guide_v3.02.pdf)**.** Energy Sensei ® will be leveraged to standardize and expedite the M&V process for both modeled and bottom-up customers.

### Market Channel

SPARKe is a customer-facing downstream program that relies primarily on face-to-face, relationship-based outreach to industrial and agricultural customers and other stakeholders. Cascade’s experience has shown that trusted relationships are what drive customer action. Market channels to build awareness about SPARKe include:

* **Company Account Managers**: Cascade has requested support from SCE’s Customer Engagement Division (CED) team in identifying and introducing customers that will be good candidates for SPARKe. These customers should meet program eligibility requirements, be highly motivated to perform energy efficiency actions, and have management supportive of providing appropriate resources for the program.
* **Existing Relationships:** Cascade has long-standing connections to Industrial- and Agricultural-sector customers and relevant industry groups. We will leverage these connections to identify prospects for recruitment, screen them for SEM eligibility and fit, and meet with prospects to provide a program overview and recruit them for participation.
* **Marketing/Advertising**: Cascade will pursue marketing approaches including hyper-targeted geofencing (programmatic advertising based on precise geographic location) and targeted LinkedIn advertising to deliver personalized content to specific customer segments based on a range of criteria.

### Targeted Market/Customer Group

All Industrial and Agricultural Customers that use 2M kWh or more annually (at the Site level) across SCE’s service territory are eligible for SPARKe participation. In addition to being larger energy users with complex mechanical systems, these customers should additionally be highly motivated to save energy and have well aligned leadership. Industrial and Agricultural Customers such as food and beverage, metals, plastic, packaging, cement, aerospace, minerals, pharmaceuticals, ports, manufacturing, greenhouses, other indoor ag, dairies, and wineries are expected to have higher energy intensity and offer the most savings potential.

Cascade will target and prioritize high-potential Industrial and Agricultural Customers located in Disadvantaged Communities (DACs) for participation. Industrial and Agricultural Customer segments such as metal and food/beverage processing, dairies, and other growers are expected to be located in DACs.

## Program Design and Best Practices

SEM program design addresses persistent barriers to the uptake of energy efficiency for many large customers. It provides the technical, coaching, and incentive support they need to follow through on energy-saving opportunities.

The main barrier to SEM success is that customers often fail to execute viable energy efficiency opportunities due to either staffing or funding-related issues. Cascade’s goal in addressing these market barriers is to provide customers with the wraparound support needed to get capital projects evaluated, approved, funded, and completed. Acknowledging that capital projects take time to complete, we will ensure customers have a mix of behavioral, retro-commissioning, and operational (BRO) and capital measures on their opportunity registers at the start of SEM.

The following strategies and tactics to mitigate these barriers are listed below:

### Help Completing Projects

One or more shared energy project managers (shared EPMs) will be assigned to the SEM delivery team. This role increases the personnel resources dedicated to energy efficiency project implementation at customer sites, leading to more completed projects and higher customer satisfaction (as this project management burden is lessened for them).

The shared EPM will be assigned to shepherd large individual projects identified through SEM through to completion. They will support several customers simultaneously and focus on specific geographies within SCE’s large service territory. The shared EPM will not be tasked with identifying new projects—that is led by the customers’ energy team in coordination with their SEM coach and technical lead. This role will be responsible for managing approved projects to completion, including coordinating with vendors, tracking and reporting on progress, and collecting required data and documentation.

Customers’ eligibility criteria for shared EPM support will be determined, which could include energy savings potential, location, and/or project timelines. Strong controls accompany this offering—enrollment agreements, implementation plans, and funding based on milestone achievements—to assure progress.

### Help Funding Projects

Since SEM primarily focuses on low-/no-cost savings opportunities, access to capital and financing is not a typical market barrier. However, the SPARKe design includes more project types under SEM: capital and electrification, in addition to the BRO projects more commonly addressed through SEM. The additional project types will boost the savings the program can deliver while enhancing customer satisfaction (since customers can easily complete all identified project types through a single program and contact).

With capital projects included in SEM, some customers may experience funding-related barriers. This barrier is addressed through three pathways:

* **Incentives**: Higher than standard SEM Customer incentives for capital and electrification (fuel substitution) projects
* **Financing**: On-bill and third-party financing to customers. Financing can be provided to customers or directly to vendors and contractors. Projects can be financed at the beginning of the process, minimizing financial uncertainty for the customer.
* **Finance Coordinator Support**: Recent federal legislation such as the Inflation Reduction Act has introduced new grant funding and tax credit opportunities for certain energy-saving project types, especially electrification projects. This new funding landscape presents significant opportunities for customers participating in SEM. However, it is also evolving, challenging to navigate, and impacted by state and local policies.

To address this barrier, a finance coordinator will support the SPARKe program. This individual will be the expert on funding availability and eligibility (from grants and elsewhere) and will align this knowledge with project opportunities identified within SPARKe. The finance coordinator will:

* Review opportunity registers in Energy Sensei ® and highlight projects eligible for funding.
* Hold quarterly webinars for customers to review relevant grants and how to apply.
* Research tax credits associated with investing in these opportunities so that SEM coaches can weave tax benefits into project value propositions.

Financing-related communications with customers will focus on customer cash flows and how leveraging financing will make their utility payments “bill neutral.” We will also coach decision-makers to avoid using the typical payback metric and instead focus on net present value or the project’s internal rate of return. These metrics help to ensure lifetime benefits and costs are appropriately accounted for. Cascade will also coach customers on how the additional cash flows and tax benefits they can generate through energy efficiency can be used for a variety of needs: hiring, expansion, paying down debt, and improving profitability.

### Energy Sensei®

Energy Sensei—Cascade’s proprietary energy performance platform—is essential to program delivery. We expect to provide Energy Sensei (or Sensei) to all customers, company program managers, third-party evaluators, and other approved stakeholders. All Sensei users will need to create an account and accept the user licensing agreement, available to users upon signing up for the service.

While Sensei provides significant benefits and motivation to customers participating in SEM by helping them visualize and report on their energy and Greenhouse Gas reduction progress, its value is also at the program level. Sensei offers the program the following benefits:

* Provides a detailed opportunity register to capture relevant information and tie actions to results, helping build the case for program influence.
* Details the inputs, calculations, and claim years to provide optimal transparency and defensibility of program savings claims.
* Centralizes forecasting, standardizes savings calculations, and aggregates multi-year portfolios to improve efficiency among all parties.
* Streamlines the energy modeling process by aggregating data, testing candidate variables for statistical significance, and comparing and documenting performance of models.
* Reduces errors and provides a traceable pathway to verify both top-down and bottom-up savings.
* Helps visualize time-of-use energy savings opportunities to present to Customers.

## Innovation

### Technology Innovations

Table 11: Technology Innovations

|  |  |
| --- | --- |
| **Description** | **Expected Impact on Savings and/or Participation** |
| **Energy Sensei’s Claims** feature helps standardize savings calculations and aggregate multi-year portfolios to improve efficiency among all parties. It reduces errors and provides a traceable pathway to verify both top-down and bottom-up savings. Claims aligns with standard SEM M&V protocols.  | Claims has the capacity to reduce SEM delivery team reporting time significantly. Cascade will seek opportunities for efficiency between Sensei’s Claims feature and SCE’s system of record. |
| **Recruitment Insights** is a tool that provides additional insight into Customer energy use patterns, facilitating Customer targeting and customized recommendations. Datasets will be connected in an interactive dashboard, improving targeting from the start and ensuring the first Customer contact includes insight specific to their savings opportunities. | Recruitment Insights will enable better customer targeting and engagement. Through energy use analysis, it will also help identify potential project opportunities and be a persuasive recruitment tool for Customers who believe there are no remaining cost-effective energy savings opportunities at their Sites.  |

### Marketing Strategy Innovations

Table 12: Marketing Innovations

|  |  |
| --- | --- |
| **Description** | **Expected Impact on Savings and/or Participation** |
| **Target Customers** with the best potential to save energy during on-peak times (e.g., refrigerated facilities that can shut off a portion of their freezers from 4pm – 9pm). | High-potential Customers will achieve more savings during peak periods, resulting in higher TSB savings. |
| **Target Customers** with the highest propensity to deliver savings quickly (for example, Customers with public sustainability commitments). | These Customers can typically act quickly and deliver more savings earlier in the cohort cycle. |

### Delivery Approach Innovations

Table 13: Delivery Approach Innovations

|  |  |
| --- | --- |
| **Description** | **Expected Impact on Savings and/or Participation** |
| **Include capital projects** in SEM and offer higher incentives and support to encourage their implementation. | Applying a net-to-gross (NTG) of 1 and better existing conditions to capital projects implemented within SEM will deliver more net savings for SCE. A faster approval timeline and higher incentives will also increase customer motivation and satisfaction. |
| Offer a cost-effective SEM path to **serve Mid-Large sized Customers**. | Tailoring the California SEM Design Guide and California SEM M&V Guide requirements to match the available savings at slightly smaller Customer Sites will allow SPARKe to cost-effectively deliver more savings while increasing participation within an underserved Customer segment. |
| **Provide a shared EPM** to help Customers complete more projects identified through SEM. | Providing a resource to help Customers implement projects will result in more completed projects and more equitable SEM delivery. |
| **Provide a finance coordinator** to help make the business case for capital and electrification projects. | This supplemental support should lead to faster project approvals and more projects funded and implemented. |
| **Offer third-party financing** to Customers. | Multiple financing options will help Customers move capital projects forward, resulting in more projects implemented. |
| **Encourage electrification (fuel substitution) projects** through attractive incentives and a role dedicated to identifying and implementing them. | Including supplemental support for electrification projects will help both SCE and Customers meet their carbon reduction targets and lead to higher TSB savings for SPARKe.  |
| **Aggregate SEM Cycle 2 cohorts** to optimize delivery costs and ensure a cost-effective Program. | It will be more cost-effective to deliver a full Cycle 2 cohort versus a partially full cohort. Since Cascade expects to launch new SEM cohorts regularly, long delays between Cycles 1 and 2 are not anticipated.  |

## Metrics

The [California SEM Design Guide](https://pda.energydataweb.com/api/view/2647/CA_3_CYCLE_SEM_Design_Guide_V1.01.pdf) and [SEM M&V Guide](https://pda.energydataweb.com/api/view/2648/CA_SEM_MV_Guide_v3.02.pdf) provides guidance on metrics to demonstrate participant progress. In keeping with those guidelines, Cascade will track and evaluate program progress using the metrics in Table 14.

Table 14: Metrics

|  |
| --- |
| Overall Portfolio Level |
| Capturing energy Savings | First year annual and lifecycle ex-ante(pre-evaluation) gas, electric, demand savings (gross and net), and associated TSB |
| Disadvantaged Communities | First year annual and lifecycle ex-ante (pre-evaluation) gas, electric, and demand savings (gross and net) in disadvantaged communities |
| Hard-to-Reach Markets | First year annual and lifecycle ex-ante (pre-evaluation) gas, electric, and demand savings (gross and net) in hard-to-reach markets |
| Cost per unit Saved | Levelized cost of energy efficiency per kWh, therm and kW (use both TRC and PAC) |
| Industrial Sector |
| Capturing energy Savings | First year annualized and lifecycle ex-ante (pre-evaluation) gas, electric, and demand savings (gross and net) in industrial sector |
| Greenhouse Gas Emissions | Greenhouse gasses (MT CO2eq) based on net kWh savings, reported on an annual basis |
| Penetration of energy efficiency programs and diversity of participants | Percent of participation relative to eligible population for small, medium and large customers |
| New participation | Percent of customers participating that have not received an incentive for the past three years, annually, by small, medium and large customer categories  |
| Baseline/consumption reduction | Reduction in consumption (proposed by SCE and SDG&E) |
| Agricultural Sector |
| Greenhouse Gas Emissions | Greenhouse gasses (MT CO2eq) Net kWh savings, reported on an annual basis |
| Penetration of energy efficiency programs and diversity of participants | Percent of participation relative to eligible population for small, medium and large customers. For the purpose of the foregoing: (1) small customers are those customers that have peak usage of less than 50 kW per month, (2) medium customers are those customers that have peak usage greater than 50 kW per month and less than 250 kW per month, and (3) large customers are those customers that have peak usage of greater than 250 kW per month. |

## For Programs Claiming To‐Code Savings

SPARKe is not planning to target to-code savings through the Custom Capital Savings Path. Savings estimates will not separately quantify or differentiate to-code and above-code portions of savings.

The Table 15 outlines the Cascade’s plan for claiming program savings and the basis.

Table 15: Paths for Claiming Program Savings

|  |  |  |  |
| --- | --- | --- | --- |
| Savings Path | Savings Quantification | Basis | To Code Considerations |
| SEM (BRO or Capital) | Energy model or bottom-up calculations  | Per California SEM M&V Guide | CPUC D.16-08-019 and the California SEM Design Guide and the California SEM M&V Guide allow SEM to claim existing conditions baseline for all savings including capital projects. |
| Custom Capital | Engineering analysis | Per Statewide Custom Processes | Cascade is not planning to pursue to-code opportunities. |
| Deemed  | Prescriptive savings | Per Deemed Measure Catalog | Code-related requirements are already accounted for in workpapers. |

## Pilots

To support Integrated Demand-Side Management (IDSM) efforts, SPARKe may seek out opportunities to partner with pilot programs offered by SCE, the California Energy Commission, and other entities and cross-enroll Customers in appropriate demonstration projects or programs. Cascade is not planning pilot projects within the SPARKe Program.

## Workforce Education & Training (WE&T) [[1]](#footnote-2)

Not applicable to the SPARKe program.

## Workforce Standards[[2]](#footnote-3)

Workforce Standards are likely applicable for the subset of energy-saving projects that involve installation, modification, and maintenance of HVAC or Lighting systems as discrete standalone projects. Customers must contract with qualified service providers for this work in order to be eligible to receive a rebate or incentive for the project. In cases where Customers elect to receive rebates or incentives for these project types, Cascade will:

* Provide a notice to the Customer about the certification requirement being a condition of receiving the rebate or incentive.
* Make a minimum of two good-faith attempts to obtain compliance documentation and Customer signature.

In cases where Customers or Contractors fail to show compliance for Lighting or HVAC measures where Workforce Standards apply, they will forfeit any incentive or rebate associated with the measure.

Cascade does not believe Workforce Standards are applicable to SPARKe in cases where a customer implements BRO Measures across multiple systems (including lighting and/or HVAC).

Cascade’s SEM delivery will follow the [California SEM Design Guide](https://pda.energydataweb.com/api/view/2647/CA_3_CYCLE_SEM_Design_Guide_V1.01.pdf). The California SEM Design Guide includes site-specific activities and learning modules designed to ensure savings achieved through SEM are sustained. Cascade’s SEM approach teaches Customers how to ensure savings persistence for energy projects. It also includes one-on-one coaching and software designed to monitor performance so that the Program can intervene if energy savings backslide. SPARKe does not include specific skills certification or formal occupational training.

## Disadvantaged Worker Plan:[[3]](#footnote-4)

The Disadvantaged Worker plan does not apply to the SPARKe program. SPARKe is not a Direct Install program, and Cascade’s staff will not be directly involved in the installation, modification, repair, or maintenance of energy efficiency equipment. These services will be provided by the customer’s staff or outside vendors hired by the customer, with guidance and recommendations offered by SPARKe staff.

## Additional Information

CPUC Decision 23-02-002 approves the expansion of SEM beyond the Industrial sector, allowing this Program design to serve Agricultural Customers (p. 41).

# Supporting Documents

## Program Manual and Program Rules

### Program Overview

The SPARKe Industrial & Agricultural SEM Program will deliver the program framework detailed in the most recently published [California SEM Design Guide](https://pda.energydataweb.com/api/view/2647/CA_3_CYCLE_SEM_Design_Guide_V1.01.pdf)and[California SEM M&V Guide](https://pda.energydataweb.com/api/view/2648/CA_SEM_MV_Guide_v3.02.pdf) to Industrial and Agricultural Customers with annual energy usage greater than 2M kWh in Southern California Edison’s (SCE) service territory.

Strategic Energy Management (SEM), as prescribed by the California SEM Design Guide, takes customers through a progression of educational modules and site-specific activities over a series of up to three, two-year cycles. The progression of educational modules builds so that by the end of the sixth year of participation, the customer has a much-improved capacity to manage energy at their site as compared to the first year.

SPARKe Industrial & Agricultural SEM is implemented by Cascade Energy Inc. (“Cascade”) under contract to Southern California Edison (SCE). Table 16 shows key dates for the program.

Table 16 Key Program Dates

|  |  |
| --- | --- |
| Milestone | Date |
| Advice Letter Approval | 5/10/2024 |
| Begin program implementation activities | 11/1/2024 |
| End program implementation activities | 12/31/2029 |

SPARKe Industrial and Agricultural SEM involves three key parties:

* **Participant (Applicant):** An eligible industrial or agricultural ratepayer who is participating in the SPARKe SEM program.
* **Implementer (Cascade Energy):** SPARKe Industrial and Agricultural SEM is implemented by Cascade Energy under contract to SCE.
* **Program Administrator (SCE)** At the direction of the California Public Utilities Commission (CPUC), SCE serves its customers with a portfolio of energy efficiency and demand response programs, including third-party programs such as SPARKe Industrial and Agricultural SEM.

### Program Eligibility

**Participants**

SPARKe Industrial and Agricultural SEM is available to industrial and agricultural customers who meet the following eligibility requirements:

* Receive electricity services from within SCE’s service territory.
* Designated as an industrial or agricultural sector customer by SCE.
* Have a minimum of 2M kWh annual usage at the site level.
* Must be paying the public purpose program surcharge.

Additional eligibility for SEM will be evaluated based on the following factors:

* Interest in SEM and commitment to at least one cycle (two-year commitment)
* Ability to staff the energy team required for SEM
* Number of subsystems and annual energy use, kWh and therms

As noted in CPUC Decision 23-02-002, “the key customer characteristics relevant to SEM participation seem to be dedicated resources for implementing long-term measures at the customer site and higher potential for onsite behavioral, retro-commissioning, and operational savings.”[[4]](#footnote-5) These characteristics will apply to both small and large customers and justify the NTG assumption of 1.0.

**Measures**

In addition to the BRO (Behavioral, Retro-commissioning, Operational) projects more commonly addressed through SEM, SPARKe also includes capital, electrification and deemed projects.

### BRO (Behavioral, Retro-commissioning, Operational)

SEM BRO measures as described in the [California SEM M&V Guide](https://pda.energydataweb.com/api/view/2648/CA_SEM_MV_Guide_v3.02.pdf)will be the primary measures utilized in the SPARKe Industrial and Agricultural SEM program. Additionally, participants will benefit from educational modules, peer-to-peer learning and accountability groups with similar industrial facilities, and employee engagement resources to drive additional energy savings across the facility.

### Deemed

Deemed measures are prescriptive measures supported by CPUC-approved statewide measure packages that define energy savings values by building type, climate zone, etc. Deemed measures must be listed in the current electronic Technical Resource Manual (eTRM).

### Custom

Custom measures completed within the SEM program will adhere to the California SEM M&V Guide requirements. We anticipate the vast majority of capital projects will be captured in the SEM program; however, customers have the option to select to opt into following the custom capital process.

Non-deemed (“custom calculated”) measures (developed for a specific project) shall be submitted to SCE and require SCE Engineering review and written approval before installation. For such measures, Cascade shall follow the Statewide Custom Project Guidelines and all statewide documentation and workbooks outlined. Cascade shall work with SCE to ensure that the Statewide Custom Guidelines are being followed and adhered to. Any non-workpaper customized measures shall be submitted in the Statewide Custom Projects Review Guidance documents format as posted on the public CPUC website.

**Contractors**

SCE authorizes Cascade to utilize the Subcontractors in Table 17 in performing and providing the Services. This is not a direct install program, and participants are able to select any qualified installer of their choice.

Table 17 SCE Approved Subcontractors for SPARKe

|  |  |
| --- | --- |
| Subcontractor Business Name | Work Description |
| BASE | Technical Engineering Services |
| Energy Solutions | Technical Engineering Services |

### Participating Contractors, Manufacturers, Retailers, Distributors, and Partners

Upstream and midstream incentives are not applicable for SPARKe.

### Additional Services

In addition to facilitating incentives, rebates, and financing for industrial and agricultural sector customers, SPARKe program design includes several innovative features, including:

* **Utilize Energy Sensei’s claims feature** to help standardize savings calculations and aggregate multi-year portfolios.
* Offer a cost-effective SEM path to **serve Mid-Large sized Customers** (customers with usage between 2M kWh and 10M kWh).
* **Provide a shared EPM** to help Customers complete more projects identified through SEM.
* **Provide a finance coordinator** to help make the business case for capital and electrification projects.
* **Encourage electrification (fuel substitution) projects** through attractive incentives and a role dedicated to identifying and implementing them.
* **Aggregate SEM Cycle 2 cohorts** to optimize delivery costs and ensure a cost-effectiveness.

### Audits

Outside of the M&V processes outlined in Section 3.7 – Evaluation, Measurement, and Verification, no additional audits are required.

### Quality Assurance Provisions

Cascade is committed to providing quality services that meet the performance, cost, and schedule requirements of our clients and participants. Our processes are established on practices, tools, and software that generate consistently reliable results. Our workflow management tools integrate fundamental management and communication techniques, technical processes, and tools into an approach focused on the quality of deliverables. Cascade’s team concentrates on continuous improvement of business processes, participant satisfaction, and continuous quality measurement of delivered services, while identifying opportunities for process improvements.

The success of Cascade’s programs and projects are made possible by adherence to proven quality standards and established QA methods that enable us to offer our clients:

* Energy efficiency and sustainability programs that use mature, well-defined, and repeatable processes.
* Use of proven measurement and verification (M&V) techniques.
* Use of beneficial, cost-effective, IT, data communications, and marketing tools and methodologies.

**Quality Assurance Plan Purpose**

Cascade has developed the following quality assurance (QA) plan to demonstrate how our team will monitor, assess, and ensure adherence to processes, procedures, and standards to determine the quality and on-time delivery of all deliverables and services for the program. This plan will serve as the blueprint for maintaining consistent quality through all components of the project and in each task.

The QA plan documents the procedures by which the team assesses performance for all aspects of the program against contractual requirements. The plan describes the approach for activities, including program tracking and reporting, process reviews, program audits, project engineering analyses and reports, procedures, and techniques for implementing and sustaining overall quality for the program.

**Quality Assurance Plan Scope**

Cascade has created a QA framework to form the basis of the complete quality management approach and strategy. The processes defined in the plan will be leveraged to implement quality in all aspects of performance.

The objective of the QA plan is to describe the roles and responsibilities and the policies and procedures that ensure consistency and quality throughout the projects. The objective enables the QA team to achieve critical measurable results for the program such as:

* **Predictable Results:** The QA plan is to ensure that deliverables and services are produced in an efficient, effective, reliable, and predictable manner that will consistently produce results compliant with the contractual requirements of the program.
* **Error Prevention:** The QA plan prevents the introduction of errors into deliverables and services. Any errors that are found undergo analysis and subsequent action to preclude reintroduction of the error. This aspect of the QA plan includes the structured approach to pursuing continuous improvement in all aspects of the program.
* **M&V Documentation:** The QA plan ensures a structured approach to the defining, recording, and storing of documentation related to requirements, approvals, reviews, tests, decisions, actions, events, and problems and improvement measures to support verification, validation, and traceability.
* **Participant Satisfaction:** The QA plan ensures the participant receives the best possible deliverables and services. Participant satisfaction surveys will be conducted so that participants may comment on the program and Cascade. Surveys will be conducted either by mail, email or by telephone. The results of the survey will be entered into the database management tool.
* **Continuous Improvement:** Feedback from all the above is used in an ongoing effort to improve the program’s processes. Results from the survey will be quantified and shared with the program sponsor.

**Quality Assurance Methodology**

For each program or project, the QA team will be consulted on the approach to baseline operations and how measure implementation will be confirmed. Primarily, for measures needing custom calculations, energy savings will be based on the baseline performance data collected by field measurements by the Cascade team.

The QA team will be apprised of the analysis approach. When energy savings analysis is completed for each project, the analysis will be independently reviewed by the QA team to confirm agreement with the savings estimates and approach to the savings estimates for the measures. The review methodology will be established to examine processes against quality factors using Cascade’s workflow management tools, such that the QA checks and results must be recorded for the project to move to the next stage. Examples of quality factors include:

* **Correctness:** The extent to which a deliverable satisfies the requirements and the stated objectives.
* **Timeliness:** The deliverable is provided when required.
* **Reliability:** The extent to which a deliverable is provided on a consistent basis.
* **Productivity:** The number of resources to correctly produce the deliverable, including the relationship between the amounts of time needed to accomplish work and the effort expended.

Cascade will maintain a clear record of all project findings, including on-site notes, building and equipment data, and operating characteristics. Secondary review of randomly selected projects will periodically check the QA process to ensure that:

* The QA process has been followed, verified by checking that all data and required checks are recorded.
* The project results are reasonable, verified by recalculating results using a secondary methodology such as engineering calculations.
* Project documentation is complete.

**Other Program Metrics**

Program metrics are listed in Sections 1.4 – Program Gross Impact, 2.5 – Metrics, and 3.5 – Quantitative Program Targets.

## Program Theory[[5]](#footnote-6) and Program Logic Model[[6]](#footnote-7)



## Process Flow Chart



## Incentive Tables, Workpapers, Software Tools

Incentives for SEM BRO, capital, electrification, and deemed measures are listed in Table 18. Please note that incentives for both capital and electrification projects will not exceed the costs of implementation.

Table 18: Measure Types and Associated Incentives

|  |  |  |
| --- | --- | --- |
| **#** | **Measure** | **Incentive Level** |
| **1** | SEM BRO (Behavioral, Retro-commissioning, Operational) | $0.02 / kWh |
| **2** | SEM Capital | Up to $0.21 / kWh |
| **3** | SEM Electrification | Up to $7.00 / therm |
| **4** | Custom Capital | Up to $0.21 / kWh |
| **5** | Deemed Measures\* | Variable |

\*Deemed Measures expected to be less than 1% of both Program savings and incentive budget.

Table 19: Deemed Measures

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Measure Package Name** | **Short Description** | **URL link or location name** |
| **1** | Ventilation Fan, Agricultural: SWPR001-02 | Efficient Ag Vent Fan | [eTRM](https://www.caetrm.com/dashboard/) |
| **2** | VFD on Irrigation Pump: SWWP002-03 | VFD on Ag Pump | [eTRM](https://www.caetrm.com/dashboard/) |
| **3** | VFD for Glycol Pump Motor: SWPR002-02 | Glycol Pump VFD | [eTRM](https://www.caetrm.com/dashboard/) |
| **4** | Air-Cooled Chiller: SWHC020-03 | Air cooled constant speed screw chiller | [eTRM](https://www.caetrm.com/dashboard/) |
| **5** | Bare Suction Line Insulation: SWCR010-03 | Walk-in cooler or freezer suction line insulation | [eTRM](https://www.caetrm.com/dashboard/) |
| **6** | Cogged V-Belt for HVAC Fan: SWHC024-03 | Cogged V-belt for HVAC fans | [eTRM](https://www.caetrm.com/dashboard/) |
| **7** | VFD for Dust Collection Fan: SWPR005-02 | Dust collection fan VSD | [eTRM](https://www.caetrm.com/dashboard/) |
| **8** | Floating Head Pressure Controls, Multiplex: SWCR007-04 | Floating Head Pressure Controls | [eTRM](https://www.caetrm.com/dashboard/) |
| **9** | Floating Suction Controls, Multiplex: SWCR008-03 | Floating suction pressure control | [eTRM](https://www.caetrm.com/dashboard/) |
| **10** | Unitary Air-Cooled Air Conditioner: SWHC013-03 | Unitary air-cooled, commercial packaged AC or HP | [eTRM](https://www.caetrm.com/dashboard/) |
| **11** | Water-Cooled Chiller: SWHC005-03 | Water-Cooled Chiller | [eTRM](https://www.caetrm.com/dashboard/) |
| **12** | Heat Pump Water Heater, Commercial, Fuel Substitution: SWWH027-03 | Heat Pump Water Heater - Gas to Electric | [eTRM](https://www.caetrm.com/dashboard/) |
| **13** | VFD Retrofit for Air Compressor: SWCA001-03 | Air Compressor VFD | [eTRM](https://www.caetrm.com/dashboard/) |
| **14** | Ultra-Low Temperature Freezer: SWCR017-04 | Refrig-freezer, high efficiency ultra-low temperature | [eTRM](https://www.caetrm.com/dashboard/) |
| **15** | VSD for Ventilation Fan, Agricultural: SWPR006-02 | VSD for Ag Vent Fan | [eTRM](https://www.caetrm.com/dashboard/) |
| **16** | Enhanced VFD on Irrigation Pump: SWWP005-03 | Enhanced VFD on Ag Irrigation Pumps | [eTRM](https://www.caetrm.com/dashboard/) |
| **17** | Economizer Controls: SWSV010-02 | Economizer Controls | [eTRM](https://www.caetrm.com/dashboard/) |

## Quantitative Program Targets

Our expected Total System Benefit targets are defined in the following table:

Table 20: TSB Targets

|  |  |  |
| --- | --- | --- |
| Delivery Period Month of each Delivery Period Year | Expected Total System Benefit (TSB) | Savings Price (in $/TSB) |
| Dec, 2025 | 1,245,030 | $ 0.859 |
| Jun, 2026 | 2,659,058 | $ 0.742 |
| Dec, 2026 | 4,328,898 | $ 0.742 |
| Jun, 2027 | 3,772,272 | $ 0.525 |
| Sep, 2027 | 1,357,670 | $ 0.525 |
| Dec, 2027 | 5,126,943 | $ 0.525 |
| Jun, 2028 | 3,288,964 | $ 0.497 |
| Sep, 2028 | 2,817,151 | $ 0.497 |
| Dec, 2028 | 5,657,506 | $ 0.497 |
| Jun, 2029 | 3,011,204 | $ 0.490 |
| Dec, 2029 | 5,633,038 | $ 0.490 |

See Table 3 for Energy Savings Goals.

## Diagram of Program



## Evaluation, Measurement, and Verification (EM&V):

The M&V Plan for the SPARKe program is designed to the requirements of the statewide [*California Industrial SEM M&V Guide*](https://pda.energydataweb.com/api/view/2648/CA_SEM_MV_Guide_v3.02.pdf)**,** which describes procedures for quantifying the savings for each participating customer, as well as estimating program savings achieved. The SEM M&V Guide details the process for creating the energy model, testing its validity, making updates to it, calculating savings, and handling the reporting of pre-planned and incented capital projects such that energy savings are not double counted by the program. Further, the SEM program will leverage: (a) the California Statewide Custom Project Guidance Document[[7]](#footnote-8) for performing bottom-up savings calculations for custom capital project implementation and (b) approved statewide measure packages for determining savings for deemed measure implementation resulting from SEM program engagement.

The M&V Guide was developed using methodologies, protocols and best practices from national SEM leaders including:

* US DOE’s Superior Energy Performance
* Energy Trust of Oregon
* Bonneville Power Administration

Industrial and agricultural SEM savings will be calculated using at least one year of pre-engagement, whole-facility data to develop the energy saving adjustment (i.e. regression) model that is based on IPMVP Option C[[8]](#footnote-9), using essentially the same methodology that has been used successfully in the mature SEM resource acquisition programs[[9]](#footnote-10). In certain cases, energy savings for individual projects may also be calculated outside of an energy saving adjustment model and reported as an aggregated bottom-up savings estimate, as described in the SEM M&V Guide.

To calculate electric peak demand savings, the program uses a Demand Savings Calculator approved by the CPUC Energy Division. The initial Calculator converts annual energy savings (in kWh) to demand savings (kW) based on standard load shapes. At some future time, it may be replaced by site-level regression models that meet the requirements of an updated statewide M&V Guide.

The program is designed to include several self-evaluation elements. These include:

* A clear record of pre-engagement energy savings plans by the participant
* Consistent reporting of milestones and deliverables
* Evaluations, by participants, of all workshops and key activities
* A clear log of identified energy saving opportunities, including savings estimates and implementation dates
* An annual assessment of energy management practices
* A clear annual summary of each participant’s activities, energy saving projects, estimated savings, and interaction with the program
* An annual energy consumption adjustment model that includes:
	+ Data quality reviews by Cascade
	+ Model reviews by the IOU twice annually
	+ At least 12 months of baseline data and 12 months of performance data for each performance year
	+ Clear documentation on decisions taken in the development of the model
	+ At least bi-yearly data updates

Non-IOU fuels savings eligibility will be determined as outlined in the [*California Industrial SEM M&V Guide*](https://pda.energydataweb.com/api/view/2648/CA_SEM_MV_Guide_v3.02.pdf)and the CPUC published guide, “Energy Efficiency Savings Eligibility at Sites with non- IOU Supplied Energy Sources” version 1.1. A top-down methodology will be used to determine the interactive effects of the non-IOU fuel and to calculate any adjustments to savings.

## Normalized Metered Energy Consumption (NMEC):

NMEC is not applicable to the SPARKe program.

# APPENDIX. List of Acronyms and Abbreviations

| Term | Definition |
| --- | --- |
| C&S | Codes & Standards |
| CALCTP | California Advanced Lighting Controls Training Program |
| CEDARS | California Energy Data and Reporting System |
| CPUC | California Public Utilities Commission |
| DAC | Disadvantaged Communities |
| DEER | Database for Energy Efficient Resources |
| DSM | Demand-Side Management |
| EE | Energy Efficiency |
| EE PRG | Energy Efficiency Procurement Review Group |
| EM&V | Evaluation, Measurement & Verification |
| ET | Emerging Technologies |
| EUL | Effective Useful Life |
| FSU | Fractional Savings Uncertainty |
| HTR | Hard-to-Reach |
| HVAC | Heating, Ventilation, & Air Conditioning |
| IOU | Investor-Owned Utility |
| IP | Implementation Plan |
| kW, kWh | kilowatts, kilowatt-hours |
| M&V | Measurement & Verification (or, sometimes, Validation) |
| NMEC | Normalized Metered Energy Consumption |
| PA | Program Administrator |
| PAC | Program Administrator Cost |
| RFA | Request for Abstract |
| RFP | Request for Proposal |
| SEM | Strategic Energy Management |
| TRC | Total Resource Cost |
| TSB | Total System Benefit |
| WE&T | Workforce Education & Training |

1. D.18-05-041, Page 20-21 and Ordering Paragraph 7. [↑](#footnote-ref-2)
2. D.18-10-008, Ordering Paragraph 1-2 and Attachment B, Section A-B, Page B-1. [↑](#footnote-ref-3)
3. D.18-10-008, Attachment B, Section D, page B-9. [↑](#footnote-ref-4)
4. Decision 23-02-002, page 43 <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M501/K931/501931085.PDF> [↑](#footnote-ref-5)
5. The expected causal relationships between program goals and program activities in a way that allows the reader to understand why the proposed program activities are expected to result in the accomplishment of the program goals. A well-developed program theory can (and should) also describe the barriers that will be overcome in order to accomplish the goals and clearly describe how the program activities are expected to overcome those barriers. *California Evaluation Framework*, June 2004. [↑](#footnote-ref-6)
6. The graphical representation of the program theory showing the flow between activities, their outputs, and subsequent short-term, intermediate, and long-term outcomes. *California Evaluation Framework*, June 2004. [↑](#footnote-ref-7)
7. Custom Project Guidance Documents

[CPUC Energy Division (file.ac)](https://file.ac/OEr-2p-bk3A/) [↑](#footnote-ref-8)
8. IPMVP Concepts and Options for Determining Energy and Water Savings Volume I

 <https://www.nrel.gov/docs/fy02osti/31505.pdf> [↑](#footnote-ref-9)
9. Uniform Methods Project: SEM M&V Protocol

<https://www.nrel.gov/docs/fy17osti/68316.pdf>

BPA MT&R Reference Guide

<https://semhub.com/resources/mt-r-reference-guide-revision-5-0> [↑](#footnote-ref-10)