Empowering Our Clean Energy Future

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MCE Special Executive Committee Meeting
Tuesday, September 8, 2026
12:00 p.m.

1125 Tamalpais Avenue
San Rafael, CA 94901

2300 Clayton Road, Suite 1500
Concord, CA, 94520

Public comments may be made in person or remotely via the details below.

Remote Public Meeting Participation

Video Conference:
https://us02web.zoom.us/j/86122343784?pwd=VVdrZVkzSzVublQ1NURZekNMMVVkUT09
Phone: Dial (669) 900-9128, Meeting ID: 861 2234 3784, Passcode: 415565

Materials related to this agenda are available for physical inspection at MCE's offices in San Rafael at 1125 Tamalpais Avenue, San Rafael, CA 94901 and in Concord at 2300 Clayton Road, Suite 1500, Concord, CA 94520.

DISABLED ACCOMMODATION: If you are a person with a disability who requires an accommodation or an alternative format, please contact MCE at (888) 632-3672 or ada-coordinator@mceCleanEnergy.org at least 72 hours before the meeting start time to ensure arrangements are made.

The Executive Committee may discuss and/or take action on any or all of the items listed on the agenda irrespective of how the items are described.

1. Roll Call/Quorum
2. Board Announcements (Discussion)
3. Public Open Time (Discussion)
4. Report from Chief Executive Officer (Discussion)
5. Consent Calendar (Discussion/Action)

   C.1. Approval of 7.6.26 Meeting Minutes

C.2. Proposed Third Amended and Restated Schedule A.1 to Master Services Agreement with CLEAResult Consulting, Inc

C.3. Proposed Amendment of Policy 014: MCE's Investment Policy

C.4. Review Draft 9.17.26 Board Agenda

6. Fiscal Year End 2026: Budget Results, Power Supply Variance, and Ratification of Certain Line Item Variances (Discussion/Action)

7. Public Open Time on Closed Session Matter

CLOSED SESSION

Conference with Labor Negotiator (Gov. Code §54957)
Agency Designated Representative: Executive Committee Chair
Unrepresented Employee: Acting Chief Executive Officer
Public Employee Performance Evaluation (Gov. Code §54957)
Title: Acting Chief Executive Officer
(Estimated 90 minutes)

8. Roll Call/Quorum

9. Committee & Staff Matters (Discussion)

10. Adjourn

Informational Reports

I.1. Financial Audit Fiscal Year Ended 2026

DRAFT

MCE EXECUTIVE COMMITTEE MEETING MINUTES
Monday, July 6, 2026
12:00 P.M.

Present:
Stephanie Andre, City of Larkspur
Max Perrey, City of Mill Valley
Barbara Coler, Town of Fairfax, Chair
Cindy Darling, City of Walnut Creek, Vice Chair
Devin Murphy, City of Pinole
Laura Nakamura, City of Concord
Beth Painter, City of Napa
Shanelle Scales-Preston, County of Contra Costa
Sally Wilkinson, City of Belvedere

Absent:
Kari Birdseye, City of Benicia
Maika Llorens Gulati, City of San Rafael

Staff & Others:
Jesica Brooks, Lead Board Clerk & Executive Assistant
Vicken Kasarjian, Acting CEO and Chief Operating Officer
Shaheen Khan, VP of Human Resources, Equity & Inclusion
Tanya Lomas, Board Clerk
Catalina Murphy, General Counsel
Ashley Muth, Internal Operations Associate
Efren Oxlaj, Manager of Finance
Justine Parmelee, VP of Internal Operations
Mike Rodriguez-Vargas, Internal Operations Assistant
Enyonam Senyo-Mensah, Manager of Internal Operations
Maíra Strauss, Chief Financial Officer
Jamie Tuckey, Chief Customer Officer

1. **Roll Call**
(Video 0:00:00)
Chair Coler called the regular Executive Committee meeting to order at 12:02 p.m. with quorum established by roll call.

2. **Board Announcements (Discussion)**
(Video 0:01:10)
There were no comments.

3. **Public Open Time (Discussion)**
(Video 0:02:12)

Chair Coler opened the public comment period and there was a comment from a member of the public, Jody Timms.

4. Report from Chief Executive Officer (Discussion)

(Video 0:09:09)

Vicken Kasarjian, Acting CEO and COO, introduced this item.

Chair Coler opened the public comment period and there was a comment from member of the public, Dan Segedin.

5. Consent Calendar (Discussion/Action)

(Video 0:20:15)

C.1 Approval of 6.1.26 Meeting Minutes
C.2 Review Draft 7.16.26 Board Agenda

Director Andre requested that Item C.2 be pulled from the consent calendar for discussion. The Chair accepted and opened the floor for questions and comments from committee members.

Chair Coler opened the public comment period and there were comments from members of the public, Jody Timms and Alicia Minyen.

Action 1: It was M/S/C (Perrey/Scales-Preston) **to approve Consent Calendar Item C.1.** Motion carried by unanimous roll call vote. (Absent: Birdseye and Llorens Gulati).

Action 2: It was M/S/C (Andre/Scales-Preston) **to approve Consent Calendar Item C.2.** Motion carried by unanimous roll call vote. (Absent: Birdseye and Llorens Gulati).

6. Proposed Creation of Ad Hoc CEO Search Committee (Discussion/Action)

(Video 0:30:54)

Chair Coler, Directors Darling and Scales-Preston, presented this item and addressed questions from Committee members.

Chair Coler opened the public comment period and there were comments from members of the public, Kingston Cole, Dan Segedin, Jody Timms, and Alicia Minyen.

Action 1: It was M/S/C (Coler/Nakamura) **to recommend to the Board of Directors to create an Ad Hoc CEO Search Committee, consisting of Directors Scales-Preston, Darling, Coler, Painter, Birdseye, Sackett, and McCormick to lead the search for the new MCE CEO, provided that the Committee bring key touch points (including the selection of a recruitment firm) to the Executive Committee or the Board (based on**

timing of meetings), and that the final CEO candidates be brought to the full Board for interviews and for the selection of the new CEO. Motion carried by roll call vote. 7-Yays 2-Nos (Nos: Andre and Wilkinson. Absent: Birdseye and Llorens Gulati).

Action 2: It was M/S (Andre/Wilkinson) **to recommend to the Board of Directors to create an Ad Hoc CEO Search Committee, consisting of Directors Sackett, Birdseye, McCormick, Painter, and Chair Scales-Preston to lead the search for the new MCE CEO, provided that the Committee bring key touch points (including the selection of a recruitment firm) to the Executive Committee or the Board (based on timing of meetings), and that the final CEO candidates be brought to the full Board for interviews and for the selection of the new CEO.** Motion did not carry. 3-Yays 6-Nos. (Nos: Coler, Darling, Murphy, Nakamura, Painter and Scales-Preston. Absent: Birdseye and Llorens Gulati).

7. Proposed Creation of Ad Hoc Civil Grand Jury Response Committee (Discussion/Action)

(Video 1:58:29)

Chair Coler, Directors Darling and Scales-Preston, presented this item and addressed questions from Committee members.

Chair Coler opened the public comment period and there were no comments

Action: It was M/S/C (Coler/Perrey) **recommend to the Board of Directors the creation of an Ad Hoc Grand Jury Response Committee, consisting of Directors Andre, Perrey, Szakats, and Walker, to lead and oversee preparation of a draft response to the June 16, 2026, Civil Grand Jury report. Other members (TBD at the July Board meeting) may include Belotz (or others). The timeframe for the response is for the Board to review and approve in advance of the September 14, 2026 due date.** Motion carried by unanimous roll call vote. (Absent: Birdseye and Llorens Gulati).

8. Proposed Exception to Operating Reserve Fund Policy Cap and Transfer (Discussion/Action)

(Video 2:22:40)

Maira Strauss, Chief Financial Officer, and Efren Oxlaj, Manager of Finance, introduced this item.

Chair Coler opened the public comment period and there were no comments

Action: It was M/S/C (Murphy/Nakamura) **to recommend to the Board of Directors approval of both a temporary waiver of the ORF policy cap and an $80 million deferral of FYE 2026 revenues to the ORF.** Motion carried by unanimous roll call vote. (Absent: Birdseye and Llorens Gulati).

9. Proposed General Counsel Reporting Structure (Discussion/Action)

(Video 2:28:41)

Catalina Murphy, general Counsel, presented this item and addressed questions from Committee members.

Chair Coler opened the public comment period and there were no comments.

Action: It was M/S/C (Perrey/Darling) **to recommend to the Board of Directors to approve the proposed resolution 2026-06 with requested edits to clarify that the hiring authority of the CEO and General Counsel remains with the Board of Directors.** Motion carried by unanimous roll call vote. (Absent: Birdseye and Llorens Gulati).

10. Committee & Staff Matters (Discussion)

(Video 2:46:57)

Director Wilkinson, Chair Coler and Catalina Murphy made comments.

11. Adjournment

Chair Coler adjourned the meeting at 2:52 p.m. to the next scheduled Executive Committee Meeting on August 3, 2026.

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Barbara Coler, Chair

Attest:

_____

Justine Parmelee, Secretary

Empowering Our Clean Energy Future
CONTRA COSTA | MARIN | NAPA | SOLANO

September 8, 2026

TO:	MCE Executive Committee
FROM:	Michael Denevan, Customer Programs Manager
RE:	Proposed Third Amended and Restated Schedule A.1 to Master Services Agreement with CLEAResult Consulting, Inc. (Agenda Item #05 C.2)
ATTACHMENTS:	A. Third Amended and Restated Schedule A.1 with CLEAResult Consulting, Inc. B. Second Amendment to Master Services Agreement with CLEAResult Consulting, Inc. C. First Amendment to Master Services Agreement with CLEAResult Consulting, Inc. D. Master Services Agreement with CLEAResult Consulting, Inc.

Dear Executive Committee Members:

Summary:

The proposed Third Amended and Restated Schedule A.1 with CLEAResult Consulting, Inc. ("3rd A&R Schedule A.1") would allow the vendor to continue to support MCE's Energy Management Program ("Program"). The Program has secured funding from the California Public Utilities Commission ("CPUC") to provide non-residential customers with energy saving incentives through 2027.

The Program's overarching goal is to motivate businesses within MCE's service area to lower their energy consumption by providing them with technical resources, administrative support, and financial incentives. Since 2019, CLEAResult Consulting Inc. ("CLEAResult") has been successfully implementing the Program by offering several avenues for Program participation, making it easy to tailor energy-saving projects to individual customers' needs.

To date, CLEAResult has built relationships with over 90 customers—primarily some of the largest energy consumers in MCE's service area—delivering over $1,000,000 in incentives, reducing over 5 GWh of annual energy consumption, and eliminating emissions equivalent to over 7.3 million miles driven by gas-powered vehicles. CLEAResult has been compensated $870,000 in performance payments for the work completed under the existing contract.

Due to a dramatic rise in Program uptake, CLEAResult has forecasted that their costs to implement the Program will surpass the current not-to-exceed (NTE) limit before the contract expires. Much of the increase in Program popularity has been tied to the growing demand for projects involving fuel

switching technologies such as large Heat Pump Water Heaters along with higher-than-expected energy savings from large Strategic Energy Management projects. By the end of 2026, MCE staff expect CLEAResult to double previous Program goals for incentive distribution and triple the amount of energy savings benefits for the Program.

The proposed 3rd A&R Schedule A.1 would neither increase CLEAResult's compensation rates nor increase customer incentive levels. Rather, it replaces sector-specific compensation caps with a single cumulative compensation cap of $6.5 million through March 31, 2027. CLEAResult continues to be compensated on a pay-for-performance basis using the same underlying rates tied to CPUC-claimable energy savings. The primary financial change is an increase in the maximum cumulative compensation authority available under Schedule A.1.

If approved, the new NTE in the proposed 3rd A&R Schedule A.1 would allow CLEAResult to meet the increased demand for Program services through the end of the current contract term which is March 31, 2027.

Fiscal Impacts: The proposed 3rd A&R Schedule A.1 establishes a cumulative NTE compensation amount of $6,500,000, which is inclusive of all previous Committee-approved Schedule A.1 expenditures, and constitutes an increase to the previously approved NTE by $3,231,859. Expenditures would continue to be funded entirely through CPUC-allocated energy efficiency program funds.

Recommendation: Approve the Proposed Third Amended and Restated Schedule A.1 with CLEAResult Consulting, Inc.

STATEMENT OF WORK – Third Amended and Restated Schedule A.1

Statement of Work for MCE Agricultural, Industrial, Commercial, and Multifamily Residential Sectors

This Third Amended and Restated Schedule A.1 ("Agreement") is entered into on **SEPTEMBER 8, 2026** pursuant to the Master Services Agreement, as amended, between MARIN CLEAN ENERGY, hereinafter referred to as "MCE", and CLEARESULT CONSULTING, INC., hereinafter referred to as "Implementer", dated September 3, 2021 and amended January 24, 2023 and October 28, 2024 ("MSA"). This Agreement amends, restates, and supersedes in its entirety the Second Amended and Restated Schedule A.1 dated November 6, 2024 (the "Second A&R Schedule A.1").

Implementer will provide the following Energy Efficiency Program services for MCE's Agricultural, Industrial, Commercial, and Multifamily Residential sectors as directed by MCE Customer Programs staff, up to the maximum time and fees allowed under this Agreement.

Overview:

Implementer will offer comprehensive solutions for delivering electric and gas energy efficiency savings for ten subprograms, serving the Agricultural, Commercial, Industrial, and Multifamily Residential customer base in MCE's service area. These subprograms will collectively be referred to as the Energy Management Program (or "Program"). They include:

- MCE02a: Commercial Deemed Program
- MCE02b: Commercial Custom Program
- MCE02c: Commercial Strategic Energy Management (SEM) Program
- MCE10a: Industrial Deemed Program
- MCE10b: Industrial Custom Program
- MCE10c: Industrial SEM Program
- MCE11a: Agricultural Deemed Program
- MCE11b: Agricultural Custom Program
- MCE11c: Agricultural SEM Program
- MCE01c: Multifamily SEM Program

Implementer may serve agricultural, industrial, commercial, and multifamily residential customers in MCE's service area that pay towards the Public Purpose Programs surcharge. Implementer will act in a customer's best interest if they are eligible for more than one CPUC-funded Energy Efficiency program by presenting all known incentive options to the customer, and letting the customer choose which incentive pathway they want to take.

Implementer will implement the Energy Management Program consistent with the outlines developed in program-specific Implementation Plans (see California Energy Data and Reporting System [CEDARS]: MCE02a IP and others).

Goals and Targets:

Savings goals and Implementer's operating budget (performance payments and customer incentive budgets) for each year or years will be finalized through the Bi-Annual Budget Advice Letter, or other Advice Letter requesting ratepayer funding. Implementer will adhere to the program budgets outlined by MCE following the approval of an Advice Letter for each funding cycle.

Program Services:

Implementer will provide comprehensive Program design, applicable customer project ("Project") development and Program implementation services, including but not limited to:

a. Program Design and Measure Development

Implementer will work with MCE on an ongoing basis to improve Program designs. This will include but is not limited to: identifying and vetting energy efficiency measures; setting incentive and/or rebate levels based on budgets approved by MCE; selecting savings calculation methods; and determining intervention strategies.

Implementer may propose new and/or changes to existing energy efficiency measures, incentive and/or rebate levels to MCE. Proposed changes should be documented and include but are not limited to: identifying the challenge(s), proposing the change(s), outlining who will be affected by this change, when the change will take place, providing a rationale for proposing this change, how the change will be executed, and quantifying and/or qualifying the desired outcome of this change.

Implementer may utilize deemed, custom, and SEM savings analyses and claims. Implementer will select the savings methodology which maximizes accuracy of the savings claim and customer benefit. Implementer will adhere to the most up-to-date guidance from the California Public Utilities Commission ("CPUC") in developing the subprograms and specific Projects. For SEM, Implementer will refer to the latest statewide SEM Design Guide and M&V Guide.

With support from MCE Customer Programs staff, Implementer will make updates (as applicable) to the Implementation Plans, subprogram Manuals, and fill in the Implementation Plan Change Summary Form per CPUC requirements for the Programs. The templates for Implementation Plans, Programs' Manuals, and Implementation Plan Change Summary Form are found on CEDARS.

Implementer will contribute to the development and update of MCE's Annual Budget Advice Letter(s) ("ABAL"), including providing MCE with cost-effectiveness forecasts and budget requests as needed in support of MCE's requests for ratepayer funding. Implementer will complete inputs for the Total Resource Cost ("TRC") and Program Administrator Cost ("PAC") calculations to inform cost-effectiveness forecasts.

Program Design and Measure Development Deliverables:

- A customer-facing document summarizing deemed and custom energy efficiency measures and rebate levels. Any proposed new and/or changes to existing energy efficiency measures, incentive and/or rebate levels shall be reflected in the associated document(s).
    - Estimated Delivery: Within 60 days of the 1st day of each Calendar Year and updated as needed or directed by MCE
- Updated customer application and enrollment forms, rebate/incentive forms, calculator tools, audit documentation
    - Estimated Delivery: As needed or directed by MCE
- Updates to the Implementation Plans, Programs' Manuals, and completion of the Implementation Plan Change Summary Form
    - Estimated Delivery: As needed or directed by MCE and checked on a quarterly basis
- Cost-effectiveness forecasts and budget requests
    - Estimated Delivery: As needed or directed by MCE

b. Customer Recruitment and Enrollment

Implementer will use data provided by MCE along with best practice parameters agreed upon between MCE and Implementer to target, recruit, and enroll customers in the Programs. Recruitment may include, but is not limited to:

- Coordination with MCE and Pacific Gas and Electric Company ("PG&E") representatives on recruitment and enrollment content and activities;
- Customer outreach;
- Vendor engagement; and
- Industry trade association event attendance and coordination.

Implementer will provide a Marketing and Outreach (M&O) Plan to MCE for MCE Public Affairs Team review, input, and approval. MCE Public Affairs Team will perform the agreed upon marketing and

outreach initiatives. The M&O Plan will include, but not be limited to the following for each subprogram:

- Suggested marketing and outreach strategies
- Targeted markets and/or submarkets
- Timelines, roles, and responsibilities for proposed activities
- Requests for marketing and outreach support

Implementer will establish a customer recruitment and enrollment plan for the Program with key performance indicators ("KPIs"). The KPIs may include but are not limited to:

- Number of customers contacted about the Program
- Number of virtual assessments to discuss customer's needs
- Number of on-site visits
- Number of assessment reports delivered to customers.
- Number of customer meetings (including virtual) to discuss program details and customer's needs
- Number of customers enrolled

Customer Recruitment and Enrollment Deliverables:

- Coordination and report-out on marketing support; conduct and coordinate on outreach and enrollment
    - Estimated Delivery: Coordination ongoing, and report-out via bi-weekly MCE-Implementer virtual meetings
- M&O Plan
    - Estimated Delivery: Within 60 days of the 1st day of each Calendar Year
- Customer recruitment plan with KPIs
    - Estimated Delivery: Within 60 days of the 1st day of each Calendar Year

c. Project Development and Project Engineering

Implementer will perform engineering for each Project which may include, but is not limited to: engineering assessments; energy savings and Project financial assessments; Project data analysis and calculations; Project evaluation; Project site surveys and assessments; and Measurement & Verification (M&V). Implementer will provide customers with estimated savings summaries and/or reports for each Project to address customer-specific needs such as payback estimates, annual energy savings estimates, operational improvements, and financing resources.

Project Development and Project Engineering Deliverables:

- Customer Project reports (assessments, analyses, calculations)
    - Estimated Delivery: Ongoing

d. Project Tracking in MCE CRM

Implementer will develop a Data Control Plan in collaboration with MCE Customer Programs Team and MCE Technology and Analytics Team, and subject to both MCE Teams' written approval. The Data Control Plan will comprehensively outline the data intake format, types of data to be shared, the purposes for which the data may be utilized, the employees responsible for the data's management, the mechanisms for data protection and confidentiality, and frequency of data share. Any data not explicitly mentioned within the Data Control Plan shall be excluded from sharing between the parties unless otherwise agreed upon in writing. The Data Control Plan will include data intake format and frequency of data required from MCE to Implementer to enable Programs implementation, and from Implementer to MCE to enable each subprogram's performance tracking and reporting, provided that MCE reasonably cooperates with Implementer in providing Program requirements, data definitions, reporting expectations, CRM configuration details, and designated points of contact necessary to support development and review of the Data Control Plan within a reasonable time after Implementer's request.

Once a Data Control Plan is developed and agreed upon in writing by both parties, Implementer will integrate with MCE's CRM by providing and maintaining Project data for the Program. Subject to the CRM Access Protocols included in Exhibit D of the MSA, Implementer will access MCE's CRM via the Direct Portal to get customer details from MCE and to update MCE's CRM manually with Program data on

Project related interactions, data to be used in MCE's claims process, and customer progression through the Program as outlined in the Data Control Plan. For the avoidance of doubt, in accordance with the CRM Access Protocols, this information cannot be used for Implementer's outreach and cold calls.

Project Tracking in MCE CRM Deliverables:

- Data Control Plan
  - Estimated Delivery: Within 60 days of Effective Date (defined below)
- Project tracking in MCE CRM
  - Estimated Delivery: Within 90 days after the Data Control Plan is developed and agreed upon, then updated prior to each MCE-Implementer monthly business relations meeting

e. Program Reporting

Implementer will manage and track the Program's allocation of incentives and incentives budget (by Agriculture and Industrial Resource (AIR) Project, by SEM year-end performance, and by SEM milestones).

Implementer will:

- Track SEM milestone incentive budget in the monthly SEM pipeline reports.
- Provide incentive requests and required documentation within a reasonable timeframe, typically within a month of when the customer met the associated milestone or a project completed the associated Project M&V and Quality Assurance/Quality Control (QA/QC) including MCE review and approval for SEM and Custom projects.

Implementer will follow the latest statewide SEM Design Guide and M&V Guide for reporting requirements and timing, including:

- First Time (and subsequent) Mid-Year reports
- Reporting Period Performance Report which includes the following:
  - Scoping reports
  - Education Modules reports
  - Energy Management Assessment (EMA) Summary reports
  - Treasure Hunt reports
  - Cycle Decision and Transition reports

Implementer will use a data-driven approach to provide effective and comprehensive end-to-end data collection, analysis, and reporting to drive continuous improvement to reduce risk and increase participation, savings, forecast accuracy, and cost-efficiencies.

Implementer will:

- Provide monthly forecast reports with Project descriptions, statuses, estimated completion dates, estimated annual net energy savings (kWh, kW reduction, therms), estimated customer incentives and milestone payments, estimated Implementer performance payment, estimated total system benefits (TSB), and estimated TRC when requested to measure progress of the Program.
- Provide monthly SEM pipeline reports that track performance using KPIs, milestone activities, and describe any risks/issues/resolutions to measure progress and troubleshoot issues in the Program.
- Provide bi-annual Program impacts and enhancements reports that detail the results and accomplishments of the Program in narrative, graphical, and numerical formats. These reports will at a minimum include updated cost effectiveness test results, KPI goals and results, a summary of the satisfaction surveys and any actions taken or that will be taken to address any relevant customer feedback.

Implementer will support MCE's preparation of Energy Efficiency Savings Claims (monthly, quarterly, and annually), as well as custom and new SEM Participant Project data and documentation (bi-monthly, and

when requested by CPUC via MCE) for CPUC Project review and reporting.

Implementer will:

- Provide custom and/or new SEM participant Project data via the CPUC's Custom Measure and Project Archive ("CMPA") Project list template, as outlined by the CPUC's Custom Project Review process.
- Provide custom and/or new SEM participant project documents, when selected by the CPUC for ex-ante review, as instructed by the CPUC.
- Provide custom and/or SEM participant Project documents, as requested, when the CPUC-selected Projects are complete and/or when selected for ex-post evaluations.
- Provide monthly claims reports of Projects and Programs/portfolio-level data for CPUC reporting as requested by MCE staff and/or MCE contractors.
- Provide quarterly custom and SEM Project status updates using the CPUC's custom project status list by the 12th (or closest earlier weekday) of January, April, July, and October.
- Provide annual true-up reports, as requested by MCE.

Program Reporting Deliverables:

- Incentive requests and required documentation
  - Estimated Delivery: Ongoing
- SEM Participant reports
  - Estimated Delivery: Mid-Year Reports approximately six to seven months after the start of a SEM program Cycle and then again approximately 13-15 months after; Reporting Period Performance Reports and associated reports approximately two months after the participant's year-end date.
- Forecast reports
  - Estimated Delivery: by the 4th Thursday of every month
- SEM Program reports with KPIs, including milestone incentive tracking
  - Estimated Delivery: by the 1st (or 1st weekday) of every month
- Bi-annual Program Impacts and Enhancements reports (Cost-Effectiveness Tests, KPI results, accomplishments, satisfaction survey results, areas, and strategies for growth)
  - Estimated Delivery: Bi-annually by the first day (or first weekday) of March and September, or as requested by MCE. Request for Cost Effectiveness Tests will be based on compliance requirements, in support of budget requests or Program Design revisions
- Project data for Energy Efficiency Savings Claims
  - Estimated Delivery: Monthly, quarterly, and annually
- Project data for CPUC ex-ante reviews
  - Estimated Delivery: by the Friday before the first and third Monday of the month
- Project data and documentation for CPUC-selected Project (ex-ante and ex-post)
  - Estimated Delivery: As requested, within the requested timeframe

f. Project Application Review, Validation, and Submittal

Implementer will maintain customer application documents and energy savings calculators for use throughout the Programs. Implementer will compile, review, and validate customer Project applications prior to submitting to MCE for payment. Any Project submitted for incentive payment must also be submitted as part of the monthly and quarterly energy savings claim (see below).

Based on the sampling rates noted in the Implementation Plan, a subset of all deemed Projects and measures must be selected for post-installation review. A subset of all Custom Projects will be audited both pre-installation and post-installation to verify accuracy of savings claims. SEM Projects will adhere to CPUC guidance on the validation of savings claims.

Implementer will submit net and gross monthly energy savings and year-to-date energy savings claims data on a monthly basis for each Project, following the submittal of an application for incentive payment. Monthly

reporting documentation will include:

- Monthly invoice;
- Monthly reporting, including net energy savings (kWh, kW reduction, therms) and year-to-date net energy savings;
- Monthly spend-to-date on dollar per unit (kwh and therm) in customer incentives;
- Project paperwork as required by MCE program managers.

Project Application Review, Validation, and Submittal Deliverables:

- Maintain customer application documents and calculators
  - Estimated Delivery: Ongoing
- Completed Project documentation, submitted to MCE for incentive payment
  - Estimated Delivery: Ongoing
- Completed Project documentation for both pre-installation and post-installation for CPUC-selected Projects, submitted to MCE
  - Estimated Delivery: As needed, when selected for CPUC review
- Pay-for-performance invoice, submitted to MCE for performance payment
  - Estimated Delivery: Monthly, by the 15th day of the following invoiced month

g. Quality Assurance/Quality Control

Implementer will ensure compliance with QA/QC Plan, subject to MCE's review and request for updates as needed, documenting the methods used to vet projects and establish reliable savings estimates for each subprogram. The QA/QC process may vary based on subprogram and may include the following phases:

- MCE Data Review: Upon receipt of pertinent data necessary for Implementer's delivery of the services, Implementer will perform a data review to ensure no information is missing and will request updated data in the case of any omissions. Should Implementer notice a trend, Implementer will suggest QA approaches that MCE can take to ensure more complete data moving forward, such as checks to ensure data for all meters is provided for the full period requested. Data intake, QC, and review to be defined in the Data Control Plan.
- Project Eligibility Screening: Verify Customer Site Eligibility by confirming that the customer site(s) are located in MCE's service area and the savings opportunity is associated with a meter that the customer pays towards the Public Purpose Program surcharge.
- Application Package Review: Confirm all application materials are complete, and calculations are reasonable. A QC checklist will be used to ensure all items are reviewed and will include a review of the most up-to-date CPUC requirements.
- Project Data Review: Implementer's site-specific energy modeling tool integrates weather data, a Customer's energy consumption data, and relevant production data that influences energy consumption. Thorough analysis is performed to validate the integrity of the tool and should be adequately documented for a third-party evaluation to recreate the energy model and associated calculated savings.
- Optional Inspections: Implementer reserves the right to perform either pre- and/or post-installation inspections, either via onsite visit, video-enabled virtual visit, or through photographs, as deemed necessary and appropriate by Implementer to ensure quality.
- Satisfaction surveys: Implementer and MCE will agree upon sample size, frequency, format, content, and delivery of surveys to solicit feedback from Program participants. Implementer will present results and associated next steps in bi-annual Program reports.
  - MCE-suggested minimum sample sizes: 20% of installed AIR projects per year, 20% of SEM program participants
- Continuing QA/QC: Implementer will continually assess QA/QC needs and update processes and protocols to promote the best Program outcomes with the simplest possible process.

At the request of MCE, Implementer will participate in Program enhancement planning activities and energy efficiency policy coordination to improve Program design. This may include but is not limited to:

- Participating in statewide Custom Industrial, Agricultural, and Commercial ("CIAC") and SEM

meetings and associated activities

- On a bi-annual basis, Implementer will participate in a presentation meeting to discuss the results of the bi-annual program impacts and enhancements reports with MCE Program Manager and provide any proposed Program enhancements.

Quality Assurance/Quality Control Deliverables:

- Continuous assessment of QA/QC needs and update processes and protocols
  - Estimated Delivery: Ongoing
- Participation in relevant statewide Energy Efficiency Incentive Program meetings, CPUC-directed initiatives
  - Estimated Delivery: Monthly, and as needed or directed by MCE
- Participation in bi-annual Program Impacts and Enhancements meetings
  - Estimated Delivery: Bi-annually

h. M&V Plan and M&V

Implementer will provide an updated M&V Plan to serve as the basis for verification of savings claims. Implementer shall conduct all M&V activities in compliance with all CPUC orders and guidance.

Implementer will ensure that SEM projects follow the most up-to-date guidance from the CPUC on M&V, including the custom treatment of SEM-generated custom and deemed measures (D.16.08.019), incorporating principles of the California SEM M&V Guide, The American Society of Heating, Refrigerating and Air-Conditioning Engineers Guideline 14:2014, and International Performance Measurement and Verification Protocol ("IPMVP"). The M&V Plan will include the following:

- Energy Data Collection Plan
- Energy Data Report
- Energy Savings Calculation Report

M&V Plan and M&V Deliverables:

- Updated M&V Plan within Implementation Plan for all subprograms
  - Estimated Delivery: As requested by MCE

Billing:

This Agreement supersedes and replaces the Second A&R Schedule A.1 and all prior versions of Schedule A.1 as of the Effective Date; provided, however, that all amounts previously invoiced, paid, accrued, or otherwise payable under the Second A&R Schedule A.1 shall count toward the cumulative maximum compensation stated herein.

For purposes of this Agreement, "net" is defined as claimable energy savings as determined and approved by the CPUC. Implementer shall adhere to the most up-to-date guidance from the CPUC for all calculations of net energy savings.

Implementer's compensation shall be calculated using the rates set forth in Tables 1 and 2. Compensation is earned based on net claimed energy savings reported to the CPUC for completed Projects. Implementer payments for SEM, deemed, and custom Projects shall be made following Project completion and submission of Project energy savings documentation and claims data to MCE. Custom claimable energy savings will be based on the CPUC-approved policy at the time the Project is pre-approved by MCE and valid for a period of one year. Projects not completed within one year of MCE pre-approval, may require additional MCE review.

Implementer shall invoice monthly for completed Projects in accordance with this Agreement. **In no event shall the aggregate compensation payable by MCE under this Schedule A.1 exceed $6,500,000.** Such amount is cumulative and includes all amounts previously paid, invoiced, accrued, or otherwise payable under the Second A&R Schedule A.1 and under this Third Amended & Restated Schedule A.1, whether invoiced before or after the Effective Date of this Agreement.

Table 1: Compensation Rates

	2025-2026 Program Years		
	$/net kWh	**$/net therm**	
Industrial	$0.32	$1.88	
Agricultural	$0.32	$1.88	
Commercial	$0.29	$1.88	
Multifamily Residential	$0.45	$2.55	

Notwithstanding Table 1, Implementer shall be compensated for Deemed Fuel Substitution Measures SWWH027 and SWWH028 in accordance with Table 2. The compensation rate in Table 2 shall replace, and not supplement, the rates set forth in Table 1 for such measures. For purposes of Table 2, "TSB" means total system benefits as calculated under the corresponding CPUC-approved Deemed workpaper in effect at the time the applicable Project is submitted to MCE.

Table 2: Compensation Rate

2025-2026 Program Years	**$/TSB**
Deemed Fuel Substitution Measures (SWWH027 and SWWH028)	$0.15

The Program budget is determined by MCE on an annual basis through MCE's Annual, Bi-Annual or Supplemental Advice Letters that request ratepayer funding for the Industrial, Agricultural Commercial, and Multifamily Residential Programs. The funding available to Implementer is contingent upon CPUC approval of the aforementioned Advice Letters, and subject to change, pending regulatory approval to continue administering these programs. MCE will inform Implementer at the beginning of each Program year the expected funding available for performance rates and customer incentives, which may be updated from time to time as needed by MCE.

Term of Statement of Work:
This Third Amended and Restated Statement of Work shall commence on **September 8, 2026** ("Effective Date") and shall terminate on **March 31, 2027**.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the last date of signature below.

APPROVED BY
MARIN CLEAN ENERGY:

By: _____

Name: _____

Title: _____

Date: _____

By:_____
Chairperson

Name: _____

Date: _____

CLEARESULT CONSULTING, INC.:

By: _____

Name: _____

Title: _____

Date: _____

SECOND AMENDMENT TO MASTER SERVICES AGREEMENT
BY AND BETWEEN MARIN CLEAN ENERGY AND CLEARESULT CONSULTING, INC.

This SECOND AMENDMENT to the MASTER SERVICES AGREEMENT is made and entered into on 10/28/2024, by and between MARIN CLEAN ENERGY (hereinafter referred to as "MCE") and CLEAResult Consulting, Inc. (hereinafter referred to as "Implementer").

RECITALS

WHEREAS, MCE and Implementer entered into a master services agreement on September 3, 2021 and amended on January 24, 2023, to provide various scopes of services ("Agreement"); and

WHEREAS, Section 4 of the Agreement, as amended, stated the Agreement shall terminate on March 31, 2026; and

WHEREAS, the parties desire to amend the Agreement to extend the time of the Agreement; and

WHEREAS, the parties desire to amend and replace Section 20 of the Agreement "Acknowledgment of Exhibits; and

WHEREAS, the parties desire to update Exhibit D found in the First Amendment to the MSA Agreement;

NOW, THEREFORE, the parties agree to modify the Agreement, as set forth below.

AGREEMENT

1. Section 4 is hereby amended to read as follows:

   TERM OF AGREEMENT:
   This Agreement shall commence on **September 3, 2021** ("Effective Date"), and shall terminate on **March 31, 2027**, unless earlier terminated pursuant to the terms and conditions set forth in Section 12.

2. Section 20 of the Agreement "Acknowledgment of Exhibits" is hereby amended and replaced to read as follows:

   20. ACKNOWLEDGEMENT OF EXHIBITS:

In the event of a conflict between the Terms of this Agreement and the terms in any of the following Exhibits, the terms in this Agreement will govern.

	☒	*Check applicable Exhibits*	IMPLEMENTER'S INITIALS
EXHIBIT A.	☒	**Form of Statement or Work**	Initial KD
EXHIBIT B.	☒	**Fees and Payment**	Initial KD
EXHIBIT C.	☒	**Energy Efficiency Program Terms**	Initial KD
EXHIBIT D.	☒	**CRM Access Protocols**	KD

Schedule A.1	☒	**Statement of Work for MCE's Industrial, Agricultural, Commercial and Multifamily Residential Sectors**	Initial KD
Schedule A.3	☒	**Statement of Work for MCE EV Charging Progam**	Initial KD

3. **EXHIBIT D "MCE CRM ACCESS PROTOCOLS"** found in the First Amendment to the MSA Agreement is hereby amended and replaced in its entirety to read:

EXHIBIT D
MCE CRM ACCESS PROTOCOLS

Implementer shall implement the following security measures as part of the Agreement according to program needs up to the time/fees allowed under the Agreement in order to gain access to MCE's Customer Relationship Management software ("MCE CRM"), whether through direct portal access or via application programming interface ("API") integration.

To access MCE CRM, Implementer must first agree to and comply with the following protocols, including, if applicable, those related to API integration:

1. MCE CRM access is subject to the NDA between the Parties dated January 19, 2023.

2. MCE CRM login information, passwords, and any information retrieved from MCE CRM shall be treated as Confidential Information.
    A. Confidential Information shall have the same meaning as defined in the MCE NDA between the Parties dated January 19, 2023.
    B. No Implementer employee is to give, tell, or hint at their login information or password to another person under any circumstance.
    C. MCE CRM passwords are required to be changed every 90 days at least.
    D. MCE encourages strong passwords (such as minimum character length, and use of special characters) that are not reused for other logins.
    E. MCE CRM shall only be accessed from an Internet Protocol (IP) address in the United States.
        - Any suspicious or unauthorized IP access may be blocked without notice by MCE.
        - Implementer agrees that MCE is not liable for any interruption or restriction of access to the CRM resulting from the blocking of suspicious or unauthorized IP addresses.
    F. MCE reserves the right to use approved public IP addresses to control and limit access to MCE's systems.

3. MCE CRM access shall be provided through MCE's selected Single Sign-On (SSO) provider, Okta, Inc. or another MCE-designated SSO provider.

4. Direct MCE CRM Portal Access Restrictions.
    A. Direct MCE CRM portal access shall only be provided to those employees of Implementer who have a "need to access" such information in the course of their duties with respect to Implementer's Services ("Designated Employees").
        - Designated Employees who access MCE CRM shall only update or view fields related to the tasks assigned.
        - Implementer shall maintain a list of Designated Employees that have been authorized to access MCE CRM.
            - The list shall be updated and verified by Implementer quarterly and provided to MCE upon request.

- In the event of an employment status change for a Designated Employee who had been granted access to MCE CRM, Implementer shall provide the following information to MCE:
    - Name and email of pertinent Implementer employee.
    - Notification to MCE within 3 days of employment status change.

B. Designated Employees who access MCE CRM shall first review and agree to be bound by these MCE CRM Access Protocols.
C. Designated Employees' use of MCE CRM is restricted to that which is necessary to provide the Services described in Exhibit A.
D. Designated Employees shall not copy, download, record or reproduce in any way any data existing within MCE CRM.
    - Any customer data that is utilized or uploaded must be removed from Designated Employees' computers and Implementer's systems within 24 hours of upload or utilization.

5. API Integration Restrictions
    A. Implementer shall only use an MCE-authorized API to the extent its use is necessary for the completion of contracted work as included in Exhibit A.
    B. Implementer shall use industry best standards and significant access control in a closed API system. This includes, but is not limited to:
        - Only employees of Implementer who have a "need to access" such information in the course of their duties with respect to Implementer's Services ("Designated Employees") will be allowed to access information available through the API.
            - For an employee to become a Designated Employee, they must first successfully pass a background screening, which may include a screening of the individual's educational background, employment history, valid driver's license, and court record.
            - If a Designated Employee leaves Implementer's employment or if a Designated Employee's position changes such that they no longer need API access, Implementer will close the employee's access within 24 hours and provide the following information to MCE:
                - Name and email of pertinent employee.
                - Notification to MCE within 24 hours of employment status change.
        - Implementer must keep MCE informed of the names, positions, and data access levels of all Designated Employees with a Designated Employee List which shall be updated and verified by Implementer quarterly and provided to MCE upon request.
        - Designated Employees are prohibited from copying, downloading, recording, or reproducing any MCE data except through the approved API integration.

6. Implementer having any interaction with an MCE customer shall do the following:
    A. Implementer shall comply at all times during the Term with any MCE-provided MCE co-branding and/or customer engagement protocol that provides MCE's expectations for customer interactions by Implementer. Failure of Implementer to comply at all times with this section will constitute a material breach pursuant to Agreement section 12 and may result in the discontinuation of work with MCE at MCE's request.
    B. Implementer and any approved subcontractors responding to, or engaging directly with, MCE customers shall respond to direct customer inquiries within 3 business days after the inquiry is received. Unless otherwise agreed to, Implementer and subcontractors are to provide two options for customer contact (email and phone). Implementer shall provide MCE with a process to document any customer issues, escalations and resolutions.

4. Except as otherwise provided herein all terms and conditions of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have executed this Second Amendment on the day first written above.

MARIN CLEAN ENERGY: IMPLEMENTER:

By: Signed by: Dawn Weisz A59878416EBC4F8...

Date: 10/28/2024

By: Signed by: Kecia Davison 26765C432D1741E...

Date: 10/30/2024

DocuSign Envelope ID: D917F387-C231-4C9E-82DD-160A5F5D6326

FIRST AMENDMENT TO MASTER SERVICES AGREEMENT
BY AND BETWEEN MARIN CLEAN ENERGY AND CLEARESULT CONSULTING, INC.

This FIRST AMENDMENT is made and entered into on 1/24/2023, by and between MARIN CLEAN ENERGY (hereinafter referred to as "MCE") and CLEAResult Consulting, Inc. (hereinafter referred to as "Implementer").

RECITALS

WHEREAS, MCE and Implementer entered into a master services agreement on September 3, 2021, to provide various scopes of services ("Agreement"); and

WHEREAS, Section 4 of the Agreement stated the Agreement shall terminate on December 31, 2024; and

WHEREAS, the parties desire to amend the Agreement to extend the time of the Agreement; and

WHEREAS, Implementer and MCE entered into a non-disclosure agreement on March 20, 2019 which states Implementer's purposes in Schedule A ("NDA"); and

WHEREAS, Implementer and MCE have updated Implementer's stated purposes in Schedule A of the NDA; and

WHEREAS, MCE requires Implementer to comply with certain protocols in order to access MCE's Customer Relationship Management software ("CRM Access Protocols"); and

WHEREAS, the parties desire to add the CRM Access Protocols as an exhibit to the Agreement;

NOW, THEREFORE, the parties agree to modify Section 4, update the date of Marin Clean Energy Non-Disclosure Agreement between the parties referenced in sections 10.1, 10.3 and 10.5, and add Exhibit D, as set forth below.

Agreement

1. Section 4 is hereby amended to read as follows:

   TERM OF AGREEMENT:
   This Agreement shall commence on **September 3, 2021** (Effective Date"), and shall terminate on **March 31, 2026**, unless earlier terminated pursuant the terms and conditions set forth in Section 12.

2. The date of the Marin Clean Energy Non-Disclosure Agreement between the parties referenced in sections 10.1, 10.3, and 10.5, is changed from **March 20, 2019** to **January 20, 2023**.

3. The following Exhibit D is hereby added to the Agreement to follow Exhibit C:

EXHIBIT D
MCE CRM ACCESS PROTOCOLS

Implementer shall provide the following protective measures under the Agreement in order to access the MCE Customer Relationship Management software ("MCE CRM") according to program needs up to the time/fees allowed under this Agreement.

This Exhibit D is applicable to all existing and any future schedules under this Agreement.

In order for Implementer to access MCE CRM, Implementer must first agree to and comply with the following protocols:

1. MCE CRM access is subject to the NDA between the Parties dated January 20, 2023.

2. MCE CRM login information, passwords, and any information retrieved from MCE CRM shall be treated as Confidential Information.
    - Confidential Information shall have the same meaning as defined in the MCE NDA between the Parties dated January 20, 2023.
    - No Implementer employee is to give, tell, or hint at their login information or password to another person under any circumstance.
    - MCE CRM passwords are required to be changed every 90 days.
    - MCE encourages strong passwords (such as minimum character length, and use of special characters) that are not reused for other logins.
    - MCE CRM shall only be accessed from an Internet Protocol (IP) address in the United States.

3. MCE CRM access shall be provided through MCE's selected Single Sign-On (SSO) provider, Okta, Inc. or any MCE-designated SSO provider.

4. MCE CRM access shall be restricted.
    - MCE CRM access shall only be provided to those employees of Implementer who have a "need to access" such information in the course of their duties with respect to Implementer's Services.
        - Implementer employees who access MCE CRM shall only update or view fields related to the tasks assigned.
        - Implementer shall maintain a list of Implementer employees that have been authorized to access MCE CRM.
            - The list shall be updated and verified by Implementer quarterly, upon Implementer employee turnover, and upon MCE's request.
    - Implementer employees who access MCE CRM shall first review and agree to be bound by these MCE CRM Access Protocols.
    - Implementer's use of the CRM and any data obtained from MCE's CRM is restricted to that which is necessary to provide the Services described in all existing and any future Schedules under this Agreement.
    - Except for data obtained by Implementer from MCE's CRM via an MCE-authorized application programming interface, Implementer shall not copy, download, record or reproduce in any way any data from MCE's CRM.

5. In the event of an employment status change for an Implementer employee who had been granted access to MCE CRM, Implementer shall provide the following information to MCE:
    - Name and email of pertinent Implementer employee.
    - Notification to MCE within 3 days of employment status change.

6. Implementer having any interaction with an MCE customer shall do the following:
    - Implementer shall comply at all times during the Term with any MCE-provided MCE co-branding and/or customer engagement protocol that provides MCE's expectations for customer interactions by Implementer. Failure of Implementer to comply at all times with this section will constitute a material breach pursuant to Agreement section 12, and may result in the discontinuation of work with MCE at MCE's request.
    - Implementer and any approved subcontractors responding to, or engaging directly with, MCE customers shall respond to direct customer inquiries within 3 business days after the inquiry is received. Unless otherwise agreed to, Implementer and subcontractors are to provide two options for customer contact (email and phone). Implementer shall provide MCE with a process to document any customer issues, escalations and resolutions.

4. Except as otherwise provided herein all terms and conditions of the Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have executed this FIRST AMENDMENT on the day first written above.

MARIN CLEAN ENERGY:

By: DocuSigned by: Dawn Weisz A59878416EBC4F8...

Date: 1/24/2023

IMPLEMENTER:

By: DocuSigned by: Kecia Davison 26765C432D1741E...

Date: 1/24/2023

MARIN CLEAN ENERGY
ENERGY EFFICIENCY PROGRAMS

MASTER SERVICES AGREEMENT
BY AND BETWEEN
MARIN CLEAN ENERGY AND CLEARESULT CONSULTING INC.

THIS MASTER SERVICES AGREEMENT ("Agreement") is made and entered into on **September 3, 2021** by and between MARIN CLEAN ENERGY (hereinafter referred to as "MCE") and CLEAResult Consulting Inc., a **Texas corporation** with a principal address at: **6504 Bridge Point Parkway, Suite 425, Austin, Texas, 78730** (hereinafter referred to as "Implementer" or "Contractor") (each, a "Party," and, together, the "Parties").

RECITALS:

WHEREAS, MCE desires to retain Implementer to provide the services described in statements of work ("Statement of Work") to be agreed by the Parties, in form and substance as set forth on **Exhibit A** attached hereto, and which shall be considered Schedules hereto;

Each Statement of Work executed by and between the Parties are made a part hereof ("Services");

WHEREAS, Implementer desires to provide the Services to MCE;

NOW, THEREFORE, in consideration of the mutual covenants herein contained, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. SCOPE OF SERVICES:
Implementer agrees to provide all of the Services in accordance with the terms and conditions of this Agreement. "Services" shall also include any other work performed by Implementer pursuant to this Agreement.

2. TRANSACTION TAXES, FEES AND PAYMENT SCHEDULE; INVOICING:
The fees and payment schedule for furnishing Services under this Agreement shall be based on the rate schedule which is attached hereto as **Exhibit B** and by this reference incorporated herein. Said fees shall remain in effect for the entire term of the Agreement ("Term"). Implementer shall provide MCE with Implementer's Federal Tax I.D. number prior to submitting the first invoice. Implementer is responsible for billing MCE in a timely and accurate manner. Implementer shall email invoices to MCE on a monthly basis for any Services rendered or expenses incurred hereunder. Fees and expenses invoiced beyond ninety (90) days will not be reimbursable. The final invoice must be submitted within thirty (30) days of completion of the stated scope of services or termination of this Agreement. MCE will process payment for undisputed invoiced amounts and provide written notice of any amount in dispute within thirty (30) days.
Notwithstanding anything to the contrary in this Agreement, MCE agrees, for purposes of any sales tax, use tax, excise tax, valued-added tax, gross receipts tax, or any other transaction tax (collectively, "Sales Taxes"), that MCE is solely responsible for all Sales Taxes that arise under this Agreement. Notwithstanding anything to the contrary in this Agreement, the prices under this agreement do not include Sales Taxes, and MCE shall pay all Sales Taxes, if any, charged by Implementer under this Agreement. MCE shall agree to indemnify, defend, and hold harmless Implementer for any damages imposed on or suffered by Implementer arising from MCE's failure to timely and properly remit Sales Taxes to the appropriate tax jurisdiction, or properly complete and provide any purchase order, exemption certificate, certificate of entitlement, or other form or document required by a tax jurisdiction.

3. MAXIMUM COST TO MCE:
In no event will the cost to MCE for the Services to be provided herein exceed the maximum sum identified in each Statement of Work.

4. TERM OF AGREEMENT:
This Agreement shall commence on **September 3, 2021** ("Effective Data") and shall terminate on **December 31, 2024**, unless earlier terminated pursuant to the terms and conditions set forth in Section 12.

5. REPRESENTATIONS; WARRANTIES; COVENANTS:

5.1. IMPLEMENTER REPRESENTATIONS AND WARRANTIES. Implementer represents, warrants and covenants that (a) it is a **corporation** duly organized, validly existing and in good standing under the laws of the State of **Texas**, (b) it has full power and authority and all regulatory authorizations required to execute, deliver and perform its obligations under this Agreement and all exhibits and addenda and to engage in the business it presently conducts and contemplates conducting, (c) it is and will be duly licensed or qualified to do business and in good standing under the laws of the State of California and each other jurisdiction

wherein the nature of its business transacted by it makes such licensing or qualification necessary and where the failure to be licensed or qualified would have a material adverse effect on its ability to perform its obligations hereunder, (d) it is qualified and competent to render the Services and possesses the requisite expertise to perform its obligations hereunder, (e) the execution, delivery and performance of this Agreement and all exhibits and addenda hereto are within its powers and do not violate the terms and conditions in its governing documents, any contracts to which it is a party or any law, rule, regulation, order or the like applicable to it, (f) this Agreement and each exhibit and addendum constitutes its legally valid and binding obligation enforceable against it in accordance with its terms, and (g) it is not bankrupt and there are no proceedings pending or being contemplated by it or, to its knowledge, threatened against it which would result in it being or becoming bankrupt.

5.2. COMPLIANCE WITH APPLICABLE LAW: At all times during the Term and the performance of the Services, Implementer shall comply with all applicable federal, state and local laws, regulations, ordinances and resolutions ("Applicable Law")

5.3. LICENSING. At all times during the performance of the Services, Implementer represents, warrants and covenants that it has and shall obtain and maintain, at its sole cost and expense, all required permits, licenses, certificates and registrations required for the operation of its business and the performance of the Services. Implementer shall promptly provide copies of such licenses and registrations to MCE at the request of MCE.

5.4. NONDISCRIMINATORY EMPLOYMENT: Implementer shall not unlawfully discriminate against any individual based on race, color, religion, nationality, sex, sexual orientation, gender identity, age or condition of disability. Implementer understands and agrees that Implementer is bound by and shall comply with the nondiscrimination mandates of all federal, state, and local statutes, regulations, and ordinances.

5.5. PERFORMANCE ASSURANCE; BONDING (REQUIRED IF CHECKED ☐). At all times during the performance of the Services, Implementer represents, warrants and covenants that it has and shall obtain and maintain, at its sole cost and expense, all bonding requirements of the California Contractors State License Board ("CSLB"), as may be applicable. Regardless of the specific Services provided, Implementer shall also maintain any payment and/or performance assurances as may be requested by MCE during the performance of the Services.

5.6. SAFETY (REQUIRED IF CHECKED ☒)**.** At all times during the performance of the Services, Implementer represents, warrants and covenants that it shall:

(a) abide by all applicable federal and state Occupational Safety and Health Administration requirements and other applicable federal, state, and local rules, regulations, codes and ordinances to safeguard persons and property from injury or damage;

(b) abide by all applicable MCE security procedures, rules and regulations that have been provided to Implementer and cooperate with MCE security personnel whenever on MCE's property;

(c) abide by MCE's standard safety program contract requirements as may be provided by MCE to Implementer from time to time;

(d) provide all necessary training to its employees, and require Subcontractors to provide training to their employees, about the safety and health rules and standards required under this Agreement;

(e) have in place an effective Injury and Illness Prevention Program that meets the requirements all applicable laws and regulations, including but not limited to Section 6401.7 of the California Labor Code. Additional safety requirements (including MCE's standard safety program contract requirements) are set forth elsewhere in the Agreement, as applicable, and in MCE's safety handbooks as may be provided by MCE to Implementer from time to time;

(f) be responsible for initiating, maintaining, monitoring and supervising all safety precautions and programs in connection with the performance of the Agreement; and

(g) monitor the safety of the job site(s), if applicable, during the performance of all Services to comply with all applicable federal, state, and local laws and to follow safe work practices.

5.7. BACKGROUND CHECKS (REQUIRED IF CHECKED ☒)**.**

(a) Implementer hereby represents, warrants and covenants that any employees, members, officers, contractors, Subcontractors and agents of Implementer (each, a "Implementer Party," and, collectively, the "Implementer Parties") having or requiring access to MCE's assets, premises, customer property, data or systems ("Covered Personnel") shall have successfully passed background screening on each such individual, prior to receiving access, which screening may include, among other things to the extent applicable to the Services, a screening of the individual's educational background, employment history, valid driver's license, and court record for the seven (7) year period immediately preceding the individual's date of assignment to perform the Services.

(b) Notwithstanding the foregoing and to the extent permitted by applicable law, in no event shall Implementer permit any Covered Personnel to have one or more convictions during the seven (7) year period immediately preceding the

individual's date of assignment to perform the Services, or at any time after the individual's date of, assignment to perform the Services, for any of the following ("Serious Offense"): (i) a "serious felony," similar to those defined in California Penal Code Sections 1192.7(c) and 1192.8(a), or a successor statute, or (ii) any crime involving fraud (such as, but not limited to, crimes covered by California Penal Code Sections 476, 530.5, 550, and 2945, California Corporations Code 25540), embezzlement (such as, but not limited to, crimes covered by California Penal Code Sections 484 and 503 et seq.), or racketeering (such as, but not limited to, crimes covered by California Penal Code Section 186 or the Racketeer Influenced and Corrupt Organizations ("RICO") Statute (18 U.S.C. Sections 1961-1968)).

(c) To the maximum extent permitted by applicable law, Implementer shall maintain documentation related to such background for all Covered Personnel and make it available to MCE for audit if required pursuant to the audit provisions of this Agreement.

(d) To the extent permitted by applicable law, Implementer shall notify MCE if any of its Covered Personnel is charged with or convicted of a Serious Offense during the term of this Agreement. Implementer shall also immediately prevent that employee, representative, or agent from performing any Services.

5.8. FITNESS FOR DUTY (REQUIRED IF CHECKED ☒)**.** Implementer shall ensure that all Covered Personnel report to work fit for their job. Covered Personnel may not consume alcohol while on duty and/or be under the influence of drugs or controlled substances that impair their ability to perform the Services properly and safely. Implementer shall, and shall cause its Subcontractors to, have policies in place that require their employees, contractors, subcontractors and agents to report to work in a condition that allows them to perform the work safely. For example, employees should not be operating equipment under medication that creates drowsiness.

5.9. QUALITY ASSURANCE PROCEDURES (REQUIRED IF CHECKED ☒). Implementer shall comply with "Quality Assurance Procedures" identified by Implementer in the implementation plan as required in Exhibit A. Additionally, Quality Assurance Procedures must include, but are not limited to: (i) industry standard best practices; (ii) procedures that ensure customer satisfaction; and (iii) any additional written direction from MCE.

5.10. ASSIGNMENT OF PERSONNEL. The Implementer shall not substitute any personnel for those specifically named in its proposal, if applicable, unless personnel with substantially equal or better qualifications and experience are provided, acceptable to MCE, as is evidenced in writing.

5.11. ACCESS TO CUSTOMER SITES (REQUIRED IF CHECKED ☒)**.** Implementer shall be responsible for obtaining any and all access rights for Implementer Parties, from customers and other third parties to the extent necessary to perform the Services. Implementer shall also procure any and all access rights from Implementer Parties, customers and other third parties in order for MCE and CPUC employees, representatives, agents, designees and contractors to inspect the Services.

6. INSURANCE:

At all times during the Term and the performance of Services, Implementer shall maintain the insurance coverages set forth below. All such insurance coverage shall be substantiated with a certificate of insurance and must be signed by the insurer or its representative evidencing such insurance to MCE. The general liability policy shall be endorsed naming Marin Clean Energy and its employees, officers and agents as additional insureds. The certificate(s) of insurance and required endorsement shall be furnished to MCE prior to commencement of Services. Implementer shall provide for thirty (30) days advance written notice to MCE of any cancellation or reduction in coverage. Said policies shall remain in force through the life of this Agreement and shall be payable on a per occurrence basis only, except those required by paragraph 7.4 which may be provided on a claims-made basis consistent with the criteria noted therein.

Nothing in this Section 7 shall be construed as a limitation on Implementer's obligations in Section 18 of this Agreement.

Should Implementer fail to provide and maintain the insurance required by this Agreement, in addition to any other available remedies ta law or in equity, MCE may suspend payment to the Implementer for any services provided during any time that insurance was not in effect and until such time as the Implementer provides adequate evidence that Implementer has obtained the required coverage.

6.1 GENERAL LIABILITY

The Implementer shall maintain a commercial general liability insurance policy in an amount of no less than one million dollars ($1,000,000) with a two million dollar ($2,000,000) aggregate limit. MCE shall be named as an additional insured on the commercial general liability policy and the Certificate of Insurance shall include an additional endorsement page. (see sample form: ISO - CG 20 10 11 85).

6.2 AUTO LIABILITY (REQUIRED IF CHECKED ☒).
Where the Services to be provided under this Agreement involve or require the use of any type of vehicle by Implementer in order to perform said Services, Implementer shall also provide comprehensive business or commercial automobile liability coverage including non-owned and hired automobile liability in the amount of one million dollars combined single limit ($1,000,000.00).

6.3 WORKERS' COMPENSATION
The Implementer acknowledges the State of California requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of the Labor Code. If Implementer has employees, a copy of the certificate evidencing such insurance or a copy of the Certificate of Consent to Self-Insure shall be provided to MCE prior to commencement of Services.

6.4 PROFESSIONAL LIABILITY INSURANCE *(REQUIRED IF CHECKED* ☒)
Implementer shall maintain professional liability insurance with a policy limit of not less than $1,000,000 per incident. If the deductible or self-insured retention amount exceeds $100,000, MCE may ask for evidence that Implementer has segregated amounts in a special insurance reserve fund or Implementer's general insurance reserves are adequate to provide the necessary coverage and MCE may conclusively rely thereon. Coverages required by this subsection may be provided on a claims-made basis with a "Retroactive Date" prior to the Effective Date. If the policy is on a claims-made basis, coverage must extend to a minimum of twelve (12) months beyond termination of this Agreement. If coverage is cancelled or non-renewed, and not replaced with another claims made policy form with a "retroactive date" prior to the Effective Date, the Implementer must purchase "extended reporting" coverage for a minimum of twelve (12) months after termination of this Agreement.

6.5 PRIVACY AND CYBERSECURITY LIABILITY (REQUIRED IF CHECKED ☒). Implementer shall maintain privacy and cybersecurity liability (including costs arising from data destruction, hacking or intentional breaches, crisis management activity related to data breaches, and legal claims for security breach, privacy violations, and notification costs) of at least $1,000,000 US per occurrence.

7. FINANCIAL STATEMENTS:

Implementer shall deliver financial statements on an annual basis or as may be reasonably requested by MCE from time to time. Such financial statements or documents shall be for the most recently available audited or reviewed period and prepared in accordance with generally-accepted accounting principles. MCE shall keep such information confidential pursuant to the Confidentiality Agreement between the parties, March 20, 2019, except as provided by law and to provision to the CPUC may be required from time to time under confidentiality procedures, where applicable.

8. SUBCONTRACTING:

Implementer shall not subcontract nor assign any portion of the work required by this Agreement without prior written approval of MCE except for any subcontract work identified in Exhibit A. If Implementer hires a subcontractor under this Agreement (a "Subcontractor"), Subcontractor shall be bound by all applicable terms and conditions of this Agreement, and Implementer shall ensure the following:

8.1. Subcontractor shall comply with the following terms of this Agreement: Sections 9, 10, each Statement of Work and any attachments thereto.

8.2. Subcontractor shall provide, maintain and be bound by the representations, warranties and covenants of Implementer contained in Section 5 hereof (as may be modified to be applicable to Subcontractor with respect to Section 5.1(a) hereof) at all times during the Term of such subcontract and its provision of Services.

8.3. Subcontractor shall comply with the terms of Section 6 above, including, but not limited to providing and maintaining insurance coverage(s) identical to what is required of Implementer under this Agreement, and shall name MCE as an additional insured under such policies. Implementer shall collect, maintain, and promptly forward to MCE current evidence of such insurance provided by its Subcontractor. Such evidence of insurance shall be included in the records and is therefore subject to audit as described in Section 9 hereof.

8.4. Subcontractor shall be contractually obligated to indemnify the MCE Parties (as defined in Section 17 hereof) pursuant to the terms and conditions of Section 17 hereof.

8.5. Subcontractors shall not be permitted to further subcontract any obligations under this Agreement.

Implementer shall be solely responsible for ensuring its Subcontractors' compliance with the terms and conditions of this Agreement made applicable above and to collect and maintain all documentation and current evidence of such compliance. Upon request by MCE,

Implementer shall promptly forward to MCE evidence of same. Nothing contained in this Agreement or otherwise stated between the Parties shall create any legal or contractual relationship between MCE and any Subcontractor, and no subcontract shall relieve Implementer of any of its duties or obligations under this Agreement. Implementer's obligation to pay its Subcontractors is an independent obligation from MCE's obligation to make payments to Implementer. As a result, MCE shall have no obligation to pay or to enforce the payment of any monies to any Subcontractor.

9. RETENTION OF RECORDS AND AUDIT PROVISION:

Implementer shall keep and maintain on a current basis full and complete documentation pertaining to this Agreement and the Services, whether stored electronically or otherwise, including, but not limited to, valuation records, accounting records, documents supporting all invoices, employee' time sheets, receipts and expenses, and all customer documentation and correspondence (the "Records"). MCE shall have the right, during regular business hours and upon providing reasonable advance notice, to review and audit all records relating to this Agreement during the Term and for at least five (5) years from the date of the completion or termination of this Agreement. Any review or audit may be conducted with an escort on Implementer's premises or, at MCE's option, Implementer shall provide all records within a maximum of fifteen (15) days upon receipt of written notice from MCE. Implementer shall refund any monies erroneously charged. Implementer shall have an opportunity to review and respond to or refute any report or summary of audit findings, and shall promptly refund any overpayments made by MCE based on undisputed audit findings.

10. DATA, CONFIDENTIALITY AND INTELLECTUAL PROPERTY:

10.1. DEFINITION OF "MCE DATA". "MCE Data" shall mean all data or information provided by or on behalf of MCE, including but not limited to, customer Personal Information; energy usage data relating to, of, or concerning, provided by or on behalf of any customers; all data or information input, information systems and technology, software, methods, forms, manuals, and designs, transferred, uploaded, migrated, or otherwise sent by or on behalf of MCE to Implementer as MCE may approve of in advance and in writing (in each instance); account numbers, forecasts, and other similar information disclosed to or otherwise made available to Implementer. MCE Data shall also include all data and materials provided by or made available to Implementer by MCE's licensors, including but not limited to, any and all survey responses, feedback, and reports subject to any limitations or restrictions set forth in the agreements between MCE and their licensors.

"Confidential Information" under this Agreement shall have the same meaning as defined in the Marin Clean Energy Non-Disclosure Agreement between the parties dated **March 20, 2019**.

10.2. DEFINITION OF "PERSONAL INFORMATION". "Personal Information" includes but is not limited to the following: personal and entity names, e-mail addresses, addresses, phone numbers, any other public or privately-issued identification numbers, IP addresses, MAC addresses, and any other digital identifiers associated with entities, geographic locations, users, persons, machines or networks. Implementer shall comply with all applicable laws, rules, and regulations related to the use, collection, storage, and transmission of Personal Information.

10.3. MCE DATA SECURITY MEASURES. Prior to Implementer receiving any MCE Data, Implementer shall comply, and at all times thereafter continue to comply, in compliance with MCE's Data security policies set forth in MCE Policy 009 and MCE's Advanced Metering Infrastructure (AMI) Data Security and Privacy Policy ("Security Measures") and pursuant to MCE's Confidentiality provisions in Section 5 of the Marin Clean Energy Non-Disclosure Agreement between the parties dated **March 20, 2019** and as set forth in MCE Policy 001 - Confidentiality**.** MCE's Security Measures and Confidentiality provisions require Implementer to adhere to reasonable administrative, technical, and physical safeguard protocols to protect the MCE's Data from unauthorized handling, access, destruction, use, modification or disclosure.

10.4. IMPLEMENTER DATA SECURITY MEASURES. Additionally, Implementer shall, at its own expense, adopt and continuously implement, maintain and enforce reasonable technical and organizational measures, consistent with the sensitivity of Personal Information and Confidential Information including, but not limited to, measures designed to (1) prevent unauthorized access to, and otherwise physically and electronically protect, the Personal Information and Confidential Information, and (2) protect MCE content and data against unauthorized or unlawful access, disclosure, alteration, loss, or destruction.

10.5. RETURN OF MCE DATA. Promptly after this Agreement or a Statement of Work terminates or expires, and for each completed Statement of Work (i) Implementer will securely destroy all MCE Data in its possession with respect to each terminated or expired Statement of Work and if requested, certify the secure destruction in writing to MCE, and (ii) each party will return (or if requested by the disclosing party, destroy) all other Confidential Information and property of the other (if any) with respect to each terminated or expired Statement of Work, provided that Implementer's attorney shall be permitted to retain a copy of such records or materials solely for legal purposes. Consistent with provisions in Section 5 of the Marin Clean Energy Non-Disclosure Agreement between the parties dated **March 20, 2019**, and to the extent permitted by law, parties

shall not be obligated to return, destroy or delete Confidential Information or MCE Data to the extent that the Confidential Information or MCE Data is stored by electronic back-up systems.

10.6. OWNERSHIP AND USE RIGHTS.

a) **MCE Data.** Unless otherwise expressly agreed to by the Parties, MCE shall retain all of its rights, title and interest in MCE's Data.

b) **Program Intellectual Property.** Unless otherwise expressly agreed to by the Parties, any and all finished or unfinished materials, information, or other intellectual property created, prepared, accumulated or developed by Implementer or any Implementer Party under this Agreement with Program funds ("Program Intellectual Property"), including finished and unfinished inventions, processes, templates, documents, other writings, drawings, computer programs, designs, calculations, valuations, maps, plans, workplans, text, filings, estimates, manifests, certificates, books, specifications, sketches, notes, reports, summaries, analyses, studies, manuals, visual materials, data models and samples, including summaries, extracts, analyses and preliminary or draft materials developed in connection therewith, shall be owned solely by MCE upon its creation on behalf and for the benefit of MCE's respective customers.

c) **Program Intellectual Property will be owned by MCE upon its creation.** Implementer agrees to execute any such other documents or take other actions as MCE may reasonably request to perfect MCE's ownership in the Program Intellectual Property. MCE shall have the exclusive right to use such Program Intellectual Property in its sole discretion and without further compensation to Implementer (beyond the compensation set forth in this Agreement) or to any other party. Implementer shall, at MCE's expense, provide such Program Intellectual Property to MCE or to any party MCE may designate upon written request. Implementer may keep file reference copies of all documents prepared for MCE.

d) **Implementer's Pre-Existing Materials.** If, and to the extent Implementer retains any preexisting ownership rights ("Implementer's Pre-Existing Materials") in any of the materials furnished to be used to create, develop, and prepare the Program Intellectual Property, Implementer hereby grants MCE and the Program Participants on behalf of their respective customers and the CPUC for governmental and regulatory purposes an irrevocable, assignable, non-exclusive, perpetual, fully paid up, worldwide, royalty-free, unrestricted license to use and sublicense others to use, reproduce, display, prepare and develop derivative works, perform, distribute copies of any intellectual or proprietary property right of Implementer or any Implementer Party for the sole purpose of using such Program Intellectual Property for the conduct of MCE's business and for disclosure to the CPUC for governmental and regulatory purposes related thereto (the "MCE License"). Unless otherwise expressly agreed to by the Parties, Implementer shall retain all of its rights, title and interest in Implementer's Pre-Existing Materials. Any and all claims to Implementer's Pre-Existing Materials to be furnished or used to prepare, create, develop or otherwise manifest the Program Intellectual Property must be expressly disclosed to MCE prior to performing any Services under this Agreement. Any such Pre-Existing Material that is modified by work under this Agreement is owned by MCE with the exception of process changes to Implementer's software systems, workflows and templates associated with its DSMT and Quickbase Platforms and SharePoint infrastructure or revisions to Implementer's pre-existing SEM templates, customer training materials, NMEC calculator tools, engineering models, energy assessment reports and Joint Energy Efficiency Plan templates that are modified in a general manner so as to apply to work product for other clients of Implementer ("Generally-Applicable Modifications to Pre-Existing Materials"). Generally-Applicable Modifications to Pre-Existing Materials do not include modifications that are customized for MCE or its customers. For the avoidance of doubt, the MCE License shall also apply to Generally-Applicable Modifications to Pre-Existing Materials.

10.7. EQUITABLE RELIEF. Each Party acknowledges that a breach of this Section 10 would cause irreparable harm and significant damages to the other Party, the degree of which may be difficult to ascertain. Accordingly, each Party agrees that MCE shall have the right to obtain immediate equitable relief to enjoin any unauthorized use or disclosure of MCE Data or Personal Information, in addition to any other rights and remedies that it may have at law or otherwise; and Implementer shall have the right to obtain immediate equitable relief to enjoin any unauthorized use or disclosure of Implementer's Pre-Existing Materials, in addition to any other rights and remedies that it may have at law or otherwise.

11. FORCE MAJEURE:

A Party shall be excused for failure to perform its obligations under this Agreement if such obligations are prevented by an event of Force Majeure (as defined below), but only for so long as and to the extent that the Party claiming Force Majeure ("Claiming Party") is actually so prevented from performing and provided that (a) the Claiming Party gives written notice and full particulars of such Force Majeure to the other Party (the "Affected Party") promptly after the occurrence of the event relied on, (b) such notice includes an estimate of the expected duration and probable impact on the performance of the Claiming Party's obligations under this Agreement, (c) the Claiming Party furnishes timely regular reports regarding the status of the Force Majeure, including updates with respect to the data included in Section 10 above during the continuation of the delay in the Claiming Party's performance, (d) the suspension of such obligations sought by Claiming Party is of no greater scope and of no longer duration than is required by the Force Majeure, (e) no obligation or liability of

either Party which became due or arose before the occurrence of the event causing the suspension of performance shall be excused as a result of the Force Majeure; (f) the Claiming Party shall exercise commercially reasonable efforts to mitigate or limit the interference, impairment and losses to the Affected Party; (g) when the Claiming Party is able to resume performance of the affected obligations under this Agreement, the Claiming Party shall give the Affected Party written notice to that effect and promptly shall resume performance under this Agreement. "Force Majeure" shall mean acts of God such as floods, earthquakes, fires, orders or decrees by a governmental authority, civil or military disturbances, wars, riots, terrorism or threats of terrorism, utility power shutoffs, strikes, labor disputes, pandemic, or other forces over which the responsible Party has no control and which are not caused by an act or omission of such Party.

12. TERMINATION:

12.1. If Implementer fails to provide in any manner the Services required under this Agreement or otherwise fails to comply with the terms of this Agreement or violates any Applicable Law, makes an assignment of any general arrangement for the benefit of creditors, files a petition or otherwise commences, authorizes or acquiesces in the commencement of a proceeding or cause under any bankruptcy or similar law for the protection of creditors, or has such petition filed against it, otherwise becomes bankrupt or insolvent (however evidenced), or becomes unable to pay its debts as they fall due, then MCE may terminate this Agreement by giving ten (10) business days' written notice to Implementer.

12.2. Either Party hereto may terminate this Agreement for any reason by giving thirty (30) calendar days' written notice to the other Party. Notice of termination shall be by written notice to the other parties and be sent by registered mail or by email to the email address listed in Section 19 Invoices; Notices.

12.3. In the event of termination not the fault of Implementer, Implementer shall be paid for Services performed to the date of termination in accordance with the terms of this Agreement so long as proof of required insurance is provided for the periods covered in the Agreement or Amendment(s). Notwithstanding anything contained in this Section 12, in no event shall MCE be liable for lost or anticipated profits or overhead on uncompleted portions of the Services. Implementer shall not enter into any agreement, commitments or subcontracts that would incur significant cancelation or termination costs without prior written approval of MCE, and such written approval shall be a condition precedent to the payment of any cancellation or termination charges by MCE under this Section 12. Also, as a condition precedent to the payment of any cancellation or termination charges by MCE under this Section 12, Implementer shall have delivered to MCE any and all reports, drawings, documents and deliverables prepared for MCE before the effective date of such termination.

12.4. Without limiting the foregoing, if either Party's activities hereunder become subject to law or regulation of any kind, which renders the activity illegal, unenforceable, or which imposes additional costs on such Party for which the parties cannot mutually agree upon an acceptable price modification, then such Party shall at such time have the right to terminate this Agreement upon written notice to the other Party with respect to the illegal, unenforceable, or uneconomic provisions only, and the remaining provisions will remain in full force and effect.

12.5. Notwithstanding the foregoing, this Agreement shall be subject to changes, modifications, or termination by order or directive of the California Public Utilities Commission ("CPUC"). The CPUC may from time to time issue an order or directive relating to or affecting any aspect of this Agreement, in which case MCE shall have the right to change, modify or terminate this Agreement in any manner to be consistent with such CPUC order or directive by providing written notice to Implementer at least ten (10) business days before such change takes effect, unless an order or directive issued by the CPUC requires changes take effect earlier than this notice and at such time MCE will provide notice as early as possible. MCE may also terminate this Agreement if funding for this Agreement is reduced or eliminated by a third-party funding source.

12.6. Upon MCE's termination of this Agreement for any reason, Implementer shall, and shall cause Implementer or each of its employees, agents, representatives, and subcontractors and all other persons performing the Services on behalf of Implementer (each, an Implementer Party), to bring the Services to an orderly conclusion as directed by MCE. Implementer and each Implementer Party shall vacate the worksite but shall not remove any material, plant or equipment thereon without the approval of MCE. MCE, at its option, may take possession of any portion of the Services paid for by MCE.

12.7. Notwithstanding any provision herein to the contrary, Sections 2, 3, 8.4, 9, 10, 12, 15, 16, 17, 18, 19, 20, 21, 22, 24, Exhibit B of this Agreement shall survive the termination or expiration of this Agreement.

13. ASSIGNMENT:

The rights, responsibilities and duties under this Agreement are personal to the Implementer and may not be transferred or assigned without the express prior written consent of MCE, which shall not be unreasonably withheld.

14. AMENDMENT; NO WAIVER:

This Agreement may be amended or modified only by written agreement of the Parties. Failure of either Party to enforce any provision or provisions of this Agreement will not waive any enforcement of any continuing breach of the same provision or provisions or any breach of any provision or provisions of this Agreement.

15. DISPUTES:

Either Party may give the other Party written notice of any dispute which has not been resolved at a working level. Any dispute that cannot be resolved between Implementer's contract representative and MCE's contract representative by good faith negotiation efforts

shall be referred to Legal Counsel of MCE and an officer of Implementer for resolution. Within 20 calendar days after delivery of such notice, such persons shall meet at a mutually acceptable time and place, and thereafter as often as they reasonably deem necessary to exchange information and to attempt to resolve the dispute. If MCE and Implementer cannot reach an agreement within a reasonable period of time (but in no event more than 30 calendar days), MCE and Implementer shall have the right to pursue all rights and remedies that may be available at law or in equity. In particular, Implementer shall have right to request arbitration or mediation to resolve the dispute and MCE shall be required to participate in arbitration or mediation in good faith. All negotiations and any mediation agreed to by the Parties are confidential and shall be treated as compromise and settlement negotiations, to which Section 1119 of the California Evidence Code shall apply, and Section 1119 is incorporated herein by reference.

16. JURISDICTION AND VENUE:

This Agreement shall be construed in accordance with the laws of the State of California and the Parties hereto agree that venue shall be in Marin County, California.

17. INDEMNIFICATION:

To the fullest extent permitted by Applicable Law, Implementer shall indemnify, defend, and hold MCE, its employees, officers, and agents ("MCE Parties"), harmless from any and all actions, claims, liabilities, losses, costs, damages and expenses (including, but not limited to, litigation costs, attorney's fees and costs, physical damage to or loss of tangible property, and injury or death of any person) arising out of, resulting from, or caused by: a) the negligence, recklessness, intentional misconduct, fraud of all Implementer Parties; b) the failure of an Implementer Party to comply with the provisions of this Agreement or Applicable Law; or c) any defect in design, workmanship, or materials carried out or employed by any Implementer Party.

18. NO RECOURSE AGAINST CONSTITUENT MEMBERS OF MCE:

MCE is organized as a Joint Powers Authority in accordance with the Joint Exercise of Powers Act of the State of California (Government Code Section 6500, et seq.). Pursuant to MCE's Joint Powers Agreement, MCE is a public entity separate from its constituent members. MCE shall solely be responsible for all debts, obligations and liabilities accruing and arising out of this Agreement. Implementer shall have no rights and shall not make any claims, take any actions or assert any remedies against any of MCE's constituent members in connection with this Agreement.

19. INVOICES; NOTICES:

This Agreement shall be managed and administered on MCE's behalf by the Contract Manager named below. All invoices shall be submitted by email to:

Email Address:	invoices@mcecleanenergy.org

All other notices shall be given to MCE at the following location:

Contract Manager:	Troy Nordquist
MCE Address:	1125 Tamalpais Avenue
	San Rafael, CA 94901
Email Address:	contracts@mcecleanenergy.org
Telephone No.:	(415) 464-6027

Notices shall be given to Implementer at the following address:

Implementer:	CLEAResult Consulting Inc. Attn: Legal Department
Address:	100 SW Main Street, Suite 1500
	Portland, OR 97204

Email Address:

Telephone No.: 503-248-4636

20. ACKNOWLEDGEMENT OF EXHIBITS:

In the event of a conflict between the Terms of this Agreement and the terms in any of the following Exhibits, the terms in this Agreement will govern.

	☒	*Check applicable Exhibits*	IMPLEMENTER'S INITIALS
EXHIBIT A.	☒	**Form of Statement or Work**	DS
EXHIBIT B.	☒	**Fees and Payment**	DS
EXHIBIT C.	☒	**Energy Efficiency Program Terms**	DS
Schedule A.1	☒	**Statement of Work for MCE's Industrial, Agricultural and Commercial Sectors**	DS
Schedule A.2	☒	**Statement of Work for MCE Multifamily Residential Sector**	DS
Appendix A.	☒	**Implementation Plan Template**	DS
Appendix B.	☒	**California Industrial SEM M&V Guide**	DS

21. SEVERABILITY:

Should any provision of this Agreement be held invalid or unenforceable by a court of competent jurisdiction, such invalidity will not invalidate the whole of this Agreement, but rather, the remainder of the Agreement which can be given effect without the invalid provision, will continue in full force and effect and will in no way be impaired or invalidated.

22. INDEPENDENT CONTRACTOR:

Implementer is an independent contractor to MCE hereunder. Nothing in this Agreement shall establish any relationship of partnership, joint venture, employment or franchise between MCE and any Implementer Party. Neither MCE nor any Implementer Party will have the power to bind the other or incur obligations on the other's behalf without the other's prior written consent, except as otherwise expressly provided for herein.

23. TIME:

Time is of the essence in this Agreement and each and all of its provisions.

24. THIRD PARTY BENEFICIARIES:

The Parties agree that there are no third-party beneficiaries to this Agreement either express or implied.

25. FURTHER ACTIONS:

The Parties agree to take all such further actions and to execute such additional documents as may be reasonably necessary to effectuate the purposes of this Agreement.

26. PREPARATION OF AGREEMENT:

This Agreement was prepared jointly by the Parties, each Party having had access to advice of its own counsel, and not by either Party to the exclusion of the other Party, and this Agreement shall not be construed against either Party as a result of the manner in which this Agreement was prepared, negotiated or executed.

27. COMPLETE AGREEMENT:

This Agreement along with any attached Exhibits and Statements of work constitutes the entire Agreement between the parties. No modification or amendment shall be valid unless made in writing and signed by each party. Failure of either party to enforce any provision

or provisions of this Agreement will not waive any enforcement of any continuing breach of the same provision or provisions or any breach of any provision or provisions of this Agreement.

28. COUNTERPARTS:

This Agreement may be executed in one or more counterparts each of which shall be deemed an original and all of which shall be deemed one and the same Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement on the date first above written.

APPROVED BY

Marin Clean Energy:

DocuSigned by:
By: Dawn Weisz
A59878416EBC4F8...

Name: Dawn Weisz

Title: CEO

Date: 9/20/2021

DocuSigned by:
By: DEVIN TRE MURPHY
7FFB8D80B38A4FB...

Chairperson

Date: 9/17/2021

Implementer:

DocuSigned by:
By: Andrea White
8E542A5E4B6F4EA...

Name: Andrea White

Title: Vice President, West & Lakes

Date: 9/21/2021

MODIFICATIONS TO ENERGY EFFICIENCY STANDARD SHORT FORM

☒ **Standard Short Form Content Has Been Modified**

List sections affected: Sections 2, 5.6(b), 5.7 (a) and (c), 6, 7, 9, 10.5 10.6(b), (c), and (d), 12, 15, 27

Approved by MCE Counsel: DocuSigned by: Catalina Murphy 0CC3FD724F79482... **Date:** 9/22/2021

Exhibit A
Form of Statement of Work

Schedule A.__
Statement of Work for [Describe Work]

This Schedule A.__ is entered into on **[Date]** pursuant to the Master Services Agreement between MARIN CLEAN ENERGY, hereinafter referred to as "MCE", and CLEARESULT CONSULTING INC., hereinafter referred to as "Implementer", dated **September 3, 2021** ("MSA").

The First Agreement between MCE and Implementer dated March 21, 2019 is terminated as of September 3, 2021.

Implementer shall provide the following Services under the Agreement as requested and directed by MCE staff, up to the maximum time/fees allowed under this Agreement:

[List scope of services]

Attached as **Attachment __** is the technical scope of work for this request.

Billing:
Implementer shall bill monthly and according to the rate schedule listed in Exhibit B of the Master Services Agreement dated **DATE**. In no event shall the total cost to MCE for the services provided under this Statement of Work exceed the maximum sum of **$0,000** for the term of the Agreement.

Term of Statement of Work:
This Statement of Work shall commence on **September 3, 2021** and shall terminate on **December 31, 2021**.

IN WITNESS WHEREOF, the parties have executed this Statement of Work – Schedule A.1 on the date first above written.

APPROVED BY **Marin Clean Energy:**	**Implementer:**
By: _____	By: _____
Name: _____	Name: _____
Date: _____	Date: _____
By: _____ Chairperson	
Date: _____	

EXHIBIT B
FEES AND PAYMENT

For services provided under this Agreement, MCE shall pay Implementer in accordance with the rate schedule as specified below and in accordance with the payment structure listed in a Statement of Work:

- Performance Rates and Customer Incentives are determined by the payment structure listed in a Statement of Work

- Marketing support services will be charged at the personnel hourly rates listed below:

Title:	Rate:
Marketing Account Manager	$137
Creative Director	$202
Graphic Designer	$98
Copywriter	$112
Web Developer	$159
Senior Program Manager	$181
Account Manager	$109

EXHIBIT C
Energy Efficiency Program Terms

The terms below are additional terms and conditions for programs under this Agreement.

1. BILLING, ENERGY USE, AND PROGRAM TRACKING DATA *(REQUIRED IF CHECKED* ☒**).**

a) Contractor shall comply with and timely cooperate with all CPUC directives, activities, and requests regarding the Program and Project evaluation, measurement, and verification ("EM&V"). For the avoidance of doubt, it is the responsibility of Contractor to be aware of all CPUC requirements applicable to the Services of this Agreement.
b) Contractor shall make available to MCE upon demand, detailed descriptions of the program, data tracking systems, baseline conditions, and participant data, including financial assistance amounts.
c) Contractor shall make available to MCE any revisions to Contractor's program theory and logic model ("PTLM") and results from its quality assurance procedures, and comply with all MCE EM&V requirements, including reporting of progress and evaluation metrics.

2. WORKFORCE STANDARDS *(REQUIRED IF CHECKED* ☒).

At all times during the Term of the Agreement, Contractor shall comply with, and shall cause all Contractor Parties to comply with, the workforce qualifications, certifications, standards and requirements set forth in this Exhibit D, Section 2 ("Workforce Standards"). The Workforce Standards shall be included in their entirety in MCE's Final Implementation Plan. If applicable, "Final Implementation Plan" is defined in the deliverables for the Services listed in Exhibit A. Prior to commencement of any Services, once per calendar year, and at any other time as may be requested by MCE, Contractor shall provide all documentation necessary to demonstrate to MCE's reasonable satisfaction that Contractor has complied with the Workforce Standards.

2.1. HVAC STANDARDS *(REQUIRED IF CHECKED* ☒). For any non-residential project pursuant to this Agreement installing, modifying or maintaining a Heating Ventilation and Air Conditioning ("HVAC") system or component with incentives valued at $3,000 or more, Contractor shall ensure that each worker or technician involved in the project, including all employees and agents of its Subcontractors, meets at least one of the following workforce criteria:

a) Completed an accredited HVAC apprenticeship;
b) Is enrolled in an accredited HVAC apprenticeship;
c) Completed at least five years of work experience at the journey level as defined by the California Department of Industrial Relations, Title 8, Section 205, of the California Code of Regulations, passed a practical and written HVAC system installation competency test, and received credentialed training specific to the installation of the technology being installed; or
d) Has a C-20 HVAC contractor license issued by the California Contractor's State Licensing Board.

This standard shall not apply where the incentive is paid to any manufacturer, distributor, or retailer of HVAC equipment, unless the manufacturer, distributor, or retailer installs or contracts for the installation of the equipment.

2.2. ADVANCED LIGHTING CONTROLS STANDARDS *(REQUIRED IF CHECKED* ☒**).** For any non-residential project pursuant to this Agreement involving installation, modification, or maintenance of lighting controls with incentives valued at $2,000 or more, Contractor shall ensure that all workers or technicians involved in the project, including those of its Subcontractors are certified by the California Advanced Lighting Controls Training Program ("CALTP"). This requirement shall not apply where the incentive is paid to a manufacturer, distributor, or retailer of lighting controls unless the manufacturer, distributor, or retailer installs or contracts for installation of the equipment.

3. COORDINATION WITH OTHER PROGRAM ADMINISTRATORS *(REQUIRED IF CHECKED* ☒**).**

Contractor shall coordinate with other Program Administrators, including investor-owned utilities and local government agencies authorized by the CPUC to implement CPUC-directed energy efficient programs, administering energy efficiency programs in the same geographic area as MCE. These other Program Administrators include: Pacific Gas and Electric Company and Bay Area Regional Energy Network. The CPUC may develop further rules related to coordination between Program Administrators in the same geographic area, and any Contractor is required to comply with such rules.

4. MEASUREMENT AND VERIFICATION REQUIREMENTS, INCLUDING GUIDELINES ABOUT NORMALIZED METERED ENERGY CONSUMPTION ("NMEC") DESIGN REQUIREMENTS *(REQUIRED IF CHECKED* ☒).

Contractor shall:

1. Only enroll customers that qualify for Program services.

2. Comply with current policies, procedures, and other required documentation as required by MCE;
3. Report Customer Participation Information to MCE.
4. Work with MCE's evaluation team to define Program-specific data collection and evaluability requirements, and in the case of NMEC which independent variables shall be normalized.

Throughout the Term, MCE may identify new net lifecycle energy savings estimates, net-to- gross ratios, effective useful lives, or other values that may alter Program Net Lifecycle Energy Savings, as defined in Exhibit A, if applicable. Contractor shall use modified values upon MCE's request, provided MCE modifies Contractor's Program budget and/or overall Program net lifecycle Energy Savings consistent with the requested change. MCE shall determine any budget increases or decreases in its sole discretion.

For Programs claiming to-code savings: Contractor shall comply with Applicable Law and work with MCE to address elements in its Program designs and Implementation Plans, such as:

1. Identifying where to-code savings potential resides;
2. Specifying which equipment types, building types, geographic allocations, and/or customer segments promise cost-effective to-code savings;
3. Describing the barriers that prevent code-compliant equipment replacements;
4. Explaining why natural turnover is not occurring within certain markets or for certain technologies; and
5. Detailing the program interventions that would effectively accelerate equipment turnover.

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STATEMENT OF WORK

Schedule A.1
Statement of Work for MCE Agricultural, Industrial and Commercial Sectors

This Schedule A.1 ("Agreement") is entered into on **September 3, 2021** pursuant to the Master Services Agreement between MARIN CLEAN ENERGY, hereinafter referred to as "MCE", and CLEARESULT CONSULTING INC., hereinafter referred to as "Implementer", dated **September 3, 2021** ("MSA").

The First Agreement between MCE and Implementer dated March 21, 2019 is terminated as of September 3, 2021.

Implementer will provide the following Energy Efficiency Program services for MCE's Agricultural and Industrial sectors as directed by MCE staff, up to the maximum time and fees allowed under this Agreement. As requested and directed by MCE staff, Implementer will also serve MCE Commercial customers, in which projects will be approved individually by MCE staff.

I. Overview:

Implementer will offer comprehensive solutions for delivering electric and gas energy efficiency savings, serving the Agricultural and Industrial customer base in MCE's service territory. Implementer may also serve MCE customers in the Commercial sector, with a limited scope of services described under Section IV below and at the direction of MCE staff.

Implementer will develop and implement the Agricultural and Industrial Energy Efficiency programs ("the Programs") consistent with the outlines developed in program-specific Implementation Plans (see III below, Appendix A).

II. Goals and Targets:

Savings goals and Implementer's operating budget (performance payments and customer incentive budgets) for each year or years will be finalized through the Bi-Annual Budget Advice Letter, or other Advice Letter requesting ratepayer funding. Implementer will adhere to the program budgets outlined by MCE following the approval of an Advice Letter for each funding cycle.

Implementer may also serve commercial customers within MCE's service area as directed by MCE. See Section IV below for details on this service.

III. Agricultural and Industrial Program Services:

Implementer will provide comprehensive Program design, project development and Program implementation services, including but not limited to:

a. Program Design and Measure Development

Implementer will work with MCE on an ongoing basis to improve Program designs. This will include, but is not limited to: identifying and vetting energy efficiency measures; setting incentive and/or rebate levels based on budgets approved by MCE; selecting savings calculation methods; and determining intervention strategies.

Implementer may utilize deemed, custom, Strategic Energy Management ("SEM"), and Normalized Metered Energy Consumption ("NMEC") savings analyses and claims. Implementer will select the savings methodology which maximizes accuracy of the savings claim and customer benefit. Implementer will adhere to the most up-to-date guidance from the California Public Utilities Commission ("CPUC") in developing the Programs and specific projects.

With support from MCE staff, Implementer will make updates (if applicable) to the Implementation Plans per CPUC requirements for the Programs. Implementer will complete initial drafts of the document, as well as inputs for the Total Resource Cost and Program Administrator Cost calculations to inform cost-effectiveness forecasts. The template for Implementation Plans is attached to the MSA as Appendix A.

Implementer will provide cost-effectiveness forecasts as needed in support of MCE's requests for ratepayer funding.

b. Implementation Documentation Activities

Implementer will implement the Programs to eligible customers within MCE service territory.

Implementer will lead the development and maintenance of a Program Policies Manual – a required component of the Implementation Plans – to be used by Implementer and MCE to provide guidance around common processes and procedures encountered during the course of Program implementation, including:

- Eligible Measures
- Customer Eligibility Requirements
- Contractor Eligibility Requirements
- Program services such as training, specification, installation oversight, measurement and verification ("M&V")
- Audit procedures

Implementer will maintain and utilize a document or matrix which summarizes additional customer opportunities beyond the core MCE Program. The opportunities listed in the document shall include information summarizing eligibility standards for customer financing, renewable energy, and water efficiency programs or opportunities that may be presented to customers together with MCE's energy efficiency project proposals.

c. Customer Recruitment and Enrollment

Implementer will use data provided by MCE along with best practice parameters to target, recruit, and enroll customers in the Programs. Recruitment may include, but is not limited to: coordination with MCE and PG&E representatives; customer marketing and outreach; vendor engagement; and industry trade association event attendance and coordination.

d. Project Development and Project Engineering

Implementer will perform project engineering for each applicable customer project ("Project") which may include, but is not limited to: engineering assessments; energy savings and Project financial assessments; Project data analysis and calculations; Project evaluation; Project site surveys and assessments; and M&V. Implementer will provide customers with estimated savings summaries and/or reports for each Project, to address customer-specific needs such as payback estimates, annual energy savings estimates, operational improvements, and financing resources.

e. Project Application Review, Validation, and Submittal

Implementer will maintain customer application documents and calculators for use throughout the Programs. Implementer will compile, review, and validate customer Project applications prior to submitting to MCE for payment. Any Project submitted for incentive payment must also be submitted as part of the monthly and quarterly energy savings claim (see below).

A subset of all deemed Projects and measures must be selected for post-installation review. Custom Projects will be audited both pre-installation and post-installation to verify accuracy of savings claims. SEM and NMEC Projects will adhere to CPUC guidance on the validation of savings claims.

i. Savings Claims Reporting and Invoicing

Implementer will submit net and gross monthly energy savings and year-to-date energy savings claims data on a monthly basis for each Project, following the submittal of an application for incentive payment. Monthly reporting documentation will include:

- Monthly invoice;
- Monthly reporting, including net energy savings (kWh, kW reduction, therms) and year-to-date net energy savings;
- Monthly spend-to-date on Implementer expenditures;
- Monthly spend-to-date on dollar per unit (kwh and therm) in customer incentives;
- Project paperwork as required by MCE program managers.

f. M&V Plan and M&V

Implementer will provide an updated M&V Plan to serve as the basis for verification of savings claims. Implementer shall conduct all M&V activities in compliance with all CPUC orders and guidance.

Implementer will ensure that NMEC projects follow the most recent CPUC Rulebook on NMEC savings claims and embedded M&V for site-specific analyses and any additional guidance provided by MCE at the time of project initiation. For the avoidance of doubt, Implementer may rely on guidance from MCE provided at the time of project initiation, however NMEC projects must always follow the most recent CPUC Rulebook regardless of calculations/methodologies in place at the time of project initiation.

Implementer will ensure that SEM projects follow the most up-to-date guidance from the CPUC on M&V, incorporating principles of the California Industrial SEM M&V Guide (included as Appendix B), The American Society of Heating, Refrigerating and Air-Conditioning Engineers Guideline 14:2014, and International Performance Measurement and Verification Protocol ("IPMVP"). The M&V Plan will include the following:

- Energy Data Collection Plan
- Energy Data Report
- Energy Savings Calculation Report

g. Program Enhancement Planning and Policy Coordination Activities

At the request of MCE, Implementer will participate in Program planning activities and energy efficiency policy coordination to improve Program design.

IV. Commercial Program Services

Implementer will serve commercial customers with energy efficiency Program services, pending approval and/or referral of Projects from MCE staff. Eligible commercial customer types will include any non-residential customer with average load of greater than 20 kW. Implementer will not engage in commercial program marketing without MCE staff approval, and must seek MCE approval for project incentive reservations, in advance of presenting project proposals to customers.

All projects submitted to MCE's Commercial Energy Efficiency Program must utilize pre-approved Project paperwork, measures/interventions, and savings claims requirements. Project savings will be reported in accordance with MCE's requirements.

V. Industrial and Agricultural Marketing Support Services

Implementer may, with prior written approval from MCE, perform targeted marketing and outreach to industrial and agricultural customers to increase awareness and participation in the Program. For each initiative, Implementer will submit a written plan, budget, and timeline to MCE for approval. All approved services will be billed on a time and materials basis with the rate card and budget listed in Exhibit B of the MSA.

These services include, but are not limited to:

- Digital advertising
- Case studies
- Collateral

VI. Deliverables

a. **Updated Implementation Plans** – to be completed on an as-needed basis at MCE's direction
   i. See Appendix A for required components

b. Updated Application and enrollment forms, rebate/incentive forms, calculator tools, audit documentation – as needed or directed by MCE

c. Updated M&V Plan – as needed or directed by MCE

d. Cost Effectiveness Tests – Annually in July, or as requested by MCE based on compliance requirements, in support of budget requests or Program design revisions

Billing:

Implementer shall invoice MCE according to the project type listed below and pursuant to the payment schedule listed in Table 1. For clarity, Marketing Services are to be billed at the hourly personnel rate listed in Exhibit B of the MSA and shall not exceed $40,000. In no event shall the total cost to MCE for the services provided under this Statement of Work exceed the maximum sum of **$6,898,444** for the term of the Agreement.

Table 1: Payment Schedule

	2021-2024 Program Years		
	$/net kWh	**$/net therm**	**Total NTE**
Industrial	$0.30	$1.76	N/A
Agricultural	$0.30	$1.76	N/A
Commercial	$0.27	$1.76	N/A
NTE Industrial	$ 2,259,986.41	$ 968,565.60	$ 3,228,552.01
NTE Agricultural	$ 1,296,005.76	$ 228,706.90	$ 1,524,712.66

NTE Commercial	$ 1,684,143.10	$ 421,035.77	$ 2,105,178.87
		Total	**$ 6,858,443.54**

The payment schedule in Table 1 defines Implementer's rates and maximum available contract value for this Statement of Work, which includes performance rates. The Program budget is determined by MCE on an annual basis through MCE's Annual, Bi-Annual or Supplemental Advice Letters which requests ratepayer funding for the Industrial, Agricultural and Commercial Programs. The funding available to Implementer is contingent upon CPUC approval of the aforementioned Advice Letters, and subject to change, pending regulatory approval to continue administering these programs. MCE will inform Implementer at the beginning of each Program year the expected funding available for performance rates and customer incentives, which may be updated from time to time as needed by MCE.

For purposes of this Agreement, "net" is defined as claimable energy savings as determined and approved by the CPUC. Implementer shall adhere to the most up to date guidance from the CPUC for all calculations of net energy savings.

Projects are paid based on claimed (deemed or custom) or metered (NMEC or SEM) energy savings reported to the CPUC.

I. **Claimed Energy Savings Projects**. Implementer payments for Projects based on deemed or custom claimed energy savings will be made after Project completion and submission of Project energy savings documentation and claims data to MCE. Claimable energy savings will be based on the CPUC-approved policy at the time the Project is pre-approved by MCE and valid for a period of one year. Projects not completed after one year of MCE pre-approval, may require additional MCE review. Implementer shall invoice monthly for these completed Projects.

II. **Metered Energy Savings Projects.** Implementer payments for Projects based on measured consumption data Projects (NMEC and SEM) will follow the IPMVP and CPUC guidance for NMEC and SEM analyses and measurement and according to the following schedule:

   a. **Payments for SEM Projects not using site-level NMEC:** Implementer payments will be made based on forecasted annual energy savings and shall be paid to Implementer in quarterly installments, beginning after the initial intervention or enrollment for a Project, and subject to the True-Up Protocol listed in Section II, c. below. Forecasting methodology shall be consistent with protocols approved by the CPUC. Implementer shall invoice quarterly for these Projects.

   b. **Payments for NMEC Projects (Including whole facility SEM projects using site-level NMEC):** Implementer payments will be made based on NMEC savings and shall be paid to Implementer in quarterly installments, beginning after the initial intervention or enrollment for a Project, and subject to the True-Up Protocol listed in Section II, c. below. Implementer shall provide documentation of energy savings for the prior quarter which will be reviewed and approved by MCE before issuing a payment installment. Implementer shall invoice quarterly for these Projects.

   c. **True-Up Protocol after 12 Months (applicable to both NMEC and SEM Projects).** After 12 months following project enrollment, Implementer will submit the final first year annual energy savings based on documentation and true-up positive or negative variance from the quarterly claims. In the event that MCE has paid less than the amount to which Implementer was entitled based on annual energy savings documentation (as reviewed and approved by MCE), MCE shall pay any such net difference to Implementer. In the event that MCE has paid more than the amount to which Implementer was entitled, as reviewed and approved by MCE, Implementer shall refund any such amount to MCE. This process will repeat for a second year to cover variance from the first year's annual energy savings, concluding 24 months after the initial intervention.

   d. **Year 2 of a Project:** MCE will pay Implementer based on the incremental savings earned above the verified savings claimed in the first year of a Project, and according to the applicable payment schedule for claimed or metered energy savings projects listed above, and subject to the True-Up Protocol listed in Section II, c. above.

   e. **Existing Participants Year 3 and 4 Program Extension:** Implementer will continue to offer program participation for existing participants into Cycle 2 (Year 3 & 4). Participants wishing to continue participation will be required to re-sign participation agreements for Cycle 2.

III. Marketing support services will be charged at the personnel hourly rates listed in Exhibit B of the MSA with a **maximum sum of $40,000**.

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Term of Statement of Work:
This Statement of Work shall commence on **September 3, 2021** and shall terminate on **December 31, 2024**.

IN WITNESS WHEREOF, the parties have executed this Statement of Work – Schedule A.1 on the date first above written.

APPROVED BY
Marin Clean Energy:

DocuSigned by:
By: Dawn Weisz
A59878416EBC4F8...
Name: Dawn Weisz
Date: 9/20/2021

DocuSigned by:
By: DEVIN TRE MURPHY
7FFB8D80B38A4FB...
Chairperson
Date: 9/17/2021

CONTRACTOR:

DocuSigned by:
By: Andrea White
8E542A5E4B6F4EA...
Name: Andrea White
Date: 9/21/2021

DocuSign Envelope ID: D6DFDCC3-5775-4B80-B116-3E6F235EA79C

STATEMENT OF WORK

Schedule A.2
Statement of Work for MCE Multifamily Residential Sector

This Schedule A.2 ("Agreement") is entered into on **September 3, 2021** pursuant to the Master Services Agreement between MARIN CLEAN ENERGY, hereinafter referred to as "MCE", and CLEARESULT CONSULTING INC., hereinafter referred to as "Implementer", dated **September 3, 2021** ("MSA").

Implementer will provide the following Energy Efficiency program services for MCE's multifamily residential sector as directed by MCE staff, up to the maximum time and fees allowed under this Agreement. As requested and directed by MCE staff, Implementer will also serve MCE Commercial customers with housing facilities, in which projects will be approved individually by MCE staff.

Implementer will implement a multifamily Strategic Energy Management ("SEM") program serving multifamily (defined as residential buildings with 5 or more units and alternative housing facilities) customers ("the Program"). The Program will:

1. Offer multifamily organizations an innovative, low- no-cost approach to saving energy in common areas and in unit.
2. Build lasting relationships with multifamily property managers.
3. Educate and promote action around energy use in multifamily residences.
4. Achieve persistent behavioral, retro-commissioning, and operational ("BRO") energy savings.
5. Identify and refer capital projects to other MCE programs.

Program Design

Implementer's SEM program design will use a cohort model. During the first-year, multifamily property managers will be brought together to participate in the Program. The cohort will create a community of energy efficiency, encourage peer-to-peer learning, and provide intrinsic motivation to make changes that will save energy and money.

The Program will include five main elements:

1. Collaborative group workshops
2. One-on-one events
3. Energy management coaching
4. Measurement of energy savings
5. Residential tenant engagement

TASK 1: PROGRAM START-UP AND ADMINISTRATION

Implementer will offer the Program to eligible multifamily customers within MCE service territory.

Implementer will lead the development and maintenance of a Program Implementation Plan ("IP") and a Program Manual to provide guidance around common processes and procedures encountered during the course of Program implementation, including defining and describing:

- Eligible measures
- Customer eligibility requirements
- Program services such as training, specification, installation oversight, measurement and verification (M&V)
- Audit procedures

Deliverables:

1. Draft IP due within 40 days of contract execution; Final IP ready for MCE submission within 60 days of contract execution. The template for the IP is attached to the MSA as Appendix A.
2. Updated application and enrollment forms, rebate/incentive forms, calculator tools, audit documentation within 60 days of contract execution. Recruitment is not dependent on finalizing these documents.

TASK 2: RECRUITING

MCE will provide Implementer with customer information and utility usage data. Implementer will use provided data to develop a target customer list and leverage existing MCE relationships as well as Implementer's outreach team to recruit SEM participants. Implementer will target existing multifamily customers to recruit for each cohort to meet the energy savings targets.

TASK 3: COHORT DELIVERY

Implementer will deliver cohort-based SEM program which will include:

- **Collaborative group workshops:** Implementer will facilitate discussions, activities, and workshops to introduce and teach energy management core concepts in a lively and engaging manner.

- **One-on-one events:** Includes an energy scan to identify energy efficiency opportunities and engage Program participants' employees in energy efficiency, energy modeling and data collection discussions, and an Energy Management Assessment ("EMA"). The EMA is interactive one-on-one activity with the participant designed to evaluate participant's energy efficiency organizational culture engagement level to gain mutually-decided upon action items that target to improve participant's participation, organization-wide engagement, and promote energy efficiency culture.

- **Energy management coaching:** Implementer will work closely with each participant on a one-on-one basis to help them apply the principles and concepts of continuous improvement applied to energy management within their facility. Implementer will communicate with the energy champion and the executive sponsor on a regular basis to track and assess progress. This will include conducting scheduled one-on-one events, ad-hoc remote meetings, and site visits.

In addition to common area energy savings, Implementer will provide residential tenant engagement activities which will achieve savings from the residents in the multifamily units through the following engagements:

- Seasonal Resident engagement workshops which provide training and education on energy efficiency, behavior changes, and available programs for reducing energy use.
- Virtual turndown and tune up assessments using a virtual tool to look at the equipment in unit and help tenants reduce their usage.
- Monthly communication and marketing materials kits provided to property managers to encourage energy reduction practices.

Illustrative Multifamily SEM Program Schedule

The Program events, activities and workshop schedule are structured on a yearly cycle, with savings determined and incentivized at the end of the year. The timing of these events may shift based on participant availability, holidays and other customer priorities to ensure the Program maximizes engagement.

Table 1: SEM Program Year-One Schedule

#	Workshop/Event/Milestone	Timing
1	Group Property Manager Workshop – Kick-off building a foundation	Month 1
2	One-on-One Activity - Energy Scan	Month 2 - 3
3	One-on-One Activity - Review and Prioritize Opportunities -- SEM Plan	Month 3 - 4
4	Group Property Manager Workshop - Engaging Your Tenants in Saving Energy	Month 5
5	One-on-One Activity - Measuring Energy and Modeling Energy Performance	Month 5
6	Group Maintenance Workshop - Learning about energy efficiency - Season 1	Month 6 -7
7	Group Residential Workshop - Learning about energy efficiency - Season 1	Month 6 -7
8	One-on-One Event - Energy Management Assessment	Month 9
9	Group Maintenance Workshop - Learning about energy efficiency - Season 2	Month 9 - 10
10	Group Residential Workshop - Learning about energy efficiency - Season 2	Month 9 - 10
11	Group Property Manager Workshop - Sustaining Energy Reductions / Report Out	Month 12
12	Savings Report - Year 1 energy Reduction Reporting	Month 14

TASK 4: ENERGY SAVINGS CALCULATIONS AND REPORTING

Energy Savings Calculations

Implementer will measure energy savings in the Program by creating, maintaining, and reporting energy models. Implementer will perform energy modeling to establish a statistical model for the facility that correlates energy consumption to the key energy drivers (occupancy, weather, etc.). Implementer will adhere to the most up-to-date guidance from the California Public Utilities Commission ("CPUC") in developing the Program and specific projects.

SEM Report

After the measurement period concludes, Implementer will prepare a final report for each participant that will be provided to MCE. This report will include:

- An overview of the participant's involvement in the SEM process.
- Documentation of activities completed, summary of the statistical basis and rational for the baseline models and savings calculations.
- The energy models and data.
- Any available documentation that demonstrates participant success and engagement, such as team meeting notes, energy policy, etc.

Savings Claims Reporting and Invoicing

Implementer will maintain customer application documents and calculators for use throughout the Program. Implementer will compile, review, and validate customer project applications prior to submitting to MCE for payment. Any project submitted for incentive payment must also be submitted as part of the monthly and quarterly energy savings claim (see below). SEM projects will adhere to CPUC guidance on the validation of savings claims.

Implementer will submit net and gross monthly energy savings and year-to-date energy savings claims data on an annual basis for each project, following the submittal of an application for incentive payment. Monthly reporting documentation will include:

- Monthly invoice;
- Monthly reporting, including net energy savings (kWh, kW reduction, therms) and year-to-date net energy savings;
- Monthly spend-to-date on Implementer expenditures;
- Monthly spend-to-date on dollar per unit (kwh and therm) in customer incentives;
- Project paperwork as required by MCE Program managers.

Billing:
Implementer shall bill according to the project type listed below and pursuant to the payment schedule listed in Table 3. In no event shall the total cost to MCE for the services provided under this Statement of Work exceed the maximum sum of **$1,339,656** for the term of the Agreement.

ENERGY SAVINGS TARGETS

Implementer will target energy efficiency gas and electric savings and provide MCE with annual forecasts documenting annual targets.

Table 2: Energy Savings Targets

Program Goals	**2022-2024 Contract**	
	net kWh	**net therms**
Multifamily SEM Program	3,934,000	90,600

FEES AND PAYMENT SCHEDULE

For services provided under this Agreement, MCE shall pay Implementer in accordance with the following payment schedule:

Table 3: Payment Schedule

Performance Rates	**2022 - 2024 Program Years**		**2022-2024 NTE Contract Value**
	$/net kWh	**$/net therm**	
Multifamily	$.30/kWh	$1.76/Therm	$1,339,656
Performance rates will be invoiced and paid quarterly. Customer rebates and incentives will be proposed by Implementer in the Implementation Plan, not to exceed average rates for measures (Electric incentive budget/net kWh goal, or Gas incentive budget/net therms goal) as directed by MCE per its available incentive budget.			

For purposes of this Agreement, "net" is defined as claimable energy savings as determined and approved by the CPUC. Implementer shall adhere to the most up-to-date guidance from the CPUC for all calculations of net energy savings.

"Gross Savings" is defined by counting the energy savings from installed energy efficiency measures irrespective of whether or not those savings are from free riders, i.e., those customers who would have installed the measure(s) even without the financial incentives

offered under the program. Gross savings are adjusted by a net-to-gross ratio to produce net savings, that is, to remove the savings associated with free riders.

Projects are paid based on metered (SEM) energy savings reported to the CPUC.

I. **Metered Energy Savings Projects.** Implementer payments for Projects are based on measured consumption data. Projects will follow the CPUC guidance for SEM analyses and measurement and according to the following schedule:

   a. **Payments for SEM Projects not using site-level NMEC:** Implementer payments will be made based on forecasted annual energy savings and shall be paid to Implementer in quarterly installments, beginning after the initial intervention or enrollment for a Project, and subject to the True-Up Protocol listed in Section II, c. below. Forecasting methodology shall be consistent with protocols approved by the CPUC. Implementer shall invoice quarterly for these projects.

   b. **Payments for NMEC Projects (Including whole facility SEM projects using site-level NMEC):** Implementer payments will be made based on NMEC savings and shall be paid to Implementer in quarterly installments, beginning after the initial intervention or enrollment for a project, and subject to the True-Up Protocol listed in Section II, c. below. Implementer shall provide documentation of energy savings for the prior quarter which will be reviewed and approved by MCE before issuing a payment installment. Implementer shall invoice quarterly for these projects.

   c. **True-Up Protocol after 12 Months.** After 12 months following project enrollment, Implementer will submit the final first year annual energy savings based on documentation and true-up positive or negative variance from the quarterly claims. In the event that MCE has paid less than the amount to which Implementer was entitled based on annual energy savings documentation (as reviewed and approved by MCE), MCE shall pay any such net difference to Implementer. In the event that MCE has paid more than the amount to which Implementer was entitled, as reviewed and approved by MCE, Implementer shall refund any such amount to MCE. This process will repeat for a second year to cover variance from the first-year annual energy savings, concluding 24 months after the initial intervention.

Term of Statement of Work:
This Statement of Work shall commence on **September 3, 2021** and shall terminate on **December 31, 2024**.

IN WITNESS WHEREOF, the parties have executed this Statement of Work – Schedule A.2 on the date first above written.

APPROVED BY
Marin Clean Energy:

DocuSigned by:
By: Dawn Weisz
A59878416EBC4F8...
Name: Dawn Weisz
Date: 9/20/2021

DocuSigned by:
By: DEVIN TRE MURPHY
7FFB8D80B38A4FB...
Chairperson
Date: 9/17/2021

CONTRACTOR:

DocuSigned by:
By: Andrea White
8E542A5E4B6F4EA...
Name: Andrea White
Date: 9/21/2021

DocuSign Envelope ID: D6DFDCC3-5775-4B80-B116-3E6F235EA79C

Appendix A - Implementation Plan Template

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Decision 15-10-028 October 22, 2015

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Concerning Energy Efficiency Rolling Portfolios, Policies, Programs, Evaluation, and Related Issues.	Rulemaking 13-11-005 (Filed November 14, 2013)

DECISION RE ENERGY EFFICIENCY GOALS FOR 2016 AND BEYOND AND ENERGY EFFICIENCY ROLLING PORTFOLIO MECHANICS

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ATTACHMENT: Implementation Plan Guidance

The following information will be uploaded to EEStats, to create a separate webpage for each program and sub-program through an online database platform.

Program Budget and Savings Information

EE Stats implementation plan platform will generate summary views of the following information, based on application tables that the PAs upload to EE Stats .The information will be organized at the measure and sub-program level to enable multiple cross tabulations and outputs for stakeholders review and consideration. Programs with subprograms will be displayed at subprogram level, and will roll up to a program summary page..

1. Program and/or Sub-Program Name
2. Sub-Program ID number
3. Sub-program Budget Table
4. Sub-program Gross Impacts Table
5. Sub-Program Cost Effectiveness (TRC)
6. Sub-Program Cost Effectiveness (PAC)
7. Type of Sub-Program Implementer (Core, third party or Partnership)
8. Market Sector (including multi-family, low income, etc)
9. Sub-program Type (Non-resource, resource acquisition, market transformation)
10. Intervention Strategies (Upstream, downstream, midstream, direct install, non-resource, finance, etc)

Implementation Plan Narrative

Provide the following narrative description for each program (and sub-program, if applicable):

1. **Program Description:** Describe the program, its rationale and objectives.

2. **Program Delivery and Customer Services:** Describe how the energy efficiency program will deliver savings (upstream, downstream, direct install, etc); how it will reach customers and the services that the program will provide. Describe all services and tools that are provided.

3. **Program Design and Best Practices:** Describe how the program meets the market barriers in the relevant market sector/end use. Describe why the program approach constitutes “best practices” or reflects “lessons learned”. Provide references where available.

4. **EM&V:** Describe any process evaluation or other evaluation efforts that the Program Administrator (PA) will undertake Identify the evaluation needs that the PA must build into the program. These might include:
    a. data collection strategies embedded in the design of the program or intervention to ensure ease of reporting and near term feedback, and

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b. internal performance analysis during deployment
c. performance metrics

5. **Pilots**: Please describe any pilot projects that are part of this program, and explain the innovative characteristics to these pilots. The inclusion of this description should not replace the Ideation Process requirements currently agreed by Commission staff and IOUs. This process is still undergoing refinements and will be further discussed as part of Phase III of this proceeding.[1]

6. **Additional information**: Include here additional information as required by Commission decision or ruling (As applicable. Indicate decision or ruling and page numbers)

Supporting Documents

Attach the following documents in Word:

1. **Program Manuals and Program Rules** (See below)
2. **Program Logic Model**: Model should visually explain underlying theory supporting the sub-program intervention approach, referring as needed to the relevant literature (e.g., past evaluations, best practices documents, journal articles, books, etc.).
3. **Process Flow Chart**: Provide a sub-program process flow chart that describes the administrative and procedural components of the sub-program. For example, the flow chart might describe a customer's submittal of an application, the screening of the application, the approval/disapproval of an application, verification of purchase or installation, the processing and payment of incentives, and any quality control activities.
4. **Incentive Tables, Workpapers, Software Tools**: (Can incentives be drawn out of the E3s?) Provide a summary table of measures and incentive levels, along with links to the associated workpapers. Templates are available at http://eestats.cpuc.ca.gov/StandardTables/GuidanceDocument.aspx.

[1] The Ideation Process is a set of reporting requirements developed collaboratively to ensure adequate reporting and review of pilots and other similar projects. This process will be further deliberated as part of Phase III. The current set of guidelines can be found here: http://www.cpuc.ca.gov/NR/rdonlyres/2D89F0DD-619B-4FC7-BD17-843E2993594D/0/IdeationProjectsProcess_OUT.pdf

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5. **Quantitative Program Targets**: Provide estimated quantitative information on number of projects, companies, non-incentive customer services and/or incentives that program aims to deliver and/or complete annually. Provide references where available.

6. **Diagram of Program:** Please provide a one page diagram of the program including sub-programs. This should visually illustrate the program/sub-program linkages to areas such as:

    a. Statewide and individual IOU marketing and outreach
    b. WE&T programs
    c. Emerging Technologies and Codes and Standards
    d. Coordinated approaches across IOUs
    e. Integrated efforts across DSM programs

Program Manuals:

All programs must have manuals to clarify for implementers and customers the eligibility requirements and rules of the program. Note that program rules must comply with CPUC policies and rules. Table templates are available at http://eestats.cpuc.ca.gov/StandardTables/GuidanceDocument.aspx. At minimum, manuals should include:

1. **Eligible Measures or measure eligibility**: Provide requirements for measure eligibility or a list of eligible measures.

2. **Customer Eligibility Requirements:** Provide requirements for program participation (e.g., annual energy use, peak kW demand)

3. **Contractor Eligibility Requirements:** List any contractor (and/or developer, manufacturer, retailer or other "participant") eligibility requirements (e.g. specific IOU required trainings; specific contractor accreditations; and/or, specific technician certifications required).

4. **Participating Contractors, Manufacturers, Retailers, Distributers**: For upstream or midstream incentive and/or buy down programs indicate

5. **Additional Services:** Briefly describe any additional sub-program delivery and measure installation and/or marketing & outreach, training and/or other services provided, if not yet described above

6. **Audits:** Indicate whether pre and post audits are required, if there is funding or incentive levels set for audits, eligibility requirements for audit incentives

7. **Sub-Program Quality Assurance Provisions:** Please list quality assurance, quality control, including accreditations/certification or other credentials

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For Market Transformation Programs Only:

1. Quantitative Baseline and Market Transformation Information: Provide quantitative information describing the current energy efficiency program baseline information (and/or other relevant baseline information) for the market segment and major sub-segments as available.
2. Market Transformation Strategy: A market characterization and assessment of the relationships/dynamics among market actors, including identification of the key barriers and opportunities to advance demand side management technologies and strategies A description of the proposed intervention(s) and its/their intended results, and specify which barriers the intervention is intended to address.

(End of Appendix 4)

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Appendix B - California Industrial SEM M&V Guide

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California Industrial SEM M&V Guide

VERSION 2.02, SEPTEMBER 28, 2020

PREPARED BY: SERGIO DIAS CONSULTING

PREPARED FOR: PACIFIC GAS AND ELECTRIC, SAN DIEGO GAS AND ELECTRIC, SOUTHERN CALIFORNIA EDISON, AND SOUTHERN CALIFORNIA GAS COMPANY

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1 Introduction

Measurement and verification (M&V) is the process of planning, measuring, collecting data, analyzing, verifying, and reporting energy performance or energy performance improvement for a defined boundary.

The purpose of this California Industrial SEM M&V Guide (M&V Guide) is to define a set of principles, guidelines, and requirements that establish a systematic M&V process which can be used by industrial facilities as part of, or irrespective of, participation in a California investor owned utility (IOU) sponsored strategic energy management (SEM) program. The requirements of this M&V Guide shall be adhered to when an industrial facility is participating in an IOU sponsored SEM program engagement. Outside of an IOU sponsored SEM program engagement the industrial facility may wish to adapt this M&V Guide to suit their own energy information needs as determined by their energy business practices.

The industrial facility participating in the SEM program (customer), the SEM implementer (implementer), and IOU are the three primary stakeholders who will be engaged in conducting the measurement and verification (M&V) of energy savings as the metric used to demonstrate and report energy performance improvement.

The California Public Utilities Commission (CPUC) has specified in decision and other documentation that this M&V Guide provides the basis by which energy savings shall be determined as part of an IOU sponsored industrial SEM program engagement. The sponsoring IOU will direct the customer and implementer as to when energy savings shall be reported to the IOU for regulatory reporting. This M&V Guide should serve as the basis of evaluation of energy savings when customers are participating in an IOU sponsored SEM program engagement.

This M&V Guide is designed to work in coordination with the California Industrial SEM Design Guides (Design Guides). The Design Guides are framed around three, two-year SEM program cycles, each with its own distinct set of objectives. A common principle of the Design Guides is that over the three two-year SEM program cycles the customer will first learn about and then lead aspects of a well-structured systematic energy management system (EnMS) that is based upon the ISO 50001:2018 standard. As part of an IOU sponsored SEM program engagement, this M&V Guide should be used to evaluate the development of the energy data collection and energy performance improvement determination portion of a customer's EnMS.

The main text of this M&V Guide contains the requirements that must be followed when a customer is participating in an IOU sponsored engagement. If exceptions to this M&V Guide are sought, or clarification is needed, the IOU program administrator shall be contacted. The annexes of this M&V Guide contain additional guidance that may be of use.

1.1 Goals and Objectives of Conducting the M&V Process

The goals of conducting the M&V process are to:

1. Develop a deeper customer understanding of the relationship between energy uses, operations, and energy consumption.
2. Enable the customer to lead all or a majority of the M&V process.
3. Calculate energy savings as information for the customer and regulatory reporting.

The objectives of conducting the M&V process are to:

1. Teach the M&V process to the customer as part of their EnMS development.
2. Characterize the energy consumption, energy uses, and relevant variables of the facility.
3. Develop a plan to collect energy data.

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4. If possible, develop and use energy consumption models for each type of energy consumed within the M&V boundaries.
5. Quantify energy savings for implemented energy performance improvement actions (EPIA) listed on the Opportunity Register.
6. Calculate energy savings realized during a Reporting Period and then annualize those energy savings so they can be reported to and accepted by the CPUC.

1.2 Terminology

The Design Guides base the development of an EnMS on the ISO 50001:2018 framework, so the terminology used in this M&V Guide is consistent with the international standard. In some cases, the terminology listed in Annex A - Terminology, of this M&V Guide provides commonly understood terms along with ISO 50001 references.

The concepts of energy performance and energy performance improvement are critical to the M&V process:

- Energy performance can be thought of as a snap shot in time of how much energy is being consumed or efficient the use of energy is.
- Energy performance improvement is related to a quantifiable change in the amount of energy consumed between two time periods during which EPIAs may be implemented.

An indefinite number of methods can be used to determine and report energy performance improvement. This M&V Guide uses estimated energy savings as an indicator of energy performance improvement. Customers may use the M&V process to develop other energy performance improvement indicators such as changes in energy intensity and energy efficiency in addition to estimations of energy savings.

1.3 Methods of Determining Energy Savings

This M&V Guide details two methods to determine energy savings. The methods are based upon:

1. One or more energy consumption adjustment models developed for each type of energy consumed within the M&V boundaries (commonly referred to as a top-down approach).
2. The aggregation of energy savings calculated for individual EPIAs that are listed on the Opportunity Register and implemented during the Reporting Period (commonly referred to as a bottom-up approach).

Both methods of determining energy savings are detailed in this M&V Guide. For each type of energy included in the M&V process this M&V Guide requires that a bottom-up approach be taken only when a top-down approach is not used.

Both methods provide value to the customer but the meaning and context of resulting energy savings values is different and needs to be contextualized appropriately. Reconciliation of energy savings values calculated from use of the two different methods should not be conducted as part of an IOU sponsored SEM program engagement.

As part of an IOU sponsored industrial SEM program engagement top-down derived energy savings is preferred for regulatory reporting. Energy savings from only one of the two methods shall be reported to the regulator.

1.3.1 Energy Consumption Adjustment Models

The primary tool to calculate energy savings and track energy performance is one or more energy consumption adjustment models developed for each type of energy consumed within the M&V boundaries. The development and use of energy consumption adjustment models serves two primary purposes:

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- ***Informative tool for customers to take action with.*** Energy consumption adjustment models developed to normalize energy consumption for relevant variables are tools that provide customers with information about the relationship of energy consumption, energy use, and operations. It is important that the customer work closely with the implementer to understand how energy consumption adjustment models are developed, can be used to track energy performance, and calculate energy savings.
- ***Making energy savings values meaningful.*** Energy savings are calculated by comparing the energy consumption of one time period to the energy consumption of another. Because variables that affect energy consumption are ever changing, the operational and external conditions of these time periods do not inherently reflect one another. By adjusting, via a regression model, the energy consumption of one of the two time periods such that the operational and external conditions are comparable, calculated energy savings values depict an accurate representation of the affect implemented EPIA and other actions have on energy consumption.

Both purposes for developing energy consumption adjustment models need to be equally considered throughout the M&V process.

In some instances, energy consumption adjustment models for each type of energy cannot be created based upon the full M&V boundary (typically the facility boundary). In these cases, multiple energy consumption adjustment models can be made so long as the boundaries of each model do not overlap and fit within the larger M&V boundary. When multiple energy consumption adjustment models are developed they typically focus on key processes, systems, and equipment. The creation of multiple models is not a requirement of this M&V Guide but is an option for use. The development of multiple models incurs additional time, complexity, and cost, though the customer may find greater value using multiple models which individually better relate to facility operations than one overall facility-wide model might.

Ideally facility-wide energy savings will be determined with energy consumption adjustment models, though a smaller boundary for which energy consumption models can be successfully developed may be used. The determination of energy savings with an energy consumption adjustment model does not rely on the calculation of energy savings of individual EPIAs, the energy savings of individual energy efficiency projects may be used in a limited capacity to provide confidence in calculated Facility-wide Projected Energy Savings but is not a requirement of this M&V Guide.

1.3.2 Aggregation of Energy Savings from Individual EPIA

Regardless of whether energy consumption adjustment models are developed or not, energy savings values shall be calculated for select implemented EPIA as required by this M&V Guide. If for a given energy type energy consumption adjustment models are not created or used to calculated energy savings, a bottom-up approach of determining energy savings by aggregating energy savings from select individual EPIAs listed on the Opportunity Register shall be conducted. Use of aggregated energy savings from individual implemented EPIAs acknowledges that the energy savings value will most likely not capture the total energy savings resulting from behavioral, retro-commissioning, and operations (BRO) activities and other EPIAs with smaller energy savings potential.

The specificity and detail used to calculate energy savings for each EPIA should be proportional to the annualized energy savings estimated to result from implementation of the action. Energy savings for EPIA with estimated energy savings less than 1.0% of baseline energy consumption for that type of energy do not need to be calculated.

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1.4 Leading and Learning the M&V Process

Over the span of the three, two-year SEM program cycles as defined by the Design Guides, it is expected that the customer first learn from the implementer, then begin, and finally independently lead most or all of the M&V processes outlined in this M&V Guide with limited assistance.

This M&V Guide includes suggestions as to what parts of the M&V process the customer may begin leading during the three different SEM program cycles. In order to lead all or portions of the M&V process the customer will need to understand the activities and expected outcomes. Leading the M&V process could be accomplished by the customer themselves conducting the activities described or by the customer specifying and directing others to complete the activities then checking to ensure outcomes meet expectations.

The customer should focus on learning to lead the M&V process activities that would be of value to them beyond the conclusion of the SEM program engagement. The portions of the M&V Guide that pertain to regulatory reporting and other IOU and CPUC policies and requirements will probably have limited value to the customer beyond the SEM program engagement.

The timing and structure to transition the leadership of the M&V process is not fixed or assumed to be the same for each customer and implementer. In general, it is suggested that:

- In SEM program Cycle 1: The implementer will lead the M&V process while the customer supports and begins to learn.
- In SEM program Cycle 2: The customer learns to lead with significant implementer support. By the end of the SEM program cycle the customer is ready to lead parts of the M&V process with limited support. The customer may need greater levels of support conducting some parts of the M&V process, such as developing energy consumption adjustment models and establishing Annualization Periods used to calculate annualized energy savings values.
- In SEM program Cycle 3: The customer eventually leads the M&V process with limited implementer support. If leading the M&V process alone, the customer should be able to contact the implementer as needed for assistance. The implementer should review customer led work on a regular basis to ensure the M&V process is being followed and energy savings determined in accordance with this M&V Guide.

When managing the M&V process on their own, or with limited implementer guidance, customers may be able to use the M&V process to track progress towards established energy targets and other objectives, and forecast energy demand and carbon emissions in addition to calculating energy savings. Beyond participation in an IOU sponsored SEM program engagement, the customer should review which requirements of this M&V Guide should be altered to best fit their own needs as part of their EnMS.

1.5 Relationship to Other M&V Guides

This M&V Guide (v2.0 and higher) is an update to the original version (v1.0) published February 8, 2017. This revision incorporates feedback from IOU staff, contracted SEM implementers, CPUC staff, and CPUC contracted evaluators who were engaged in the first offerings and evaluation of the California Industrial SEM Program.

As with the original, this updated M&V Guide is founded upon the key principles and specifications of well-established SEM M&V documents. Much of the technical content has been adapted from three SEM M&V documents:

- Energy Trust of Oregon Energy Production Efficiency, Energy Intensity Modeling Guideline, Version 2.2, January, 2019.

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- Bonneville Power Administration Monitoring Tracking and Reporting (MT&R) Reference Guide, Revision 8.0, November 15, 2019.
- U.S. Department of Energy Superior Energy Performance 50001, SEP 50001, Measurement & Verification Protocol: 2019, October 29, 2019.

This M&V Guide is consistent with the principles and compatible with:

- ISO 50015:2014 – Measurement and verification of energy performance of organizations – General principles and guidance.
- ISO 50047:2016 – Determination of energy savings in organizations.

In addition, efforts were taken to ensure consistency in technical direction with:

- ASHRAE Guideline 14:2014 – Measurement of Energy, Demand and Water Savings.
- International Performance Measurement and Verification Protocol – Option C, January 2012.

1.6 Relationship to the NMEC Rulebook

The CPUC developed Rulebook for Programs and Projects Based on Normalized Meter Energy Consumption (NMEC Rulebook) summarizes requirements for NMEC programs where energy savings are based on normalized metered energy consumption (NMEC). The purpose of the NMEC Rulebook is to provide a list of the directives and policies that have been established by the CPUC for the administration and implementation of such programs.

This M&V Guide and the NMEC Rulebook are based upon the common concept of determining energy savings on a facility-wide, existing baseline, utility meter-based approach. While the concept is common, the CPUC has stated that the NMEC Rulebook and this M&V Guide are separate and not interchangeable. As stated in the January 7, 2020 version 2.0 of the NMEC Rulebook, “NMEC is not permissible for industrial operations and maintenance (O&M) or behavior, retro commissioning, and operations (BROs)-type projects except as a component of Commission defined Strategic Energy Management Programs.” The NMEC Rulebook continues that in Decision 18-01-004, “We clarify that this SEM program is the only program in which NMEC currently may be used to assess savings in industrial facilities from operations and maintenance (O&M) or behavior, retro commissioning, and operations (BROs)-type activities.”

The separation of the NMEC Rulebook and this M&V Guide reflects the CPUC understanding that while the meter-based approach of the two documents contains many similarities, the NMEC Rulebook is oriented towards the commercial sector. The NMEC Rulebook refers extensively to the LBNL Technical Guidelines which states, “the guidance [of the LBNL Technical Guidelines] has the objective of informing the M&V Plan that will support the Implementation Plan for proposed programs targeting multiples measures, and whole building gross savings approaches in the commercial sector.” This M&V Guide pertains to the industrial sector.

When reasonable, consistency between the NMEC Rulebook and this M&V Guide has been considered.

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2 The SEM M&V Process

This M&V Guide is divided into 2 non-technical and 12 technical sections. Each technical section is itself a process that fits within the larger process of M&V. The larger M&V process and section level processes should be conducted at least on an annual basis. Review and update of certain parts of the M&V process can be conducted more frequently as needed.

The overall process of M&V described in this M&V Guide includes:

- Characterizing the facility.
- Identifying and selecting relevant variables.
- Developing the Energy Data Collection Plan.
- Collecting data and assessing data quality.
- Developing energy consumption adjustment models.
- Using the Opportunity Register.
- Tracking energy performance.
- Conducting a Technical Review of the M&V process.
- Calculating energy savings with energy consumption adjustment models.
- Calculating energy savings with the Opportunity Register.
- Reporting energy savings.
- Ensuring a M&V Report is prepared throughout the M&V process.

2.1 SEM Time Periods

The M&V process described in this document is assumed to be conducted on an annual basis. Specific time periods listed below are established within and outside of the annual process. Use of these time periods helps define how energy performance is monitored and energy performance improvement is determined. These time periods may or may not change as the annual M&V process is conducted.

Due to their foundational importance, the time periods are defined here as well as in Annex A - Terminology, of this M&V Guide.

2.1.1 Baseline Period

A consecutive 12 or 24-month period for which energy consumption and relevant variable data are collected to create forecast energy consumption adjustment models and serves as the comparative basis by which improvements in energy performance are calculated against. Ideally, the Baseline Period will end immediately prior to the start of the SEM Program Engagement Period. The Baseline Period shall not end more than three months prior to the beginning of the SEM Program Engagement Period. The three-month allowance provides for abnormal operations not expected to be observed again. The Baseline Period shall be updated as needed based upon the requirements of this M&V Guide. The Baseline Period shall not be truncated if selected data are omitted.

2.1.2 SEM Program Engagement Period

A consecutive 24-month time period after the Baseline Period during which the SEM program engagement is conducted. Energy consumption data and relevant variable data are collected continuously during the SEM Program Engagement Period.

2.1.3 Reporting Period

Time period for which energy saving are calculated. All portions of the SEM Program Engagement Period shall be encompassed by one or more Reporting Periods.

Establishing a single Reporting Period so that it is the same duration as the SEM Program Engagement Period offers simplicity in understanding the energy savings resulting from a SEM program engagement and can provide a more meaningful retrospect on actions taken to

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improve energy performance over time. The IOU sponsoring the SEM program engagement shall be responsible for establishing the duration of the Reporting Period.

2.1.4 Annualization Period

Used to annualize energy savings from energy consumption adjustment models, in most instances a time period of 90 days during the final months of the Reporting Period. The Annualization Period can be longer than 90 days depending on the variability of the facility. If the customer's operation is highly seasonal, and only has one model, a longer Annualization Period that addresses seasonal impact on varying energy savings rates should be selected.

2.2 Tools, Reports, and Reviews

Throughout this M&V Guide, various tools, reports, and reviews are referred to. These tools, reports, and reviews are detailed below.

2.2.1 Energy Map

The energy map is akin to an energy end-use breakdown chart. It highlights potential areas for eliminating waste and helps facility personnel visualize the relative scale of energy use for different locations and systems in their facility. The energy map produces a compelling and understandable graphic and chart of how the facility uses energy.

The energy map is intended to: Identify and show where and how much energy is used within a facility, create employee awareness of facility-wide energy use, prioritize energy-saving opportunities based on areas of high use in a facility.

An Energy Map Tool, likely Excel-based, that helps the customer build a basic energy map, and optionally a detailed energy map shall be provided to customers to help them organize and understand energy use at their facility by area or system.

2.2.2 Energy Data Collection Plan

The Energy Data Collection Plan includes information describing when and how data should be collected from identified data sources. The Energy Data Collection Plan shall address the collection of energy consumption and relevant variable data.

2.2.3 Opportunity Register

The Opportunity Register helps the customer prioritize and track opportunities to improve energy performance and as specified in the SEM program Cycle 1 Program Design EnMS improvement opportunities. This M&V Guide focuses on the energy savings part of the Opportunity Register.

The implementer shall provide and ensure the customer can record and track data in a no-cost, publicly available Opportunity Register. An Excel based tool is likely to be provided as the underling software is typically available to customers. Other no-cost tools are acceptable so long as the customer can maintain access to the tools at no-cost beyond the IOU sponsored SEM program engagement.

In addition the no-cost tool and with approval from the sponsoring IOU, implementers are permitted to make available to customers proprietary/for fee software tools to serve as the Opportunity Register so long as data contained with these tools can be extracted and used to populate the no-cost Opportunity Register at the conclusion of the SEM Program Engagement Period.

2.2.4 Energy Consumption Adjustment Model Development Tool

The implementer shall provide and ensure the customer can use a no-cost, publicly available Energy Consumption Adjustment Model Development Tool. As part of an IOU sponsored SEM program engagement there are no specific software requirements for building energy consumption adjustment models so long as the resulting model meets all validity requirements

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of this M&V Guide. Consider the software's flexibility and its ability to iterate quickly on relevant variable combinations. The customer must be able to maintain access to the tools at no-cost beyond the IOU sponsored SEM program engagement.

In addition the no-cost tool and with approval from the sponsoring IOU, implementers are permitted to make available to customers proprietary/for fee software tools to serve as the Energy Consumption Adjustment Model Development Tool so long as data contained with these tools can be extracted and used to populate the no-cost Energy Consumption Adjustment Model Development Tool at the conclusion of the SEM Program Engagement Period.

2.2.5 Energy Data and Performance Tracking Tool

This tracking tool shall include selected energy consumption adjustment models so that, as new energy consumption and relevant variable data are entered, the model is used to display and track the most recent energy performance value.

To ensure the customer can access their own data and continue to record and track data after an SEM program engagement, the implementer shall provide and ensure the customer can record and track data in a no-cost, publicly available Energy Data and Performance Tracking Tool. An Excel based tool is likely to be provided as the underling software is typically available to the customer. Other no-cost tools are acceptable so long as the customer can maintain access to the tools at no-cost beyond the IOU sponsored SEM program engagement.

If the customer would rather use their own data collection tool the implementer shall ensure it is configured to track all data identified in the Energy Data Collection Plan and data will be exportable to provide to the sponsoring IOU if needed.

In addition the no cost tool and with approval from the sponsoring IOU, implementers are permitted to make available to customers proprietary/for fee software tools to serve as the Energy Data and Performance Tracking Tool so long as data contained with these tools can be extracted and used to populate the no-cost Energy Data and Performance Tracking Tool at the conclusion of the SEM Program Engagement Period.

2.2.6 M&V Report

A living documentation of the activities and outputs of the M&V process. The M&V Report shall be finalized once per year. The M&V Report is intended to be of use to the customer as a record of the M&V process that can be used in subsequent year continuations of the M&V process.

2.2.7 Technical Review

An annual review of the M&V process conducted between the implementer and IOU sponsoring the SEM program engagement. The Technical Review should be scheduled first approximately four months after the start of an SEM Program Engagement Period and then approximately every 12 months thereafter. With the current SEM Program Design of three, two-year SEM Program Engagement Periods this would result in two Technical Reviews per SEM Program Engagement Period.

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3 Characterizing the Facility

3.1 Introduction

M&V is conducted for a defined set of boundaries. The process of establishing M&V boundaries is based upon developing an understanding of the:

- Types of energy consumed.
- Energy uses.
- Energy meters at the facility.

In many cases, establishing M&V boundaries may be relatively straightforward depending on the nature of the facility and what information is already available. If the M&V process is being conducted as part of an IOU sponsored SEM program engagement, the M&V boundaries most likely will be the same as those used to define the facility as part of the SEM program engagement. M&V boundaries should align with the location of energy meters and energy uses such as production lines, process systems, buildings, and other equipment.

Initial establishment of M&V boundaries should be led by the implementer with engaged participation of the customer.

The process of updating M&V boundaries is based upon detailed knowledge of the energy consumption, use, and operations within the facility, information the customer should have intimate knowledge of. Annual review of the M&V boundaries following the process detailed in this section of the M&V Guide should be led by the customer and supported by the implementer. Over time the customer should ever more independently lead annual reviews of M&V boundaries.

3.2 Process

The process of first establishing and then reviewing M&V boundaries is to be conducted annually. Annual updates could be a simple review to confirm what, if any, changes to the types of energy consumed, energy uses, energy meters, operations, and potentially relevant variables have occurred at the facility and need to be reflected. If changes to the facility, including the addition or removal of on-site generation and facility expansions, have occurred an assessment should be made to understand how they may affect the M&V boundaries and other parts of the M&V process.

Subsequent parts of the M&V process may reveal a need to revisit M&V boundaries. Changes to the M&V boundaries shall be documented in the M&V Report.

An energy map shall be developed through the process of establishing M&V boundaries.

M&V boundaries shall be documented by one or more line drawings or aerial images of the facility with the M&V boundaries clearly marked.

3.3 Types of Energy Consumed

The scope of the M&V process includes all energy types, which are delivered to, consumed within, and delivered away from the M&V boundaries. The originating source (e.g., utility, on-site generation, other organization) of the energy should be noted but does not exclude any energy types from being included in the M&V process.

Based upon the working understanding of the M&V boundaries a list of all energy types that the customer has authority of and that are delivered to, consumed within, and delivered away from the boundaries shall be created. The types of energy identified shall be recorded in the M&V Report.

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3.3.1 Quantifying Energy Consumption

The quantity of a particular type of energy that is consumed within the M&V boundaries is defined by the net energy flow of that energy type across the M&V boundaries. For each energy type included in the M&V process, energy consumption shall be equal to or greater than zero. If energy consumption is calculated to be a negative value, it shall be accounted for as zero. In such cases, care shall be taken to ensure energy export and energy product are correctly accounted for.

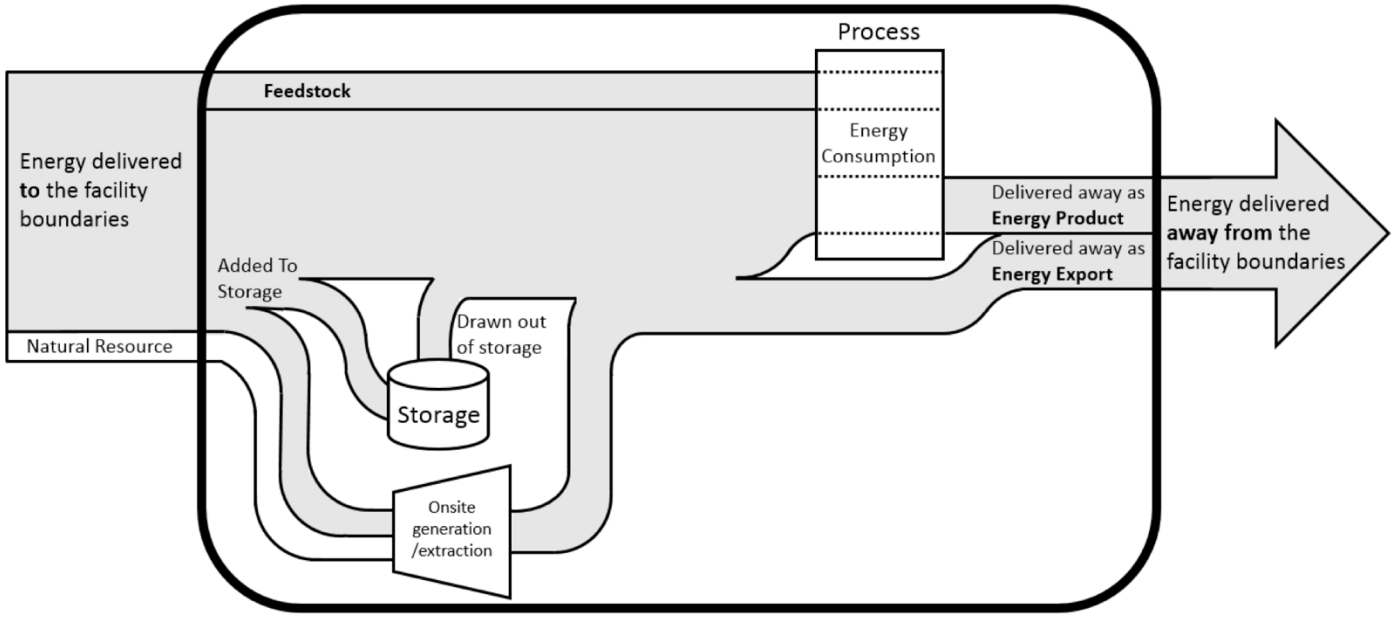


Figure 1: Generic Energy Consumption Accounting Flow Diagram.

The below equation describes how to calculate energy consumption. Figure 1 graphically illustrates this relationship.

$$\begin{aligned}\text{ECD}(*) = {} & \text{E}(*)\text{ delivered to the facility} + \text{E}(*)\text{ onsite generation/extraction} - \\ & \text{E}(*)\text{ delivered away as export} - \\ & \text{E}(*)\text{ delivered away as product} + \text{E}(*)\text{ drawn out of storage} - \\ & \text{E}(*)\text{ added to storage} - \text{E}(*)\text{ used as feedstock}\end{aligned}$$

3.3.2 On-site Energy Generation and Conversion

M&V boundaries are considered three-dimensional, thus energy accounting shall include energy that enters the M&V boundaries from the sky (e.g., rooftop solar PV) and ground (e.g. on-site natural gas extraction) if consumed at the facility in the form of an energy type for which energy savings are being determined.

The establishment of M&V boundaries should consider on-site energy conversion equipment such as a CHP system, natural gas fueled gas turbine engine, or biogas fueled boiler. This consideration shall include analysis of how energy converted from one type to another (e.g., natural gas to steam and electricity) are ultimately consumed by energy uses within the M&V boundary and consideration for use in the future development of energy consumption adjustment models. To aid energy consumption adjustment model development it may be useful to remove the energy conversion equipment from the M&V boundaries such that the energy the equipment produces is accounted for rather than the energy that enters is (e.g., account for the steam produced by a boiler rather than the biogas that feeds it, account for the electricity after the inverter that is generated by an on-site PV panel).

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See Annex C - Special Cases in Energy Accounting for examples of how to establish the delivered energy value for various M&V boundary situations.

3.3.3 Types of Energy with Relatively Insignificant Consumption

A given type of energy may be omitted from the M&V process if it accounts for 5.0% or less of the facility's total prior year annual delivered energy. In calculating the percent of total consumption represented by an omitted energy type, both the energy consumption of the omitted energy type and total facility energy consumption shall be calculated on a delivered energy basis. The determination to omit energy types shall be based on measured data or calculated analysis and documented in the M&V Report.

> EXAMPLE: A facility that produces and freezes large quantities of processed foods uses propane for two forklifts. The annual energy consumption of propane is calculated to be 2.5% of facility total energy consumption. As a result, propane is omitted from the M&V process.

3.4 Energy Uses

M&V boundaries shall be defined to encompass important energy uses such as production lines, process systems, and buildings as appropriate.

Uses of energy that consume a significant quantity of energy or are important to the operations of the facility shall be identified. As part of the EnMS, criteria may have been developed to identify significant energy uses (SEUs). Document these energy uses and the SEUs along with any criteria developed and used to decide which energy uses to list or not.

Identified energy uses shall be indicated on the energy map. Process flow diagrams, piping and instrumentation diagrams, and value stream maps can be helpful in creating the images(s). Indicate the flow of each type of energy on this drawing. The energy flows trace the "path" energy takes from the point it is delivered to the M&V boundaries and to the energy end uses. If applicable, the energy flows will include the "path" energy may take into and out of on-site storage, delivered away from the facility as an energy product or energy export. Additionally, if energy is used as a feedstock this shall be noted as part of the energy flow. The energy content of the energy flows that do not terminate in energy end uses within the M&V boundaries will need to be netted out to correctly establish the amount of delivered energy.

3.5 Energy Meters

Data regarding the quantity of energy delivered into or away from the M&V boundaries (delivered to the facility, delivered away as energy export, delivered away as energy product, or feedstock) may be available directly from meters (utility or submeters) or taken from a supplier invoice. Based upon the location of energy meters the M&V boundaries may need to be adjusted.

Meters (utility or submeters) may directly report energy consumption values or physical properties such as pressure, temperature, mass, volumetric flow, and heating value that can be used to calculate energy consumption by using equations and conversion factors. Equations and conversion factors shall be documented as part of the M&V Report.

Use of existing utility meters may be sufficient to quantify the delivered energy. Examples of when metering of energy consumption and generation metering is required within the M&V boundaries are presented in Annex C - Special Cases in Energy Accounting.

If utility meters serve buildings, equipment, processes or other energy using systems outside the M&V boundaries (nominally outside the SEM program boundaries if the customer is participating in an IOU sponsored SEM program engagement) for which energy performance

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and energy savings are being determined, submeters are required to net out the energy consumption of these energy uses.

The M&V Report shall document all utility and other relevant energy meters for all types of energy delivered to or away from the M&V boundaries as well as energy submeters. For each meter document the meter serial number, utility account number, or other unique identifiers. Document the major processes monitored by each energy meter and the metering interval.

3.6 Documenting M&V Boundaries

Documentation of M&V boundaries shall include a description and one or more line drawings or aerial images of the facility with the M&V boundaries clearly marked in the M&V Report. The line drawing(s) or aerial image(s) shall include demarcation of buildings and major equipment and processes, energy meters, and energy flows within the M&V boundaries. Special note should be made regarding the location and interrelationship of energy conversion equipment (e.g., CHP, on-site generation). Process flow diagrams, energy maps, piping and instrumentation diagrams, and value stream maps can be helpful in creating the images.

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4 Relevant Variables

4.1 Introduction

Relevant variables are quantifiable factors that routinely change and have a major impact on energy performance, including operational performance. Relevant variables may or may not be in the control of the customer and which directly affect the amount of energy consumed within the M&V boundaries.

> EXAMPLES: Production quantities, equivalent products, number of batches, heating degree-days, humidity, occupancy, hours worked, and raw material characteristics.

Relevant variables are an important part of understanding the relationship between relevant variables and energy consumption.

Relevant variables are used to normalize energy consumption as part of an adjustment model. Relevant variables can also be used with other methods of tracking energy performance and determining energy performance improvement. In order to develop robust and meaningful adjustment models, care shall be taken to avoid:

- Omitting relevant variables that affect energy consumption.
- Including variables that do not directly affect energy consumption.

The implementer shall lead the customer through a process of identifying relevant variables before attempting to develop energy consumption adjustment models. As needed, the implementer shall re-engage with the customer to select alternative relevant variables to facilitate model development.

Subsequent annual updates should be led by the customer with implementer support. Updates could be simple reviews to confirm that the selected relevant variables are indeed still relevant. A full review of selected relevant variables may be needed if additional or different energy consumption adjustment models are needed or if significant operational changes have occurred at the facility.

4.2 Process

Data for relevant variables will be collected on an ongoing basis. It is important to select a suite of relevant variables that will fully represent the use and consumption of energy within the M&V boundaries. Equally, it is important to not collect data on variables that have no bearing on the use and consumption of energy.

To develop an appropriate and useful set of relevant variables, a list of potentially relevant variables should be assembled, criteria for selection should be established, and a final list of relevant variables for which data will be collected should be selected. Review of which variables are selected as relevant variables should be conducted annually, reflecting lessons learned from the prior year and taking into account planned changes to the facility. Relevant variables should be added and removed as needed to reflect changes to energy uses and operations as well as taking into account feedback from efforts to establish energy consumption adjustment models.

4.3 Identifying Potentially Relevant Variables

Using engineering judgment, a list of potentially relevant variables that may or may not be included in the energy consumption adjustment models shall be developed. For each potentially relevant variable included on this list, the energy type and energy use (of those identified in Section 3) that the relevant variable is suspected to affect shall be noted. This list shall be included as part of the M&V Report.

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Facilities with complex or diverse operations, for which there may be difficulty creating a single facility-wide energy consumption adjustment model for each type of energy, should consider assessing additional potentially relevant variables that may be more directly related to a discrete process, building, or other operation that could be modeled in isolation.

The following variables shall be considered for inclusion as relevant variables:

- Activity level (e.g., operating hours, operating mode (weekend/weekday), production level, product mix, and equivalent products, occupancy).
- Weather (e.g., heating degree-day, cooling degree-day, ambient temperature, and humidity).

Relevant variables shall be physical quantities, characteristics, or conditions. Financial metrics or metrics that include a financial component, such as product price or energy costs are not allowed as they lack a physical relationship to energy consumption.

4.3.1 Production Metrics

For industrial facilities, a metric of production is often included as a relevant variable. It is important to understand how many product types are manufactured in a facility and whether there is likely to be a difference in energy consumption based on operating parameters such as product type, process flow, or batch size. Facility personnel who work closely with energy uses typically have insight into what variables should be considered. By thinking openly about which variables may affect energy consumption and how those variables relate to one another, the chances of developing a robust energy consumption adjustment model will be increased.

> EXAMPLE: A facility that produces two types of products, one of which is very energy intensive to produce and the other is not, may consider including production levels from both products rather than an aggregated production value.

If multiple production variables are available, use process flow diagrams and energy maps to identify potentially interactive effects and correlations. Using multiple measurement points in the same process line may not be necessary or beneficial. See Annex D – Multicollinearity and Autocorrelation, for more details.

Measurement Points	Pros	Cons
Raw material input	Provides a mechanism for capturing the effects of different types of raw materials.	Fails to provide a mechanism for understanding energy impact of yield/productivity improvements.
In-line metric	Allows for the selection of a production variable at energy-intensive processes, thereby minimizing a time-series shift.	Fails to provide a mechanism for incentivizing the energy impact of yield/productivity improvements downstream, from point of measurement.
End-of-line metric	Provides a mechanism for incentivizing the energy impact of yield/productivity improvements.	May induce a time-series shift for long lead-time processes.
Finished product shipped	Data can be captured via accounting systems.	May not sync with production depending on dwell time in the warehouse.

Table 1: Options for Production Relevant Variables

Raw material, in-line production, and finished product metrics each have pros and cons as relevant variables that shall be considered. An informed decision will take into account factors such as lead time, the desire to account for yield effects, as well as the prevalence of inventory fluctuations in-process or at the finished-product stage.

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4.3.2 Weather Metrics

Weather data shall be actual weather data from published government sources, such as primary National Oceanic and Atmospheric Administration (NOAA) weather stations, the National Climate Data Center (NCDC) database, or from a calibrated weather meter within close enough proximity to the facility to reflect the weather conditions at the facility. If on-site weather station data is to be used it must be calibrated per the manufacturer's specifications and confidence established that the station will be available through the SEM program cycle. The customer must be able to access the same data during and after the SEM Program Engagement Period in order to update the model themselves upon completion of the SEM program engagement.

In some cases, weather stations report in coordinated universal time (UTC) time, which means a daily average is not representative of a 12:00am-11:59pm day in local time. Proper time zone offsets shall be applied to data before averaging into a daily, weekly, or monthly interval.

In many cases heating degree day (HDD), cooling degree day (CDD), and other types of weather relevant variables will be more useful in the formation of meaningful energy consumption adjustment models than ambient temperature.

If being used in the formulation of energy consumption adjustment models that will be used to report energy savings to the CPUC, HDD and CDD shall be calculated based upon at least daily data. Ensure that all relevant weather data are identified to form a suite of weather based relevant variables for use.

4.3.3 Indicator Variables and other Relevant Variables

Based on the energy map and energy uses consider which other relevant variables may affect energy consumption such as raw material properties, operational modes (weekend/weekday) occupancy, shifts, and hours.

Indicator variables can represent tangible changes to operations, facilities, and processes. Positively, the use of an indicator variable can help ensure energy consumption adjustment models are meaningfully constructed. Negatively, indicator variables can be developed semi-arbitrarily to ensure a model can be created regardless of the resulting model being meaningful. Whenever an indicator variable is used in a model, define whether it is a one-time change or a reoccurring event that will also apply in the Reporting Period.

An indicator variable could be used in conjunction with production data to create an artificial offset for regular non-production data days. In this case as the indicator variables would establish a level of energy consumption for non-production days on which energy consumption would increase as production level rise.

Indicator variables may be used to represent seasonal changes, energy projects during the Baseline Period or other step-changes.

4.4 Identifying Potentially Relevant Variable Data Sources

If possible, data sources for each potentially relevant variable shall be identified. If possible, data sources should be calibrated per manufacturer's recommendation.

Assess where production data is available relative to energy-intensive process steps. If a significant time offset exists between the energy-intensive process step and the measurement point, note that a time-shift in interval data is needed to align the production data with energy consumption data.

The list of potentially relevant variables shall be amended to include data sources. For each data source note the serial number or other unique identifiers for meters that would be used to collect data. Data source descriptions shall be specific so that an individual

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familiar with the systems and operations of the facility could understand where and how to collect relevant variable data.

4.5 Selection of Relevant Variables

The list of potentially relevant variables and associated data sources shall be assessed and a list of relevant variables selected for data collection shall be developed as part of the M&V Report. The list of relevant variables most likely will include more variables than will ultimately be used in energy consumption adjustment models. The assessment shall be based upon an established selection criteria and knowledge of the facility. The selection criteria shall be reviewed and updated as part of the annual review of M&V boundaries.

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5 Energy Data Collection Plan

5.1 Introduction

The process of collecting energy consumption and relevant variable data shall be conducted in accordance with a preestablished Energy Data Collection Plan. The Energy Data Collection Plan includes information describing when and how data should be collected from identified data sources. The Energy Data Collection Plan shall address the collection of energy consumption and relevant variable data.

The Energy Data Collection Plan shall be utilized to collect data for the duration of the SEM program engagement as well as any time period prior to accommodate establishment of an energy baseline for energy consumption adjustment model development as needed (typically between a 12 and 24-month period). In cases where historic data are needed, data shall be collected from records in line with the Energy Data Collection Plan (e.g., data are collected at the same frequency and from the same meter or another source). The Energy Data Collection Plan can be used after an IOU sponsored SEM program engagement to continue collecting data in order to track energy performance and determine energy savings.

Development of the Energy Data Collection Plan will rely upon outputs of Sections 3 and 4 of this M&V Guide. The implementer shall work with the customer to develop an Energy Data Collection Plan being sure to identify who is responsible for collecting data, how often they are to collect data, and that they know how to record data in the Energy Data and Performance Tracking Tool.

The implementer shall check in with the customer on a regular basis to ensure the Energy Data Collection Plan is being updated as needed. This check in can be combined with regular confirmation of data collection.

The customer shall update the Energy Data Collection Plan as needed. When major changes occur at the facility the customer shall inform the implementer and together assess what changes are needed to the Energy Data Collection Plan.

5.2 Process

The process of developing and maintaining the Energy Data Collection Plan shall be in part based upon information assembled when establishing M&V boundaries and selecting relevant variables. In addition to these considerations, the Energy Data Collection Plan shall include details identified in this section of the M&V Guide as well as by the IOU and implementer if participating in an IOU sponsored SEM program engagement. The Energy Data Collection Plan shall be checked by the implementer to ensure the data necessary to determine and report energy savings to the CPUC will be collected.

The Energy Data Collection Plan shall be reviewed and updated on at least an annual basis following review of the M&V boundaries and selection of relevant variables. The Energy Data Collection Plan may need to be additionally updated if it is found to be ineffective, identified meters are removed, additional relevant variables are identified, or other extenuating circumstances arise. Changes to the Energy Data Collection Plan shall be documented. The updated Energy Data Collection Plan shall be put into place and used to retroactively collect data for the SEM Program Engagement Period and any time prior as needed.

5.3 Developing the Energy Data Collection Plan

The Energy Data Collection Plan shall list the energy meters and relevant variables data sources for which data will be collected. For each of these data sources the Energy Data Collection Plan shall indicate:

- How the data are to be collected.

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- The frequency of data collection.
- Data storage method and location.
- The person(s) responsible for collecting and storing the data.
- The person(s) responsible for conducting quality control of the data.

A consistent and reliable process for acquiring and recording data shall be developed. The steps (detailed appropriately to the skills, experience, and abilities of the person collecting the data) to be followed to ensure timely acquisition and quality control of data shall be listed. A complete collection process shall include:

- Data required.
- Data location.
- Method of analysis to ensure data quality.

In some facilities, a data collection process may already in place and can be leveraged. If data that need to be collected are not already collected, then determine if the organization has the means to collect the data. If not, the customer shall acquire additional metering equipment or identify different data that will fulfill the same need. The Energy Data Collection Plan shall reflect if such considerations are needed.

5.3.1 Frequency of Data Collection

Energy and relevant variable data shall be collected at least monthly if not more frequently (e.g., weekly, daily, and 15-minute interval). In general, more frequent data collection can be beneficial in the development of robust energy consumption adjustment models. Daily or weekly time interval data typically provide better insight into the process, system, or facility being modeled compared to data collected less frequently (e.g., monthly).

The frequency of data collection shall take into consideration the frequency at which energy consumption data and relevant variable data can be obtained and be meaningful. If production is a relevant variable and data can only be collected on a weekly basis, then there is limited benefit to collecting energy consumption on a 15-minute basis.

While this M&V Guide makes this conditioned allowance for a slower collection of data, it is highly encouraged that data be collected at the most frequently rate possible for possible future use. More frequently collected data can be aggregated together to match the rate at which relevant variable data can be collected when forming energy consumption adjustment models (e.g., 15-minute interval electricity consumption data can be aggregated to a weekly basis if the relevant variables associated with electricity are only available on a weekly basis.).

5.3.2 Energy Types with Multiple Sources and Meters

When a particular energy type is delivered to the M&V boundary from multiple sources (e.g., IOU supplied electricity and on-site generated electricity from a PV system or chilled water delivered by another organization and water chilled by a chiller supplied with IOU delivered electricity) or multiple meters from IOU supplied energy, the quantity of energy from each originating source should be recorded separately. These values may be aggregated in the formation of energy consumption adjustment models but the disaggregated values may be needed to determine energy savings for regulatory reporting purposes.

As part of an SEM program engagement, be aware of relevant utility or CPUC policies related to data collection and the source of energy, specifically for non-IOU supplied energy and if a public purpose charge (PPP) is paid by the customer.

5.3.3 Meter Calibration

All data used as part of the energy accounting, including those for energy consumption and relevant variables, shall be taken from precise measurement systems, such as utility meters and

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regularly calibrated submeters. Quantification of energy consumption or of a relevant variable via subtraction of readings from two or more calibrated meters is acceptable.

If energy consumption data are taken from a source other than the utility meter, calibration of that meter must follow the manufacturer's recommendations. Calibration records and records of repairs to calibrated meters shall be maintained by the customer and available for the implementer to review if requested. Calibration records for utility meters are not the responsibility of the customer or implementer and do not need to be maintained.

Proper calibration of meters alone will not ensure data are accurately collected and tracked. Care shall be taken to ensure data from meters are collected accurately as part of the data collection efforts detailed in Section 6.

5.4 The Opportunity Register

5.4.1 Establishing the Opportunity Register

The Opportunity Register helps the customer prioritize and track opportunities and supports the program in recording both influence and savings. An Opportunity Register shall be created and must include both EPIAs and EnMS improvement opportunities. Opportunity Register data related to the EPIAs shall include:

- **A general description**: including a name, reference number, location, system or process, equipment type, size, capacity, load, and operating conditions.
- **An "identify" section**: including the location, process area/system or cost center it impacts, the type of activity (operational, capital, process, maintenance, or other), and who it was submitted by.
- **A "prioritize" section**: including the energy impact (by category, i.e. low or high), energy saving estimate by energy type, the cost/effort required (by category, i.e. low or high), and the decision the facility is making on whether to implement the opportunity (i.e. implement now, implement later, not implement)
- **A "planning" section**: including a brief description of what the next steps are (or the required actions to complete), who the opportunity is assigned to, the target due date, the actual date the opportunity was completed, and the current status of the opportunity.
- **An "ensure persistence" section**: including the risk of backsliding (or how likely it is that the energy savings from this project will decline without regular attention paid by key personnel), a summary of the strategy for ensuring energy savings persist in the long term (this should likely be documented more fully elsewhere), whether or not the strategy was implemented, and a review date for the persistence strategy.
- **An "implementation" section**: including the date initiated, data completed (and if not completed a brief rationale), note if it was identified during or outside a SEM program engagement, and note if it was planned during or outside a SEM program engagement.
- **A "results" section**: including annualized energy savings for each type of energy affected, the method used to calculate the energy savings, notes where documentation for the energy savings can be found (Details pertaining to when energy savings shall be calculated for individual EPIAs are provided in this M&V Guide).

5.4.2 Planning to Collect Data for EPIAs

Energy performance improvement actions listed on the Opportunity Register with very roughly assumed energy saving greater than 1.0% of the energy baseline value for that type of energy which are selected for implementation will need to have post implementation energy savings values determined. Consideration shall be given to how post implementation energy savings will be calculated.

Energy savings calculations for any EPIA shall not be as rigorous as those performed for IOU incentivized custom capital projects and a detailed M&V plan is not needed.

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The data needed to calculate annualized energy savings for each action will be unique and consideration of necessary pre and post energy consumption and relevant variable (e.g., operating hours) data and data sources shall be identified. The specificity of the data and subsequent energy savings calculation should be proportional to the assumed energy savings potential of the action.

Energy savings do not need to be determined for EPIA with energy savings roughly estimated to be less than 1.0% of the energy baseline value for that type of energy. Energy savings for these EPIA still can be estimated as seen fit by the customer and implementer. These can be, “back of the envelope,” type calculations.

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6 Collecting Data and Assessing Data Quality

6.1 Introduction

Energy data collection is conducted regardless of if an energy consumption adjustment model can or will be developed. Collected data may be used later if operations or other factors change as that data provides information about facility operations in relationship to the energy management system and captures results of implemented EPIA.

The intention is customer should be collecting all energy and relevant variable data. During the first SEM program engagement the IOU may provide energy data to both the customer and implementer directly. In subsequent SEM program engagements the customer should collect both energy and relevant variable data and either use this directly as part of the M&V process or provide it as appropriate to the implementer.

6.2 Process

The Energy Data Collection Plan shall be continuously used to guide the collection of energy consumption and relevant variable data in the Energy Data and Performance Tracking Tool. The customer shall ensure that data needed to calculate energy savings for implemented EPIAs listed on the Opportunity Register are collected as needed. Data pertaining to specific EPIAs do not necessarily need to be tracked in the Energy Data and Performance Tracking Tool. The collection, recording, and maintenance of data shall be led by the customer.

6.3 Collecting Data

The implementer shall ensure that data are being collected in accordance with the Energy Data Collection Plan on at least a monthly basis to ensure that data are being accurately collected and recorded.

The collection, recording, and maintenance of data shall be led by the customer. Energy data shall be recorded in the Energy Data and Performance Tracking Tool. Raw source data shall be preserved along with modifications made to data. Data continuity is critical to maintaining energy consumption adjustment model accuracy through the SEM program engagement.

As data are collected, issues that arise with implementing the Energy Data Collection Plan shall be documented and used to assess if modifications to the Energy Data Collection Plan are needed.

6.4 Reviewing for Data Outliers and Missing Data Points

Data outliers and missing data points can negatively impact the accuracy of energy consumption adjustment models.

Data outliers and missing data points shall be identified and addressed. Analysis conducted to identify and address data points shall initially be led by the implementer with the customer learning. The implementer also shall be responsible for teaching the customer how to identify and address data outliers and missing data points such that in subsequent SEM program cycles the customer can lead this activity with implementer support and review.

Energy consumption and relevant variable data shall be screened for anomalous values that are not representative of typical operating conditions. If high variability is characteristic of the operation, outliers do not necessarily need to be removed. Data outliers can be an indicator of poor operational control and can be used to help identify possible energy performance improvement actions. The effect of outliers on the reliability of energy consumption adjustment models and the reason for removing them shall be maintained as a record in the M&V Report.

If an anomalous value is found, reasons for the anomaly shall be identified if possible. If the anomaly is determined to be a data error, the error shall be corrected if possible. If the anomaly

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is determined to be a data error that cannot be corrected, the anomalous value shall be deleted from the data set. The effects of data errors on the reliability of the energy consumption adjustment model and the reason for making any changes to the data set shall be maintained as a record in the M&V Report. If the anomalous value is determined not to be a data error it shall be left in the data set.

An initial review for outliers and missing data can be conducted by creating time series plots of data for energy consumption and relevant variable independently in a time series format. Outliers and missing or erroneous entries shall be flagged for review, investigation, and correction (if possible) by applying a general rule for identifying data that lie outside the range of plus or minus three standard deviations from the mean.

A resolution strategy shall be developed for identified outliers. If outliers related to specific operating conditions are excluded from the Baseline Period, the intervals in the SEM Program Engagement Period corresponding to the same conditions must also be excluded from the Reporting Period. The strategy used to remove outliers shall be documented as part of the M&V Report.

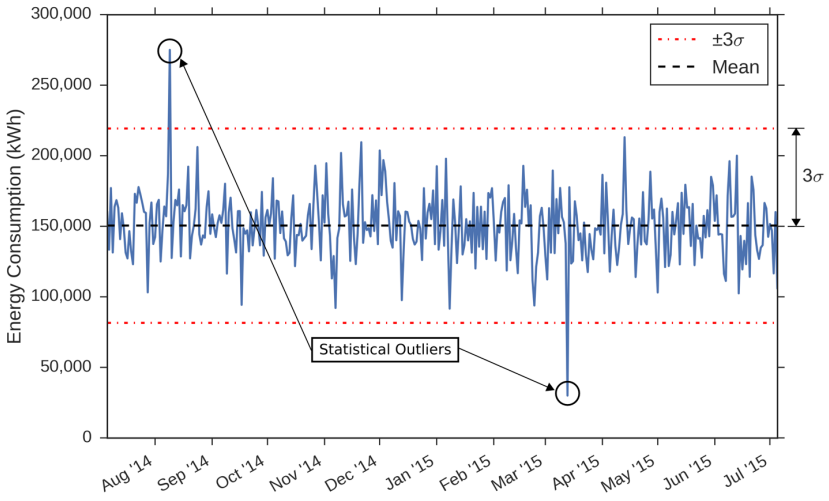


Figure 2. Example of Graphical Methods to Identify Outliers.

Omitted data shall not be replaced with a calculated interpolation. Filling in missing data can skew energy consumption adjustment model validity.

> NOTE: A particular type of outlier results from shut-down periods where production is zero. In some facilities, this may only occur for a handful of days per year. If a single energy consumption adjustment model can be created that reflects both the production and non-production days, the shut-down outliers do not need to be excluded. Alternatively, a relevant variable can be created to account for the effect of reoccurring shutdown days. If an otherwise valid adjustment model cannot be created to accommodate the shut-down periods, these periods may be excluded from the model or treated as a separate mode of operation and modeled independently. When determining a strategy, consider whether energy savings are expected to be achieved during shutdown periods.
>
> NOTE: Outliers should not be excluded from data sets unless there is a reason to do so. For example, a facility may have outliers on major holidays. Consider

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adding an indicator variable to represent those holidays, or simply exclude these holidays from the model. Note that any reoccurring periods that are excluded from the baseline model must also be excluded from the SEM Program Engagement Period.

NOTE: Be careful to distinguish between a zero-data point and a missing data. Missing data should be excluded and not treated as a zero.

NOTE: The removal of outliers, especially in the cases when data is collected on a monthly basis, can significantly affect an energy consumption model's predictive power. Careful consideration should be made regarding the removal of outliers when data is collected on a less frequent basis.

Outliers shall be reviewed by the customer and implementer so that both parties understand the cause of the anomaly. The customer shall take corrective action to reduce the potential for data outliers if possible as outliers can be an indicator of poor operational control or data collection systems. The customer shall update the Energy Data Collection Plan if appropriate. The omission of data points shall be documented in the M&V Report.

6.5 Adjusting Data for Time-Series Offsets

Energy consumption and relevant variable data will frequently not be available for exact calendar months or aligned with other time intervals. For example, monthly production data may be reported on the first of the month, while utility data may be provided mid-month. Alignment of time intervals is preferred and may facilitate development of more representative adjustment models, but it is not required.

A time-series offset may exist between energy consumption and relevant variable data. Energy consumption and relevant variable data shall be reviewed to identify time-series offsets. This most commonly occurs when data are collected at high frequency levels (typically weekly or higher). Time-series offsets that negatively affect adjustment model development shall not be used.

Time-series plots shall be used to identify consistent offsets between energy consumption data and each relevant variable (**Error! Reference source not found.**). For example, if an energy-intensive process has a two-day lead time from the point at which production levels are measured, a two-day time series adjustment may need to be applied to the production variable.

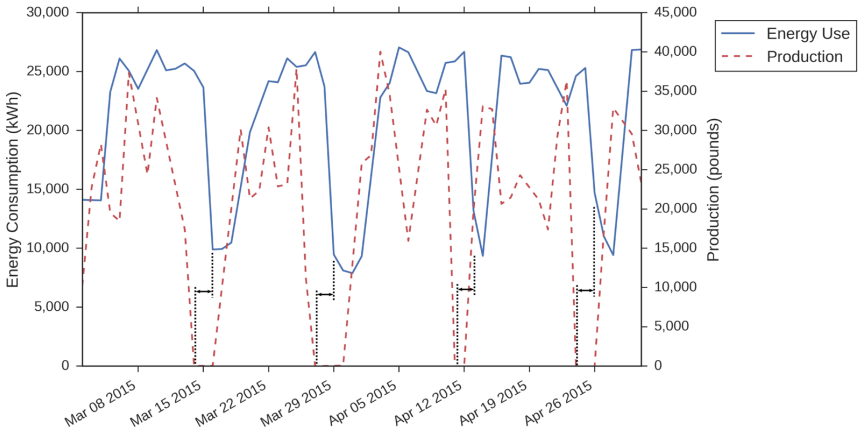


Figure 3. Example of a Time-series Plot (Energy Consumption and Production vs. Time). Arrows Indicate the Time-series Offset.

If such an offset is identified, the customer and implementer shall discuss if the application of a time-series adjustment, or if aggregating data such that the data frequency interval is slower

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(e.g. aggregate so that all data are represented on a weekly rather than daily time interval), would improve the adjustment model. The decision to use a time-series adjustment shall be documented as part of the M&V Report.

As part of an IOU sponsored SEM program engagement, data collected on a monthly basis or irregular time intervals (such as billing cycles roughly issued on a monthly basis) should be weighted based upon the number of days in the month the data were collected. Weighting should be based upon the number of days within the month or irregular time interval. These weighted values should be recorded alongside the original values and weighting value.

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7 Energy Consumption Adjustment Modeling

7.1 Introduction

The primary method for determining energy savings is to develop and use one or more energy consumption adjustment models for each type of energy identified in Section 3.3.

This M&V Guide has multiple stated goals for the development and use of energy consumption models: 1) to determine facility wide energy savings, 2) for the customers to develop a deeper understanding of their facility and operations in relationship to energy consumption and use, and 3) eventually for the customer to be able to lead the M&V process on their own, which includes the development of energy consumption adjustment models.

The development of energy consumption adjustment models can be a complicated process and the implementer shall work with the customer over multiple SEM program engagements to teach the customer how models are developed. To aid in the customer's understanding of their facility and ability to develop energy consumption adjustment models, the implementer shall strive to develop simple and easily understood models rather than complex models that may statistically be more precise. Multiple energy consumption adjustment models for a specific type of energy may be needed to achieve this simplicity principle.

While a number of energy consumption adjustment modeling methods exist, the forecast method shall be used if energy consumption adjustment models are to be developed as part of an IOU sponsored SEM program engagement. The forecast modeling method meets all of the goals and objectives identified in this M&V Guide.

The forecast energy consumption adjustment model method allows the model user to estimate what Reporting Period energy consumption would have been if the facility had not implemented any EPIAs during the Reporting Period and operated as it did during the Baseline Period.

The forecast method provides a predictive energy consumption adjustment model that once developed can be used to track energy performance and routinely determine energy savings.

The forecast model can also be used to project energy demand if future relevant variable quantities, such as production volume, are known.

Alternative modeling methods do not necessarily meet all of the objectives for energy consumption adjustment models identified in this M&V Guide and do not necessarily offer an opportunity for immediate customer education and ability to respond to unexpected model results.

This M&V Guide acknowledges that the forecast model method does have limitations, particularly if facility energy use and operating conditions change significantly during the Reporting Period. If forecast models cannot be developed for a given type of energy then the implementer may use the backcast model method for the purposes of regulatory reporting of energy savings. Only the backcast model method is provided as an alternative in this M&V Guide. This limitation is intentional as to deter excess expenditure to develop any working energy consumption adjustment model and help ensure the focus of the M&V process remains on customer education and building systems that, in the future, the customer can use on their own.

Rationale for the use of the backcast model over reporting energy savings aggregated from implemented EPIAs must be supported and accepted during the Technical Review and documented in the M&V Report. Such rationale could include assumptions that significant energy savings will be achieved from operational actions that would not be accounted for by the aggregation of energy savings for EPIA listed on the Opportunity Register.

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All energy consumption adjustment model parameters (including the relevant variables, units, and associated coefficients used to make the model) shall be included in the M&V Report.

This M&V Guide acknowledges the complexities and skill needed to develop energy consumption adjustment models, especially when they will be evaluated as part of regulatory oversight and potentially used to determine performance incentive payments.

The implementer shall provide detailed instructions for energy consumption model management (e.g., energy data handling, unit conversions, time interval manipulations as well as customer provided data queries) in subsequent SEM program engagements with acknowledgement that customer staff turnover can be detrimental energy consumption adjustment model upkeep and performance.

7.2 Process

Based upon the considerations above, development of one or more energy consumption adjustment models for each energy type should be considered with the following process:

1. Assess if development of energy consumption adjustment models should be attempted.
2. Establish the relationship of relevant variables to energy consumption.
3. Develop energy consumption adjustment models.
4. Review competing energy consumption adjustment models.
5. Select energy consumption adjustment models for use to track energy performance and calculate energy savings.

7.3 Assessing if Modeling Should be Attempted

As energy consumption adjustment models are intended to meaningfully represent the facility's relationship of energy consumption to relevant variables, both the Baseline Period and Reporting Period need to be reflective of relatively normal operations and free of numerous anomalous events and large structural changes to the facility.

While use of energy consumption adjustment models to calculate energy savings is the preferred method of this M&V Guide, the ability to use aggregated energy savings from individual EPIAs listed on the Opportunity Register allows for the potential to assess and decide not to create energy consumption models for one or more types of energy included in the M&V process.

The following are potential indicators that either energy consumption modeling efforts should not be made or that additional review and scrutiny should be placed on models as they may not be able to be used to calculate valid energy savings.

Before or at the beginning of the SEM program engagement:

- Estimated facility wide energy savings potential is less than 3% of annual facility energy consumption or less than 100,000 kWh of electricity per year.
- Existence of major facility, production, or schedule changes in the past year or planned in the next year.
- Facility energy consumption is increasing at a rate greater than a few percent per year.
- EPIAs with greater than 5% of facility baseline energy consumption have been planned for implementation in the Baseline Period or in the SEM Program Engagement Period.
- Highly variable production, production cycles longer than a month, or seasonal production are observed.
- On-site energy generation isn't metered.
- More than 10 energy meters for a given type of energy are identified.

During the SEM Program Engagement Period:

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- Energy and relevant variable data are not being collected and facility staff are not indicating interest in correcting this issue.
- Energy and relevant variable data are recorded in a format that will require excessive time to process (e.g., PDF, manual logging sheets).
- Energy data quality is poor (e.g., missing intervals, multiple data points appear to be erroneous, interval data isn't consistent with billing data).
- Relevant variable data quality is poor (e.g., significant missing intervals, multiple data points appear to be erroneous).

The decision and rationale to not start or not continue energy consumption adjustment model development shall be approved by the IOU as part of the technical review and recorded in the M&V Report.

7.4 Considerations when Developing Energy Consumption Adjustment Models

The below sections shall be considered when creating energy consumption adjustment models.

7.4.1 Energy Data from Multiple Meters

When developing energy consumption adjustment models consider the following when energy data for a given type of energy is available from multiple meters. One of the following options shall be followed:

- Aggregate energy data. Sum the data from two or more meters to create an aggregate of facility energy data. If meter data is collected at different intervals, aggregate to the largest sampling interval. This method is appropriate when:
  - Meters have the same interval, or the meter capturing the greatest energy consumption has the largest sampling interval.
  - The same relevant variables apply to all meters.
  - The resulting energy consumption adjustment model created by using the aggregate data is simple and meaningful.
- Build separate energy consumption adjustment. Build an individual energy consumption adjustment model for each meter. Energy savings calculated for each model will be aggregated. This method is appropriate when:
  - An aggregate energy consumption adjustment model will have large a number of relevant variables.
  - Meters serve different areas or processes with different relevant variables.
  - Meters have different measurement intervals, especially if a meter with the largest energy consumption has much finer granularity than the other meter(s).
  - The customer prefers separate models for greater context of energy performance tracking and energy savings.
- Ignore meters. If the loads connected to a meter are outside the M&V boundaries or are used to meter negligible load, exclude these meters.

7.4.2 Establishing Relationships Between Energy Consumption and Relevant Variables

Energy consumption adjustment models shall be created based upon an informed understanding of the characteristics of the equipment, operations, and processes present within the M&V boundaries.

Use scatter diagrams to visually confirm whether a linear relationship exists between energy consumption data for each type of energy for which energy savings are being determined and each relevant variable. These graphs shall be included as part of the M&V Report and should be available for the Technical Review.

Though not statistically tested at this point, a lack of relationship between energy consumption and a relevant variable for which a relationship was expected shall prompt a discussion

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between the customer and implementer. This result may be due to poor operational control or a mischaracterization of the facility.

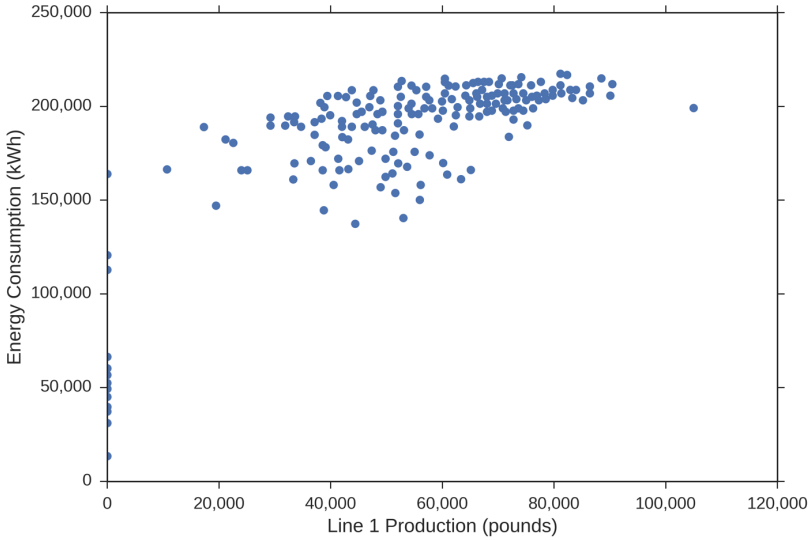


Figure 4. Example of a Scatter Plot (Energy Consumption vs. Production).

Facilities that have an ambient-dependent energy profile will often exhibit a “change-point” characteristic. The presence of a “change-point” can be determined by plotting a relevant variable versus energy consumption. Modeling a facility that exhibits a change-point with a single linear model introduces unnecessary error. Consider alternative relevant variables or a Multi-Mode Model if a change-point is observed.

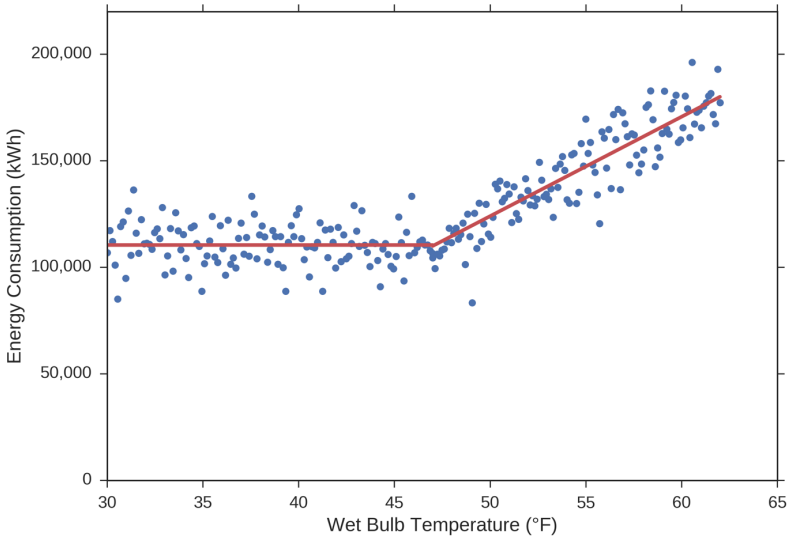


Figure 5. Example of a Change-point.

When two or more relevant variables exhibit correlation for the same energy type, multicollinearity is present. Adding and removing variables from the adjustment model will affect the significance of other variables. The presence of collinear variables can understate the statistical significance of individual relevant variables. Although in many cases multicollinearity

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is unavoidable, it reduces the ability of statistical tests to establish model validity. While multicollinearity does not affect the model's predictive capacity, it has the potential to add unnecessary complexity. See Annex D – Multicollinearity and Autocorrelation, for a discussion on the effect of multicollinearity on an adjustment model.

Weather can be represented in terms of average temperature for each model interval, or cooling degree days (CDD) and heating degree days (HDD). When developing energy consumption adjustment models both approaches should be examined. For weekly and monthly models, a CDD/HDD model is preferred because it better represents heating and cooling demands over an aggregate period. For daily models, a CDD/HDD model is functionally equivalent to an average temperature model with a change point.

Weather correlation often masks other seasonal changes. Judgment and knowledge about the facility and its equipment should be used to determine whether energy consumption is truly affected by ambient weather. If no justification exists for a weather correlation, identify a more appropriate relevant variables to characterize the seasonal changes.

7.4.3 Factoring for Seasonality

Many facilities experience seasonal swings in operation. Swings can occur because of seasonal changes in product type, product quantity, or correlations between ambient temperature and process loads. When operational swings cause a fundamental change in the energy consumption of a facility, consider building multiple models.

If seasonal changes are moderate and gradual, a single model will generally be sufficient to characterize the entire energy baseline.

If a facility has a short period of abnormally high or low production with a different energy signature, or a negligible number of shutdown days throughout the year, consider removing these periods in the Baseline and Reporting Period as outliers.

If seasonal changes are abrupt and extreme, consider creating a model that includes a production based relevant variable and another model that does not.

Facilities experiencing swings due to weekend shutdowns are best modeled as one model with Saturday/Sunday/weekend indicator variables for simplicity.

Table 2 outlines the pros and cons for building one model versus two models.

Strategy	Pros	Cons
Single model with assumed year-round savings	Captures savings at all intervals. Easier to maintain one model than two. Most straightforward method, if energy consumption stays consistent.	Periods with abnormally high or low production can skew the model. Seasonal production relevant variables can lead to complex models with many relevant variables.
Single model with abnormally high or low production periods removed	Improves model accuracy during normal production periods. Works well if energy efficiency opportunities are minimal during excluded periods.	Reduces number of baseline data points. Unknown number of future data points due to production changes.
Dual production/non-production model	Each model has fewer variables and is easier to understand. Can improve model fitness compared to single model.	Maintenance of two models. Reduces number of baseline data points for each model.

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Table 2: Options for Modeling for facilities with Production Swings

7.4.4 Frequency of Data used to Create Models

When possible, use daily intervals to develop energy consumption adjustment models. Models based on daily data allows the customer to track energy performance frequently during the SEM Program Engagement Period and can improve overall model accuracy by increasing the number of Baseline and Reporting Period data points. Meter data can often be acquired in 15-minute intervals and summed into daily energy data. The frequency of energy data will need to match that of relevant variable data.

If a multi-day time-shift exists between energy consumption and the primary production relevant variable, consider using weekly model rather than a daily model.

If daily production or other relevant variable data is not available, weekly or monthly model intervals can be used. Weekly model intervals are preferred over monthly. Ensure that energy consumption data is accurately summed to match relevant variable intervals.

7.4.5 Energy Baseline

7.4.5.1 Establishing the Energy Baseline

The energy baseline shall proceed the SEM Program Engagement Period and consist of a time period that is representative of normal operations within the facility. An energy baseline shall be established for each energy consumption model being developed.

Ideally, the Baseline Period will end immediately prior to the start of the SEM Program Engagement Period. The Baseline Period shall not end more than three months prior to the beginning of the SEM Program Engagement Period. The three-month allowance provides for abnormal operations not expected to be observed again. The rationale for not ending the energy baseline immediately before the start of the SEM Program Engagement Period must be documented in the M&V Report and discussed during the Technical Review.

The Baseline Period shall be 12 or 24 consecutive months with the following considerations:

- 12 months: Appropriate for sties with weather-dependent and seasonal operations. A 12 month baseline shall be the first choice. The 12 month period could be a calendar year, fiscal year, or other designated 12 consecutive months.
- 24 months: For highly seasonal models or models with monthly intervals, a 24 month Baseline Period may be optimal.

When choosing a Baseline Period length consider the reasonable ability to identify the implementation date and energy savings of EPIA implemented during the Baseline Period.

7.4.6 Accounting for Energy Projects During the Baseline Period

In order to create energy consumption adjustment models that reflect regular facility operations, customer and IOU records shall be reviewed to determine if any incentivized or non-incentivized EPIAs with sizable energy savings were implemented during the Baseline Period. In addition to reviewing customer records, interviews with customer staff shall be conducted to determine if other non-incentivized EPIAs or changes that increased energy consumption occurred. If the customer had previously participated in an IOU sponsored SEM program engagement the Opportunity Register from that engagement shall be reviewed for implemented EPIAs.

If such EPIAs were implemented during the Baseline Period, project records shall be obtained to accurately capture implementation dates and the magnitude of verified savings as needed. Ensure these EPIAs are documented on the Opportunity Register.

If EPIAs implemented during the Baseline Period are identified, consider modifying the Baseline Period to a time period when the EPIA was not implemented. If the EPIA was implemented after

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the Baseline Period and prior to the start of the SEM Engagement Period remove annualized energy savings in accordance with Section 11.7.

If the Baseline Period includes implemented EPIAs confirm that the IOU does or does not have approved annualized energy savings values for the EPIA. Approved energy savings values shall be used for any adjustment made because of the EPIA. If IOU approved energy savings values are not available calculate energy savings for the EPIA following the requirements of this M&V Guide (see Section 12).

Use prorated energy savings values to adjust the energy consumption of the Energy Baseline using IOU approved energy savings values if they are available. Prorating of energy savings should be based upon the EPIA implementation date. Confirm the implementation date recorded by the IOU, if available, against the records and memory of facility staff. Use the implementation date that best connects to when energy savings resulting from the EPIA would have been realized.

EPIAs that are known to have a seasonal nature can be removed from the energy baseline accounting for known seasonality.

7.4.7 Continued use of Energy Baselines and Energy Consumption Adjustment Model(s)

Over the course of one or more SEM program engagements, changes to the operations, production, or equipment can invalidate energy consumption models. If during periodic checks or the Technical Review an energy consumption adjustment model is found to not be valid per the quantitative and qualitative tests in this M&V Guide first examine if the model can be updated or if the energy baseline and energy consumption adjustment model are no longer viable.

If the energy baseline is no longer viable or current energy consumption adjustment model is now invalid, use of the energy consumption model shall be suspended. Development of a new energy baseline and energy consumption model shall be conducted. Depending upon reporting timing energy savings may need to be determined and reported via aggregation of energy savings for individual EPIAs listed on the Opportunity Register.

An energy consumption adjustment model and its associated energy baseline that was approved for use during a pervious SEM Program Engagement Period may be accepted for continued use so long as all of the following are true:

- The customer has continuously participated in an IOU sponsored SEM program engagement since the original development of the energy consumption adjustment model (with an allowance for gaps between SEM program engagements resulting from cohort launch or other timing issues).
- Annualized energy saving values that were submitted and accepted by the CPUC for all Reporting Periods that preceded the current Reporting Period are available.
- The energy consumption adjustment model and energy baseline data meet the quantitative and qualitative requirements of this M&V Guide.
- A completed Opportunity Register from prior SEM program engagements, for which the energy consumption adjustment model was used, is available.
- Relevant variables selected as part of the process detailed in Section 4 are not different than those used in the existing energy consumption adjustment model.
- More granular energy consumption and relevant variables data are not available compared to that used in the existing energy consumption adjustment model.
- The M&V boundaries have not changed.
- The customer has not requested a new model.

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The above listed criteria shall be reviewed at the Technical Review meeting. If, following the Technical Review meeting, the energy consumption adjustment model is not approved for use by the IOU sponsoring the SEM program engagement the energy consumption adjustment model is not allowed for use and a new energy baseline and energy consumption adjustment model(s) shall be developed.

The IOU sponsoring the SEM program engagement may at its discretion require a new Baseline Period, energy baseline, and energy consumption adjustment model development. This may be required at the beginning of new SEM Program Engagement Periods to create a distinct basis for energy savings determination and to remove all residual effects of existing energy consumption adjustment models.

7.5 Developing Energy Consumption Adjustment Models

Using information gathered as part of the M&V process, for each energy type for which data are collected, develop one or more energy consumption adjustment models with the form:

$$\mathrm{ECD}(*)=b_0 + b_1x_1 + b_2x_2 + \cdots + b_nx_n$$

where x_i is the relevant variable quantity, b_0 is the base load delivered energy consumption not related to relevant variables, and b_i (when $i > 0$) is the incremental energy consumption per unit of that relevant variable (coefficient).

Attempts shall be made to develop one or more energy consumption adjustment models for each energy type that encompass the full M&V boundary in order to capture facility-wide energy savings. If development of models to encompass the full M&V boundary is not possible then developing multiple energy consumption models within that "fit" within the M&V boundary shall be attempted.

Depending on the list of selected relevant variables identified in the Energy Data Collection Plan for which data were collected, attempts shall be made to develop competing models that can be assessed with the quantitative and qualitative validity tests described in the energy consumption adjustment model validity section (7.6) of this M&V Guide.

7.5.1 Simplicity principal

The desire to create the most descriptive or "perfect" model can lead to a disproportionate use of resources. The objectives of creating energy consumption models extend beyond creating tools to estimate facility-wide energy savings.

Simple energy consumption adjustment models have multiple benefits:

- Easier data collection: In some cases, collecting production data may be a burden to the customer. Minimizing the data requirements for a customer may increase buy-in to data collection and use of the energy consumption adjustment models.
- Better understanding of the model: A model that can be easily explained will be better understood by the customer, which will increase their trust in the energy savings predicted by the final model.
- Reduced likelihood of outliers and errors: A model with fewer variables is less likely to suffer from data-entry errors and/or outliers during the Reporting Period. A simple model is more "durable" and therefore more useful to a customer long-term.

Customers need to be able to understand the modeling process and outputs so they can track energy performance and determine energy performance improvement using the model. Teaching the customer to make simple, meaningful models and when to stop modeling efforts in favor of aggregated energy savings from individual energy performance improvement actions will benefit the customer in the long run.

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As guidance, if five or more relevant variables are being used in a single energy consumption adjustment model, the model should be split if possible by using data from multiple meters. Alternatively, remove relevant variables from the model to see if the loss of some statistical validity creates a simpler, more understandable model.

However, also consider that an energy consumption adjustment model which is too simple and does not include sufficient relevant variables can provide poor predictive capability. Weigh the pros and cons of each combination of variables to determine a minimal level of model complexity while providing adequate energy savings estimations.

7.6 Reviewing Competing Energy Consumption Adjustment Models

The selection of energy consumption adjustment models that will be used to track energy performance and determine energy performance improvement shall be made based upon quantitative and qualitative model validity testing described in this M&V Guide.

While acknowledging that this M&V Guide states an objective for the customer to increasingly lead the process of model development, the implementer shall be responsible for ensuring the validity of energy consumption adjustment models that will be used to calculate energy savings used for regulatory reporting. Model validity will be reviewed as part of the Technical Review.

If leading the M&V process outside of an SEM program engagement, the customer may not wish to stringently apply these validity tests. A customer can make meaningful use of energy consumption adjustment models that have lower statistical validity than would be acceptable for regulatory reporting.

7.6.1 Assessing Statistical Significance of Relevant Variables

To establish quantitative validity, each relevant variable used in an energy consumption adjustment model shall meet all of the following statistical tests:

Statistical Tests	Statistical Test Threshold Values
T-stat	Absolute value > 2.00
p-value	< 0.05

Table 3: Relevant Variable Statistical Tests

Adding and removing relevant variables will affect the significance of other relevant variables. In many cases, multicollinearity is unavoidable; however, it should be taken into consideration when validating the statistical significance of each relevant variable. While multicollinearity does not affect the model's predictive capacity, it has the potential to add unnecessary complexity. See Annex D – Multicollinearity and Autocorrelation, for more information.

7.6.2 Validating Models with Statistical Tests

The following statistical tests shall be applied to all energy consumption adjustment models:

Statistical Tests	Statistical Test Threshold Values
Number of Relevant Variables	< 5
Model R^2	> 0.75
Net Determination Bias	< 0.005%
Coefficient of Variation	< 20% for daily models
	< 10% for weekly models
	< 5% for monthly models
Durbin-Watson	~ 2
Fractional Savings Uncertainty (predictive)	< 50% Apply anticipated energy savings and Reporting Period interval frequency.

Table 4: Energy Consumption Statistical Tests

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The selection of energy consumption adjustment models should not be narrowly driven by evaluating which model "best" meets statistical tests as meaningful models may not meet all listed statistical tests. For example, a low R^2 value may be the result for a facility with low variation in energy consumption. In cases where all of the tests cannot be met but a model passes a majority of the statistical tests and meets the qualitative requirements of Section 7.6.3, the customer and implementer together shall select which models to use moving forward. The selection rationale shall be documented in the M&V Report and will be reviewed during the Technical Review.

7.6.3 Validating Models with Qualitative Considerations

Equal to the statistical validity tests, the selection of energy consumption models shall be based upon assessment of qualitative considerations including that:

- The selection of relevant variables in the adjustment model and the subsequently determined relevant variable coefficients are consistent with a logical understanding of the energy use and energy consumption of the facility.
- No substantial difference between the two periods in product types.
- Meters used were functioning, calibrated, and maintained as appropriate.

Additionally, considerations including the simplicity of the energy consumption adjustment model, meaning of the model to the customer, and the ability to continue collecting data required for use of the model shall be considered.

7.6.4 Table of Competing Models and Selecting Models for Use

A table of competing models shall be created for each energy consumption adjustment model development effort and provided in the M&V Report. While many variations of model may be developed, ideally around 5 with a maximum of 10 of the most meaningful of the competing models should be listed on the table of competing models. The table shall include a row for each competing model a column for each of the following:

- Model reference number.
- Data interval (frequency).
- Baseline Period start and end dates.
- Upcoming Reporting Period start and end dates.
- R^2.
- Net determination bias.
- Coefficient of variation.
- Durbin Watson.
- Projected fractional savings uncertainty.
- Comments about the model.

Four columns of each row should be subdivided to provided information about the relevant variables that are used to form the model. The four columns should include:

- Name of the relevant variable.
- Relevant variable coefficient value.
- T-stat.
- P-value.

The table of competing models shall be filled out as the energy consumption adjustment modeling development effort proceeds. The table of competing models should be used along with qualitative assessments to select energy consumption adjustment models that will be used to track energy performance and calculate energy savings.

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7.7 Ongoing Confirmation of Model Validity

On a monthly basis, confirmation of model validity shall be conducted. This review shall be led by the customer when their skills and abilities relative to the M&V process improve to an appropriate level. The implementer shall confirm model validity prior to the customer assuming this responsibility.

Ongoing confirmation of model validity shall include answering the following questions:

- Have operating characteristic remained similar?
- Has production stayed within the range as recorded during the Baseline Period?
- Has any major energy uses been installed?
- Does the level of energy savings achieved so far align with energy savings from implemented EPIAs listed on the Opportunity Register?
- Has the facility or M&V boundaries changed?

Analysis of data collected for use with the selected energy consumption adjustment model shall be conducted as well. Individual data intervals in the Reporting Period should be flagged if a relevant variable data point is $\pm$10% beyond the bounds of the energy baseline data set. These points may be handled in one of three ways:

- Include the point without alteration.
    - This is appropriate if the residual for the point is not an outlier compared to the overall population of residuals.
- Exclude the point.
    - This is appropriate if the residual of the outlier point is an outlier compared to the overall population of residuals. In this case the energy savings from this outlier point would have an outsized effect on the energy savings measurement.
- Develop a new energy consumption adjustment model.
    - This is appropriate if the outlier interval data points are caused by an issued that will fundamentally result in an energy consumption adjustment model that does not have a meaningful relationship to the energy consumption, uses, and operations of the facility.

In preparation for the Technical Review the above questions shall be answered in addition to confirmation that the selected energy consumption models still pass the quantitative and qualitative validity requirements of this M&V Guide.

7.8 Options when a Valid Energy Consumption Adjustment Model Cannot be Created

Energy consumption adjustment models that do not meet the quantitative and qualitative validity requirements of this M&V Guide cannot be used in the calculation of energy savings as part of an IOU sponsored SEM program engagement and may potentially mislead customers.

If such a case occurs, the party responsible for developing energy consumption adjustment models shall first attempt to modify the forecast adjustment model. This process might include modifications to the assumed relevant variables and frequency of data collection. Any changes that result in a successful energy consumption adjustment model shall be noted in the Energy Data Collection Plan to ensure ongoing collection of data needed to use the model.

Changes to the Baseline Period are allowed for as detailed in Section 7.4.5 but should be cautioned against. The objective of the M&V process is not to hunt for a valid model but to collect data and assess if a model can be made to meaningfully represent the relationship of energy consumption to relevant variables.

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If the M&V boundary is supplied by multiple meters, disaggregating the meters may result in better model resolution.

7.8.1.1 Non-Routine Adjustments to the Baseline Energy Consumption

Non-routine adjustments are made to the observed (actual) energy consumption in the baseline and/or Reporting Periods if one or both of the following have occurred:

1. If static factors have changed during the SEM Program Engagement Period.
2. If relevant variables have been subject to unusual changes.

Examples of events that might require a non-routine adjustment include the following:

- A supplier goes out of business, and an equivalent raw material is not available. A process modification is needed to use a different type of raw material. No data exist for Baseline Period operating conditions with the new type of raw material.
- Processes are outsourced, enhancing profitability and decreasing energy consumption.
- Business acquisition occurs which results in data not being available or limits on the data availability for the period prior to the acquisition.

Any numeric inputs to non-routine adjustment calculations shall be based on observed, measured, or metered data.

Non-routine adjustments are typically based on an engineering analysis to calculate energy consumption in the baseline and Reporting Periods as if static factors were at the same condition in both periods. In this case, the adjustment will be to calculate Baseline Period energy consumption as if the Reporting Period condition of the static factors had been the same as in the Baseline Period.

The effort expended to calculate the amount of energy the non-routine adjustment will result in should be less than that of incentivized custom capital project and proportional to the level of expected energy adjustment.

The method for making the non-routine adjustment and the rationale for that method shall be maintained, including the general reasonableness of the methodology and calculations, the adequacy of the metering and monitoring methodologies, and conformance of the calculations applied. Non-routine adjustments may be used, but only after review and approval from the IOU. The method for making the non-routine adjustment and the rationale for that method must be documented in the M&V Report.

7.8.1.2 Backcast Energy Consumption Adjustment Model Development Method

If forecast energy consumption adjustment models still cannot be created, use of the backcast method to develop energy consumption adjustment models can be considered. The development of a backcast energy consumption model is optional.

Backcast normalization results in a model of the Reporting Period energy consumption that is applied to the Baseline Period and Reporting Period-relevant variable values to calculate adjusted Reporting Period energy consumption for comparison with observed (actual) Baseline Period energy consumption. The adjusted Reporting Period energy consumption is an estimate of the energy consumption that would have been expected at Baseline Period relevant variable values, if the Reporting Period operating systems and practices were in place during the Baseline Period.

The backcast normalization method is applicable in instances where:

- One or more relevant variables has significantly increased or decreased from the Baseline Period through the Reporting Period.

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- The resolution of the energy signature for the Baseline Period was relatively poor and the resolution of the energy signature during the Reporting Period has significantly improved.
- No major operational or structural changes have occurred during the SEM Program Engagement Period.

The backcast modeling method may be used so long as the validity requirements of Section 7.6 are taken into account. The justification and use of a backcast modeling method shall be documented in the M&V Report and presented during the Technical Review.

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8 The Opportunity Register and EPIA Energy Savings

8.1 Introduction

In addition to the development of energy consumption adjustment models, annualized energy savings for each EPIA listed on the Opportunity Register that is estimated to result in energy savings greater than 1.0% of the energy baseline value for that type of energy shall be calculated when the action is implemented.

The implementer shall ensure that annualized energy savings for all implemented EPIA listed in the Opportunity Register that are estimated to result in energy savings greater than 1.0% of the energy baseline value for that type of energy, are calculated and recorded in the Opportunity Register.

Following the implementer's lead, the customer should begin to lead the calculation of energy savings for EPIAs.

8.2 Process

If the EPIA is to apply for a custom capital or deemed incentive the M&V practices governing those programs shall be followed. The energy savings value claimed as part of an incentivized project shall be recorded in the Opportunity Register.

If the EPIA listed on the Opportunity Register will not be used to apply for a custom capital or deemed incentive, the effort expended to calculate energy savings for the EPIA should be less than that of incentivized custom capital project and proportional to the level of expected energy savings. M&V plans for each EPIA are not required. Energy savings calculations for EPIA shall be documented and defendable.

If a rough order of magnitude estimate indicates that implementation of the EPIA will result in energy savings less than 1.0% of baseline energy consumption for that type of energy, "back of the envelope," calculations can be used to estimate energy savings if so desired by the customer and implementer.

On a project by project basis the implementer and customer shall work together to identify who will lead the calculation of annualized energy savings from implemented EPIA. Alternatively, for each SEM program engagement the implementer and customer may come to a common understanding of who will lead the calculation of annualized energy savings for implemented EPIA, so long as there is movement towards the customer having a growing role in this process over the course of multiple SEM program engagements.

The customer shall regularly update and maintain the Opportunity Register. The implementer shall verify, at least quarterly, that the Opportunity Register is updated and maintained.

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9 Tracking Energy Performance

9.1 Introduction

Energy performance calculated with the selected energy consumption adjustment models and the Opportunity Register shall be conducted on a regular basis.

The customer shall track energy performance on a regular basis with implementer support and consultation.

9.2 Process

9.2.1 Tracking Energy Performance with Energy Consumption Adjustment Models

The customer shall collect energy consumption and relevant variable data per the Energy Data Collection Plan and track energy performance using the Energy Performance Tracking Tool.

The customer shall update the Energy Performance Tracking Tool on at least a monthly basis. The customer and implementer shall review the Energy Performance Tracking Tool on a regular basis to ensure data are being collected, energy performance is being calculated correctly, detect anomalous values, and account for situations that did not happen in the Baseline Period and may need to be corrected for. This high-level review should be used to identify changes in trends and decide if corrective actions need to be taken. This review is not intended to be a detailed evaluation of energy performance.

A time-series plot of actual and predicted energy consumption for each energy consumption model in use, shall be created while tracking Energy Performance.

Backsliding refers to worsening energy performance compared to a previous achieved benchmark. Energy consumption adjustment models can be used to provide a feedback loop to identify and correct backsliding. As new energy performance values are reviewed, the implementer and customer shall together assess if energy performance is backsliding. When backsliding is identified, corrective action shall be taken as soon as possible.

9.2.2 Tracking Energy Performance with the Opportunity Register

On a regular basis, the customer and implementer shall together review the Opportunity Register to ensure that EPIAs are being implemented, resulting energy savings are calculated with appropriate effort relative to the expected energy savings, and that within reason energy savings are similar to what was expected.

By reviewing if EPIAs are being implemented, the customer can ensure they are taking action to improve energy performance. If no EPIAs are being implemented an assessment of why they are not being implemented should be conducted.

The review provides the implementer and customer a chance to ensure energy savings from implemented EPIAs are calculated with appropriate relative effort compared to an expected energy savings potential. If the EPIA was incentivized by a different IOU program the energy savings value determined by that program for the EPIA shall be used and recorded in the Opportunity Register.

If calculated energy savings for EPIAs are significantly different than expected, an analysis of why this is the case shall be conducted.

During the energy performance review, energy savings from implemented EPIA listed on the Opportunity Register should be aggregated and compared to established energy targets. This analysis will help the customer and implementer know if adequate progress is being made towards achieving the energy target.

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10 Technical Review of the M&V Process and Results

An annual Technical Review of the M&V process shall be conducted between the implementer and IOU sponsoring the SEM program engagement. The purpose of the Technical Review is to ensure that the M&V process is being followed, valid energy consumption adjustment models are being developed or assessed for continued use, and energy savings for EPIAs listed on the Opportunity Register are being appropriately calculated. The Technical Review is not designed to be part of the CPUC evaluation process.

Materials used as part of the Technical Review should be components of the M&V Report that would be developed regardless.

10.1 Introduction

During the review the implementer shall present to the IOU:

- A synopsis of facility characterization
- Energy Data Collection Plan
- Energy consumption adjustment models selected for use
    - The table of competing models (ideally 5 and a maximum of 10) with quantitative and qualitative test results for each new model selected for use.
    - Confirmation that previously used energy consumption models meet the requirements to re-use models per this M&V Guide.
- The Opportunity Register.

If the Technical Review is successful, the IOU will be able to:

- Confirm that the M&V process outlined in this M&V Guide is being conducted with appropriate customer engagement and leadership.
- Confirm the customer facility has been well characterized based upon the requirements of this M&V Guide.
- Approve the continued use of a previously developed energy consumption adjustment model if requested and appropriate.
- Approve the use of a newly developed energy consumption adjustment model if requested and appropriate.
- Approve requests to not pursue energy consumption adjustment modeling for a given type of energy, if such request is made and appropriate.
- Confirm that the Opportunity Register is being updated appropriately.

10.2 Scheduling the Technical Review

The Technical Review can be conducted in person, remotely via web meeting, or through desk audit by IOU staff. The IOU shall specify how the Technical Review will be conducted.

> NOTE: This M&V Guide assumes an in person or remote presentation will be given and this section is written accordingly. Adjustment made by the IOU are permitted to accommodate how they want the Technical Review to proceed.

The Technical Review should be scheduled first approximately four months after the start of an SEM Program Engagement Period and then approximately every 12 months thereafter. With the current SEM Program Design of three, two-year SEM program cycles this would result in two Technical Reviews per SEM program cycle. It is the implementer's responsibility to schedule the Technical Review once all materials are prepared.

The Energy Data Collection Plan, Energy Performance Tracker Tool populated with model coefficients, and Opportunity Register shall be supplied to the IOU by the implementer at least five business days before the scheduled Technical Review

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10.3 Technical Review Topics

The items below will be part of the Technical Review.

10.3.1 Customer facility synopsis preparation

Keeping to a maximum of 10 minutes, the implementer shall provide a brief presentation of the customer to orient IOU staff.

- What is the customer's business?
- What energy types are being included in the M&V process?
  - Fed by how many meters each
  - % of total load
- Any special M&V boundary considerations such as on-site generation or energy conversion technology?
- What are their major energy uses?
- What relevant variables were selected?
  - Which relevant variables were rejected but may come back into play?
- Review of the energy map.

10.3.2 Energy Data Collection Plan

The current Energy Data Collection Plan shall be electronically provided to the IOU staff as directed. The Technical Review is not designed to detail the contents of the Energy Data Collection Plan but provide time to discuss any questions and concerns. This portion of the Technical Review should normally be kept to 5 minutes but may extend if questions are raised by the IOU staff. The implementer shall:

- Present if there have been unexpected changes to the Energy Data Collection Plan.
- Present which utility or other energy consumption meters are being used.
- Present if there have there been any delays in the customer collecting and tracking data.

10.3.3 Competing Energy Consumption Adjustment Models

For each energy consumption adjustment model developed for use

- Model original development date and prior use.
- Energy Baseline Period.
- Boundaries for the model.
- Energy type model is created for.
- Number of meters feeding data for each energy consumption adjustment model.
- Boundaries of the model (whole-facility, system…).
- Model equation.
- Results of relevant variable statistical tests.
- Results of quantitative validity tests.
- Actual vs. predicted chart (to date).
- CUSUM chart (to date).
- Identification of risks.

10.3.3.1 General

During the Technical Review, the implementer describes to the IOU all energy consumption adjustment models selected for use. For each energy consumption adjustment model being used the implementer shall be prepared to discuss alternative models and why they were not selected for use. Each energy consumption adjustment model shall be discussed between the implementer and IOU. Each energy consumption adjustment model should be discussed for a maximum of 30 minutes.

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10.3.3.2 For New Models

For new models, the implementer shall develop a competing model summary table with notes as specified in Section 7.6.4. This table will be used in the M&V Report as well. Ideally, about 5 and no more than 10 competing models would be presented.

10.3.3.3 For Existing Models

For existing models, the Technical Review should focus on what was done to evaluate the model to confirm validity. This should include:

- Reviewing time series graphs & CUSUM graphs to identify changes in relationship between energy drivers and energy.
- Identifying and accounting for step changes or outliers in the data.
- The customer's success/challenges with managing their model(s).

The IOU shall confirm or reject use of existing models. The IOU can at its discretion require a new Baseline Period, energy baseline, and energy consumption adjustment model development.

10.3.4 Opportunity Register Review

The focus of the Technical Review is not how energy savings values were calculated for the Opportunity Register. The focus is a check that EPIA are being identified, implemented, and energy savings are calculated. Depending upon the types of EPIA listed, discussion of the IOU providing additional or different resources to assist the customer implement the EPIA may occur.

Ensure that EPIAs that received incentives from other programs have correctly recorded IOU claimed energy savings values.

10.3.5 Note Taking and Follow-up

During the session, the implementer shall be responsible for taking notes and keeping records of any follow up questions or requests. These notes and follow up questions should be sent out to all Technical Review attendees immediately after the review session. These notes should be documented in the M&V Report.

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11 Calculating Energy Savings with Energy Consumption Adjustment Models

11.1 Introduction

Energy consumption adjustment models can be used to calculate energy saving realized during the Reporting Period. Energy savings of all types of energy shall be calculated and confidence established for the Reporting Period.

Energy savings calculated during the Reporting Period are not annualized values, meaning the energy savings do not represent the annual savings level that would be projected to persist beyond the Reporting Period. If an energy consumption adjustment model is used for consecutive Reporting Periods the energy savings value for each Reporting Period will reflect the cumulative change in energy consumption since the Baseline Period. Incremental energy savings can be calculated for each successive Reporting Period by subtracting the energy savings of the prior Reporting Period from the energy savings value calculated for the Reporting Period of interest.

As part of an IOU sponsored SEM program engagement and for the purposes for regulatory reporting, annualized energy savings resulting from 1) the implementation of EPIA identified and planned outside of any SEM program engagement as well as 2) EPIA identified at any time that will receive incentive from another IOU program, and are implemented during the current Reporting Period shall be removed from the current Reporting Period annualized energy savings as determined with use of the energy consumption adjustment model.

While the intent is for the customer to learn and eventually lead the energy savings calculation process, steps specifically related to regulatory requirements shall be addressed by the implementer rather than the customer. Ideally, the customer will be able to lead the calculation of Facility-wide Projected Energy Savings but the implementer should then conduct necessary actions to meet IOU and CPUC policy requirements (e.g., non-IOU fuels) and disaggregate the overall energy savings to their component parts as described in Section 11.7.

11.2 Process

In order to calculate energy savings during a Reporting Period the following shall be followed:

1. Establish a Reporting Period.
2. Calculate energy savings realized during the Reporting Period.
3. Annualize energy savings.
4. Consider when energy consumption adjustment models are used for multiple Reporting Periods.
5. Prepare energy savings for regulatory reporting.
6. Establish confidence in energy savings values.

11.3 Establishing Reporting Periods

The customer and implementer shall establish one or more Reporting Periods within the SEM Program Engagement Period. Reporting Periods can be established based upon customer needs and IOU specified reporting requirements. While this M&V Guide establishes the overall process based upon an annual process, the need to calculate energy savings is not required to be performed annually. Establishing a single Reporting Period so that it is the same duration as the SEM Program Engagement Period offers simplicity advantages and can provide a more meaningful retrospect on actions taken to improve energy performance over time. Tracking energy performance on a more frequent basis provides more informative information on which corrective actions can be taken.

Energy savings calculations made during the Reporting Period are by definition not annualized, that is the calculated Reporting Period energy savings value is the actual amount of energy

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saved during the Reporting Period as compared to the energy baseline rather than a forward projection of expected annual energy savings following the Reporting Period.

In many cases the Reporting Period is established as a 12-month period. When a 12-month Reporting Period is used to calculate energy savings the value still is not annualized but rather the energy savings resulting during those specific 12 months.

As understood currently, there is no requirement to report energy savings to the CPUC from the SEM program on an annual basis. Use of a Reporting Period equal to the two-year SEM program engagement Period increases the time for energy management systems to be developed, energy performance improvement actions to be implemented, and data collection system to be established and accurately utilized.

Annualization of energy savings based upon a two-year Reporting Period will provide a single annualized energy savings value that directly reflects the result of the two-year SEM program engagement. This is aligned with how energy savings are reported to the CPUC for capital projects, with energy savings being reported once when the project is implemented, not during and again after implementation.

A drawback to using a Reporting Period aligned with the two year SEM Program Engagement Period is that while energy savings are not required to be reported to the CPUC every year, associated costs of operating the SEM program are. This creates a misalignment of reporting program costs and energy savings. This issue can be addressed in some way by offering multiple SEM cohorts that are started in alternating years.

Unless otherwise specified by the IOU, a Reporting Period equal in duration to the SEM Program Engagement Period shall be established and used for regulatory reporting.

11.4 Calculating Energy Savings During the Reporting Period

For each energy consumption adjustment model selected for use, energy savings during a specified Reporting Period shall be calculated by applying the following equation using observed (actual) and estimated (predicted) energy consumption values as appropriate.

11.4.1 Calculating Energy Savings for Each Interval of the Reporting Period

$$\text{Energy Savings}_{\text{Reporting Period Interval}} = \text{Energy Consumption}^{\text{Modeled}}_{\text{Reporting Period Interval}} - \text{Energy Consumption}^{\text{Observed}}_{\text{Reporting Period Interval}}$$

11.4.2 Aggregating Interval Energy Savings to Calculate Reporting Period Energy Savings

$$\text{Energy Savings}_{\text{Reporting Period}} = \sum_{i=1}^{n} \text{Energy Savings}_{\text{Reporting Period Interval } i}$$

Where

n = number of intervals in the Reporting Period

Energy savings calculated using the above equation are for the current Reporting Period as compared to the energy baseline and will be cumulative of all energy savings activities between the end of the Baseline Period and the current Reporting Period. See Section 11.7.1 to determine incremental energy savings for the current Reporting Period.

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11.4.3 Visualizing Energy Savings

The cumulative sum of differences (CUSUM) calculation is an effective means of quantifying and visualizing energy savings for each type of energy during the Reporting Period.

A CUSUM graph provides an illustration of the total savings achieved as compared to the energy baseline. A CUSUM graph can be accompanied by a time-series plot of actual and predicted energy consumption. A time-series plot of actual and predicted energy consumption for each energy consumption model in use shall be created while tracking Energy Performance as described in Section 9.

The CUSUM of energy savings shall be added to this existing graph of actual and predicted energy consumption.

> NOTE: A national consensus whether to display CUSUM energy savings as a positive or negative value does not exist. Some utility sponsored SEM programs mandate increasing energy savings be displayed as a positive value while other programs mandate the opposite. Implementers and customers can display CUSUM energy savings as positive or negative so long as graphical representations of CUSUM energy savings clearly indicate the direction of increased energy savings. At its discretion the sponsoring IOU may require one approach or the other.

The implementation date of EPIAs listed on the Opportunity Register for which energy savings have been calculated shall be indicated on the CUSUM graph. Confirm the implementation date recorded by the IOU, if available, against the records and memory of facility staff. Use the implementation date that best connects to when energy savings resulting from the EPIA would have been realized.

Significant changes in CUSUM slope, positive and negative, should be investigated with analysis results noted as footnotes to the CUSUM graph.

CUSUM graphs with annotation and footnotes that span all Reporting Periods (current and historic) for which the energy consumption adjustment model has been used shall be provided as part of the M&V Report.

11.5 Annualization of Energy Savings

Energy savings calculated for implemented EPIAs are typically annualized values. As such, EPIA energy savings values are not comparable with energy consumption adjustment model based energy savings calculated during a Reporting Period. Additionally, while it is possible to disaggregate EPIA energy savings from Reporting Period energy savings using an approach that prorates EPIA energy savings using the EPIA implementation date, the concept assumes that energy savings from the EPIA are not seasonally affected and decay or increase over time.

Reporting Period energy savings can annualized through a process sometimes referred to as, “forward projection.” This annualization process uses a brief time period before the end of the Reporting Period (the Annualization Period) to annualize energy savings.

Annualization of energy savings is performed to:

- Convey the expected level of energy savings expected to be realized beyond the Reporting Period.
- Make energy savings comparable to annual energy savings calculated for implemented EPIAs.

11.5.1 Annualization Period

Annualization of energy savings is dependent upon extrapolating energy savings calculated during a short time period established towards the end of the Reporting Period. This time

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period, the Annualization Period, shall be 90 consecutive days within the final 5 months of the Reporting Period.

The Annualization Period can longer than 90 days depending on the variability of the facility but shall be wholly within the final 5 months of the Reporting Period. If the customer's operation is highly seasonal, and only has one model, a longer Annualization Period that addresses seasonal impact on varying energy savings rates should be selected. The rationale for selecting a Annualization Period duration longer than 90 days shall be documented in the M&V Report. Annualization Periods shorter than 90 days shall not be used as they may result in energy savings based on short trends that may not be representative.

Ideally, the end of the Annualization Period should be established as close to the end of the Reporting Period as possible. The rationale for ending the Annualization Period prior to the end of the Reporting Period shall be documented as part of the M&V Report.

11.5.2 Confirming Data Quality within the Annualization Period

Data collected during the Annualization Period should be reviewed in detail to detect anomalous values and account for situations that did not happen in the Baseline Period.

Individual data intervals in the Annualization Period should be flagged if a relevant variable data point is $\pm$10% beyond the bounds of the energy baseline data set. These points may be handled in one of three ways:

- Include the point without alteration.
    - This is appropriate if the residual for the point is not an outlier compared to the overall population of residuals.
- Exclude the point.
    - This is appropriate if the residual of the outlier point is an outlier compared to the overall population of residuals. In this case the energy savings from this outlier point would have an outsized effect on the energy savings measurement.
- Shift the Annualization Period.
    - This is appropriate if the interval in question is towards the end of the current Annualization Period and shifting the period will omit the interval in question while otherwise maintaining the integrity of the Annualization Period.
- Remodel
    - This is appropriate if no Annualization Period can be established during which a valid energy savings value can be calculated.

If an outlier is detected, qualitative justification based on visual representation of the data and quantitative justification should be provided, rationalizing the selected approach used to address the outlier. The selected approach should be documented in the M&V Report.

11.5.3 Calculating annualized energy savings

Annualized energy savings shall be calculated using the following equation:

$$\text{Annualized Energy Savings} = \left(\sum_{i=1}^{n} (\text{Energy Savings})_i\right) \times \left(\frac{n_{\text{year}}}{n}\right)$$

Where

$n = \text{number of intervals in the Annualization Period}$

$n_{\text{year}} = \text{number of intervals in a year}$

With energy savings being calculated using the equation in Section 11.4.1.

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11.5.4 Considerations for Seasonality

When the distribution of relevant variables used for a particular energy consumption adjustment model is expected to be markedly different throughout the Reporting Period, this distribution must be considered when annualizing energy savings. If the ratio of higher to lower expected production level is not anticipated to stay seasonally consistent, the Reporting Period can be divided into two or more distinct periods for a given energy consumption adjustment model. This method is generally only feasible for daily models. There must be a minimum number of intervals (normally 30 for daily models) in each period to justify the split. Use of this method shall be documented in the M&V Report.

11.6 Calculating Annualized Energy Savings for Multiple Reporting Periods using the Same Energy Consumption Adjustment Model

Energy consumption adjustment models can be used for multiple consecutive Reporting Periods. Energy savings values for consecutive Reporting Periods are by nature cumulative of energy savings resulting from actions taken in the current as well as prior Reporting Periods. Incremental annualized energy savings for the current Reporting Period shall be calculated if energy consumption adjustment models are used for more than one Reporting Period as a way of “artificially re-baselining” the energy consumption model.

Incremental annualized energy savings for the current Reporting Period shall be calculated by subtracting the annualized energy savings from the prior Reporting Period from the annualized energy savings of the current Reporting Period. The prior Reporting Period energy savings must be cumulative with all other prior Reporting Periods.

If an energy consumption adjustment model is used for multiple consecutive Reporting Periods then the CUSUM value and graph shall be “artificially re-baselined” by setting the CUSUM value and graph to 0 at the start of each Reporting Period.

If an energy consumption adjustment model is re-baselined (a new energy baseline established and new model developed) any savings achieved prior to the new Baseline Period do not need to be removed from energy savings calculations made for the current Reporting Period as they will have been incorporated into the new model. Energy savings achieved during the Baseline Period must be accounted for following the guidance in Section 7.4.6.

11.7 Classifying Energy Savings for Regulatory Reporting

If incremental annualized energy savings for a given type of energy are calculated for the purposes of regulatory reporting, energy savings resulting from EPIA implemented during the Reporting Period that are incentivized by another IOU program or were identified and planned outside of participation in any SEM program engagement shall be removed from the energy savings value reported.

The following process of removing energy savings resulting from EPIAs implemented during the Reporting Period that are incentivized by another IOU program or were identified and planned outside of participation in any SEM program engagement shall be used and documented as part of the M&V Report.

All types of energy savings for each type of energy shall be documented in the M&V report.

11.7.1 Relationship Between Different Types of Energy Savings

The below listing defines types of energy savings that will be referenced in the process of appropriately removing energy savings from annualized energy savings for each type of energy.

1. ***Facility-wide Annualized Energy Savings***: Incremental, annualized energy savings for a given type of energy resulting from the aggregation of annualized energy savings from

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each energy consumption adjustment model developed for the same energy type. These "modeled" savings encompass all energy saving types listed below.

2. ***Non-SEM Program Energy Savings***: Annualized energy savings calculated for EPIAs identified and planned outside of any SEM program engagement and implemented during the current Reporting Period, whether receiving other incentives or not.
3. ***SEM Program Energy Savings***: Facility-wide Annualized Energy Savings minus Non-SEM Program Energy Savings. This value is the annualized combination of BRO, capital, and deemed projects that were influenced by SEM. This energy savings value is used to calculate program cost-effectiveness.
4. ***SEM Incented Project Energy Savings***: Annualized energy savings for an EPIA (project) identified during any SEM program engagement and implemented during the current Reporting Period that is to receive an incentive from another IOU program. IOU custom capital M&V requirements (ex-ante, ex-post, etc.) will apply.
5. ***SEM BRO Energy Savings***: SEM Program Energy Savings minus SEM Incented Project Energy Savings. At the discretion of the IOU, this energy savings value can be used to pay BRO performance incentives.

Mathematically:

SEM Program Energy Savings = Facility-wide Annualized Energy Savings - Non-SEM Program Energy Savings

SEM BRO Energy Savings = SEM Program Energy Savings - SEM Incented Project Energy Savings

The figure below illustrates the relationship of the different types of energy savings.

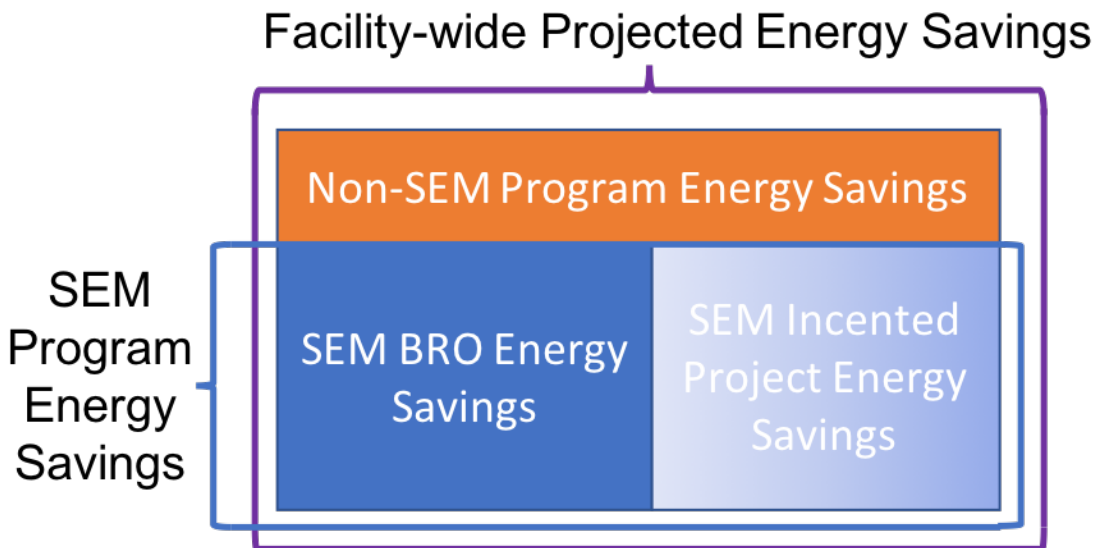


Figure 6. Relationship Between Different Types of Energy Savings.

11.7.2 Determining if Energy Performance Improvement Actions were Identified and Planned Outside of a SEM program engagement.

The implementer shall work with the customer to identify and list, as part of the Opportunity Register, EPIAs that were identified outside of any SEM program engagement but not yet implemented. Only EPIAs with a rough order of magnitude calculation are estimated to result in annualized energy savings greater than 1.0% of the energy baseline energy consumption for that type of energy need to be listed as part of the Opportunity Register.

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For each listed EPIA that was identified outside any SEM program engagement, a determination shall be made if it was not only identified but also planned for implementation outside any SEM program engagement. Energy savings resulting from EPIA that are both identified and planned outside of any SEM program engagement shall be included as part of the Non-SEM Program Energy Savings. Energy savings that ultimately result from EPIA that were identified outside of any SEM program engagement but not planned for implementation shall be included as part of future SEM Program Energy Savings when the EPIA is implemented during a Reporting Period.

The determination whether an EPIA was not only identified but also planned for implementation outside of any SEM program engagement shall be based on evidence of planning taking place within the 12 months prior to the SEM Program Engagement Period. Evidence older than 12 months indicates that while planning may have been started, EPIA implementation was stalled and the SEM program engagement influenced its implementation. A, "wish-list," or brainstorming list of EPIA ideas does not qualify as a planned EPIA. Evidence of an EPIA being planned for implementation could include the following:

- Budget allocated for the EPIA.
- Contracts signed related to EPIA implementation.
- Purchase orders issued or other indications of spending on the EPIA.
- Internal project manager assigned.
- Detailed EPIA implementation scope and schedule developed.

If an EPIA was identified and planned outside of an SEM program engagement but the implementation was abandoned or postponed, the EPIA may be considered as "planned" during an SEM Program Engagement Period if it can be demonstrated that the EPIA implementation was accelerated (e.g., from in three years to in one year).

The Opportunity Register shall be updated to indicate if each listed EPIA is determined to have been both identified and planned outside of any SEM program engagement or not. The rationale for the determination shall be recorded as part of the Opportunity Register.

Indication on the Opportunity Register or a separate list in the M&V Report of EPIAs linked to the Opportunity Register in some way for which energy savings were removed from each type of energy savings calculated should be provided.

11.7.3 Removing Energy Savings for EPIA Planned and Implemented during the SEM program engagement

Facility-wide Projected Energy Savings, Non-SEM Program Energy Savings, SEM Program Energy Savings, SEM Incented Project Energy Savings, and SEM BRO Energy Savings shall be calculated for each type of energy. The calculation of these values can be conducted by the implementer or led by the customer. If the energy savings values are to be reported to the IOU the implementer shall ensure they are calculated correctly and supported with documentation.

11.8 Establishing Confidence in Energy Savings

Fractional savings uncertainty (FSU) analysis is a method for judging the validity of energy savings based on regression modeling. An FSU calculation shall be conducted for each Facility-Wide Projected Energy Savings value calculated and used as the basis of an energy savings value to be reported.

The fractional uncertainty can be estimated with the general FSU equation as follows:

$$\frac{\Delta E_{save,m}}{E_{save,m}} = t \cdot \frac{1.26 \cdot CV((\frac{n}{n'})(1+\frac{2}{n'}) \cdot \frac{1}{m})^{\frac{1}{2}}}{F}$$

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Where:

- t= t-statistic for desired confidence level
- CV= coefficient of variation
- n= number of observations in the Baseline Period
- m = number of observations in the Reporting Period
- F= observed savings during Reporting Period
- n'= number of independent Baseline Period observations
- ρ= auto-correlation coefficient

$$n' = n\frac{(1-\rho)}{(1+\rho)}$$

According to ASHRAE Guideline 14:2014, for monthly data an assumption that autocorrelation is 0 so n' is equal to n.

When Reporting Period intervals are monthly or daily the improved FSU equation from Sun and Baltazar should be used which replaces the 1.26 coefficient in the above equation with a polynomial:

$$\frac{\Delta E_{save,m}}{E_{save,m}} = t \cdot \frac{(aM^2 + bM + c) \cdot CV((\frac{n}{n'})(1+\frac{2}{n'}) \cdot \frac{1}{m})^{\frac{1}{2}}}{F}$$

Where:

- M = number of months of Reporting Period data
- a, b, and c are defined as follows:

Data Interval	Monthly	Daily
a	-0.00022	-0.00024
b	0.03306	0.03535
c	0.94054	1.00286

Table 5: FSU Equation Coefficients.

ASHRAE Guideline 14-2002, Section 5.3.2.2 specifies that the level of uncertainty must be less than 50% of the annual reported savings, at a confidence level of 68%.

For an FSU value:

- Less than 50%, the reported energy savings value should be considered valid.
- Greater than or equal to 50%, energy savings aggregated from the list of implemented EPIAs on the Opportunity Register should be used to justify the energy savings calculated using the energy consumption adjustment model.
- Much greater than 50%, seen as an indicator that the energy savings are not valid.

The table in Annex F – Fractional Savings Uncertainty Scenarios, provides additional information for difference uncertainty scenarios.

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12 Calculating Energy Savings with the Opportunity Register

12.1 Introduction

Energy savings may additionally be calculated from the aggregation of energy savings resulting from the implementation of selected individual EPIAs listed on the Opportunity Register. This approach is commonly referred to as a bottom-up approach.

12.2 Process

If one or more energy consumption adjustment models is not developed and used to calculate energy savings for a given type of energy, then a bottom-up approach of calculating energy savings shall be used. This bottom-up approach is optional and not necessary if one or more valid energy consumption adjustment models are developed and used to calculate energy savings for a given type of energy.

Energy savings for individual implemented EPIA listed on the Opportunity Register shall be conducted in accordance with the requirements of Section 8. Not all EPIA listed on the Opportunity Register will necessarily have a calculated energy savings value.

For EPIA implemented and listed on the Opportunity Register, the implementer shall ensure that energy savings values for each EPIA listed on the Opportunity Register were calculated properly with effort proportional to the assumed energy savings value. The level of detail for calculating energy savings should be higher for more complex EPIAs and/or EPIAs that result in large energy savings values.

The implementer and customer shall identify which EPIA listed on the Opportunity Register to include in the bottom-up calculation. Not all EPIA for which energy savings have been calculated must be included in the bottom-up calculation. Reasons to not include energy savings from specific EPIA may include lack of confidence in the estimated energy savings value and uncertainty that the implemented EPIA will remain in place during the SEM Program Engagement Period.

Only energy savings for EPIA implemented during the current Reporting Period shall be included in the bottom-up calculation.

If a bottom up calculation is made in addition to development and use of a valid energy consumption adjustment model for the same type of energy, the resulting aggregated energy savings can be used as a, “gut check,” in comparison to energy savings calculated with energy consumption adjustment models. This analysis is not a requirement of this M&V Guide. Energy savings calculated from the two methods should not be reconciled as the foundational assumptions of the two methods are incongruent.

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13 Regulatory Reporting of the M&V Process and Energy Savings

13.1 Introduction

For the current Reporting Period, annualized energy savings values will be calculated for each type of energy included in the M&V process using one of two methods:

- Energy consumption adjustment models if the development of valid energy consumption models is attempted and possible.
- Aggregation of energy savings from individual EPIAs listed on the Opportunity Register.

For each type of energy included in the M&V process, if one or more valid energy consumption adjustment models were developed and used to calculate energy savings then energy savings for that type of energy shall be reported using this method. Development and use of energy consumption adjustment models is the preferred method to determine energy savings to be reported.

For each type of energy, if energy consumption adjustment models are not or cannot be developed, aggregated energy savings resulting from the implementation of EPIAs listed on the Opportunity Register per the requirements of this M&V Guide shall be reported for that type of energy.

If the bottom-up aggregation of energy savings approach to calculating energy savings is used to report energy savings it should be done so with the understanding that evaluation of energy savings for individual EPIA listed on the Opportunity Register may occur. This evaluation shall not be conducted to the level of rigor and specificity as is conducted for projects part of custom capital incentive programs. The evaluation shall be a check of the reasonable nature of the EPIA energy savings calculation approach, recognizing the requirements of this M&V Guide direct that a detailed M&V plan for each EPIA is not to be developed and energy savings are to be estimated with a rough order of magnitude data and calculations proportional to the expected level of energy savings.

Energy savings for different types of energy do not all have to be reported using the same energy savings determination method.

The M&V Report, Opportunity Register, and Energy Data and Performance Tracking Tool shall be provided to the CPUC as requested when reporting energy savings. The CPUC may have additional requests for data though the M&V Report should be adequate to evaluate if the energy savings reported conform to the requirements of this M&V Guide.

Program cost-effectiveness shall be based upon SEM Program Energy Savings.

This M&V Guide does not consider regulatory reporting aimed to evaluate the development of customer EnMS. As the M&V process is a component of a functional EnMS requests pertaining to the customer's understanding, activities, and leadership of parts of the M&V process may be made by the CPUC.

13.2 Considerations for non-IOU Supplied Energy

The implementer shall be responsible for adjusting energy savings values to account for IOU and CPUC requirements pertaining to claiming energy savings for facilities that have on-site energy generation and non-IOU supplied energy. In general, energy savings claims should only support impacts to IOU supplied energy. If a facility generates electricity on-site and exports excess electricity to the grid, those time periods shall be excluded from electricity savings claims.

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The implementer shall also be responsible for ensuring the customer pays a public purpose charge for each type of energy for which energy savings will be reported and that the reported energy savings value is attributed to energy for which the public purpose charge was paid.

13.3 Negative Energy Savings

Energy consumption adjustment models may indicate that worsening energy performance (sometimes referred to as backsliding) occurred as compared to the energy baseline or relative to prior Reporting Periods when energy consumption models are used for multiple concurrent Reporting Periods.

Regardless of if and when backsliding occurs energy savings shall still be calculated per the requirements of this M&V Guide. This may result in negative energy savings. Negative energy savings shall be reported in the same way as positive energy savings values.

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14 M&V Report Preparation Checklist

14.1 Introduction

The M&V Report shall be a living document compiled throughout the M&V Process that is finalized once per year and submitted as part of regulatory reporting requirements. Regulatory reporting of energy savings may not be every year, thus not requirement regulatory submission of the M&V Report for those years.

The M&V Report is intended to be of use to the customer as a record of the M&V Process that can be used in subsequent year M&V cycles.

The customer and implementer play a role in the development of the M&V Report. The customer should, over the course of multiple SEM program engagements, take a leadership in the development and continued use of the M&V Report.

It is the responsibility of the implementer to finalize the M&V Report and deliver it to the utility as requested or at the conclusion of the SEM program engagement.

14.2 Process

The below M&V Report preparation checklist is intended to help the implementer and customer build the M&V Report during the annual process of conducting M&V. Items on the check list are based upon the requirements within this M&V Guide. Additional information can be included in the M&V Report if it is of value to the customer or required by the IOU sponsoring the M&V engagement.

14.2.1 SEM Time Periods (2)

1. All time periods are provided. (2.1)

14.2.2 Characterizing the Facility (3)

1. The energy types that are consumed within the M&V boundaries are listed. (3.3)
2. The analysis based omission of energy types is provided. (3.3.3)
3. All utility and other energy meters for all types of energy are provided. (3.5)
4. Equation and conversion factors used to measure energy consumption are provided. (3.5)
5. The M&V boundaries are described. (3.6)
6. One or more line drawings or aerial images of the facility with the M&V boundaries is provided. (3.6)

14.2.3 Relevant Variables (4)

1. The list of potential relevant variables is provided. (4.3)
2. The list of potential relevant variables includes associated data sources. (4.5)
3. The relevant variables selected for data collection are identified. (4.5)
4. Relevant variable selection criteria is provided. (4.5)

14.2.4 Collecting Data and Assessing Data Quality (6)

1. The effect of outliers on the reliability of energy consumption adjustment models and the reason for removal is provided. (6.4)
2. The reason for making any changes to the data set is provided. (6.4)
3. The strategy used to remove outliers is provided. (6.4)
4. The omission of data points is documented and rationale provided. (6.4)
5. The decision to use a time-series adjustment is provided. (6.5)

14.2.5 Energy Consumption Model Development (7)

1. The decision and rationale to not start or not continue energy consumption adjustment model development is provided and has been approved by the IOU. (7.3)

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2. Scatter diagrams of energy consumption for each type of energy and each relevant variable are provided. (7.4.2)
3. If pertinent, the rationale for not ending the energy baseline immediately before the start of the SEM Program Engagement Period is provided. (7.4.5.1)
4. The table of competing models is provided. (7.6.4)
5. The selection rationale for each energy consumption adjustment model is provided. (7.6.2)
6. The method for making non-routine adjustments and the rationale for that method are provided. (7.8.1.1)
7. Rationale for the use of the backcast model over aggregated EPIA energy savings is provided and has been accepted by the IOU. (7.1 and 7.8.1.2)

14.2.6 Results of Technical Review

1. Notes and results of the Technical Review are provided. (10.3.5)

14.2.7 Annualization of Energy Savings

1. CUSUM graphs with annotation and footnotes that span all Reporting Periods (current and historic) for which the energy consumption adjustment model has been used are provided. (11.4.3)
2. If pertinent, for each type of energy, the rationale for selecting an Annualization Period duration longer than 90 days is provided. (11.5.1)
3. If pertinent, for each type of energy, the rationale for ending the Annualization Period prior to the end of the Reporting Period is provided. (11.5.1)
4. If pertinent, the selected approach to handle outliers in the Annualization Period is provided. (11.5.2)
5. If pertinent, the method used to split the Reporting Period to accommodate seasonality is provided. (11.5.4)
6. The process of removing energy savings resulting from EPIAs implemented during the Reporting Period is provided. (11.7)
7. All types of energy savings are provided for each type of energy. (11.7)
8. A table similar to that presented in Annex E – Example of Energy Savings Annualization and Disaggregation of Energy Savings Types, is provided for each energy consumption adjustment model. (11.8)

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- ASHRAE Guideline 14:2014 – Measurement of Energy, Demand and Water Savings
- Bonneville Power Administration Monitoring Tracking and Reporting (MT&R) Reference Guide, Revision 8.0, November 15, 2019
- Energy Trust of Oregon Energy Production Efficiency, Energy Intensity Modeling Guideline, Version 2.2, January, 2019
- International Performance Measurement and Verification Protocol – Option C, January 2012.
- ISO 50001:2018 – Energy management systems – Requirements with guidance for use
- ISO 50015:2014 – Measurement and verification of energy performance of organizations – General principles and guidance
- ISO 50047:2016 – Determination of energy savings in organizations
- NW SEM Collaborative, SEM Energy Modeling Method Selection Guide, 2019
- Philipp Degens and Anna Kelly, Strategic Energy Management Modeling: What's good enough?, 2017 International Energy Program Evaluation Conference, Baltimore, MD
- SBW Consulting Inc., Uncertainty Approaches and Analyses for Regression Models and ECAM, 2017
- U.S. Department of Energy Superior Energy Performance 50001, SEP 50001, Measurement & Verification Protocol: 2019, October 29, 2019

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We would particularly like to thank Kati Harper of the Energy Trust of Oregon and Todd Amundson of the Bonneville Power Administration for graciously sharing their time discussing their decades-long experience designing and offering SEM programs. Their institutional knowledge far exceeds that captured in any SEM documentation.

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Annex A - Terminology

For the purposes of this M&V Guide, the following terms and definitions apply.

This terminology guide is focused on providing clarity to assist the establishment of the M&V process. Statistical tests are not defined as detailed understanding of the meaning of these test is not required of the customer and competent implementers should already be familiar with these terms. Additionally, these terms are well established in authoritative and easily obtained statistics reference manuals.

SEM Program Engagement Period: interval between the end of the Baseline Period and the end of the Reporting Period

Additional specifications provided in Section 2.1.2

Baseline Period: specific period of time before the implementation of an energy performance improvement action selected for comparison with the Reporting Period and the calculation of the energy performance and of energy performance improvement

Source: ISO 50015:2014, 3.1

Additional specifications provided in Section 2.1.1

Behavioral: Behavioral activities provide energy savings from interventions that result in changes in actions by customers with respect to energy usage in a building. Behavioral activities consist of actions such as manually turning off lights and equipment, adjusting blinds, reducing water use and so on.

Source: CPUC NMEC Rulebook version 2.0

Boundary: physical or organizational limits

Example: A process; a group of processes; a site; multiple sites under the control of an organization, or an entire organization

Source: ISO 50001:2018, 3.1.3 - modified (removed Note 1)

BRO: The combination of behavioral, retrocommissioning, and operational activities

Energy: electricity, fuels, steam, heat, compressed air, and other like media

Note 1: for the purposes of this Guide, energy refers to the various types of energy, which can be purchased, stored, treated, used in equipment or in a process, or recovered.

Source: ISO 50001:2018, 3.5.1 - modified (replaced “International Standard” with “this Guide”, and removed “including renewable” in Note 1)

Energy baseline: quantitative reference(s) providing a basis for comparison of energy performance

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Note 1: An energy baseline is based on data from a specified period of time and/or conditions, as defined by the organization

Note 2: Energy baselines are used for determination of energy performance improvement, as a reference before and after, or with and without implementation of energy performance improvement actions.

Source: ISO 50001:2018, 3.4.7

Energy consumption: quantity of energy applied

Source: ISO 50001:2018, 3.5.2

Energy efficiency: ratio or other quantitative relationship between an output of performance, service, goods, commodities, or energy, and an input of energy

Source: ISO 50001:2018, 3.5.3 – modified (removed examples and Note 1)

Energy export: The quantity of energy delivered away from the M&V boundary such that the facility is not be counted as a net negative consumer of energy

Source: Modified from SEP 50001 M&V Protocol, 2019

Energy management system: management system to establish an energy policy, objectives, energy targets, action plans and process(es) to achieve the objectives and energy targets

Source: ISO 50001:2018, 3.2.2

Energy performance: measurable result(s) related to energy efficiency, energy use, and energy consumption

Note 1: Energy performance can be measured against the organization's objectives, energy targets and other energy performance requirements.

Note 2: Energy performance is one component of the performance of the energy management system

Source: ISO 50001:2018, 3.4.3

Energy performance improvement: improvement in measurable results of energy efficiency, or energy consumption related to energy use, compared to the energy baseline

Note 1: This M&V Guide uses energy savings as the indicator of energy performance improvement.

Source 50001:2018, 3.4.6 – modified (added note)

Energy performance improvement action: action or measure or group of action or measures implemented or planned within an organization intended to achieve energy performance improvement through technological, managerial or operational, behavioral, economical, or other changes

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Note 1: Energy performance improvement actions includes both BRO and capital projects.

Source: ISO 50015:2014, 3.3 – modified (added note)

Energy product: Any excess energy delivered away from the M&V boundaries after a net zero level of energy consumption is reached

Source: Modified from SEP 50001 M&V Protocol, 2019

Energy target: quantifiable objective of energy performance improvement

Source: ISO 50001:2018, 3.4.15

Energy use: application of energy

Examples: ventilation; lighting; heating; cooling; transportation; data storage; production process

Note 1: Energy use is sometimes referred to as “energy end-use”

Source: ISO 50001:2011, 3.5.4

Facility-wide Projected Energy Savings: Incremental, annualized energy savings for a given type of energy resulting from the aggregation of annualized energy savings from each energy consumption adjustment model developed for the same energy type.

Additional specification provided in Section 11.7.1.

Feedstock: raw or unprocessed material used as an input to a manufacturing process to be converted to a product

Example: crude oil used to produce petroleum products

Annualization Period: defined period of time selected for the annualization of energy savings

Additional specification provided in Section 2.1.4

Measurement and verification (M&V): process of planning, measuring, collecting data, analyzing, verifying, and reporting energy performance or energy performance improvement for defined M&V boundaries

Source: ISO 50015:2014, 3.11

M&V boundary: organizational, physical, site, facility, equipment, systems, process or activity limits within which energy performance or energy performance improvement is measured and verified

Source: ISO 50015:2014, 3.12

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Natural resources: Energy delivered to the M&V boundaries that is not supplied by an organization

Examples: sunlight, natural gas from an on-site well, geothermal

Source: Modified from SEP 50001 M&V Protocol, 2019

Non-routine adjustment: adjustment made to the energy baseline or Reporting Period energy consumption to account for unusual changes in relevant variables or static factors, outside the changes accounted for by normalization

Note 1: non-routine adjustments may apply where the energy baseline or Reporting Period no longer reflects energy use or energy consumption patterns, or there have been major changes to the process, operational patterns, or energy using systems

Source: ISO 50015:2014, 3.16 – modified (added, “or Reporting Period energy consumption”)

Non-SEM Program Energy Savings: Annualized energy savings calculated for EPIAs identified and planned outside of any SEM program engagement and implemented during the current Reporting Period, whether receiving other incentives or not.

Definition also provided in Section 11.7.1.

Normalization: modification of data to account for changes to enable comparison of energy performance under equivalent conditions

Source: ISO 50001:2018, 3.4.10

Operational Activities: Control-based; they improve or adjust existing controls to optimize equipment performance. Operational activities include maintaining room temperature set points, revising equipment operating schedules consistent with current building occupancy schedule, and changing equipment set points in response to current weather conditions.

Source: CPUC NMEC Rulebook version 2.0

Relevant variable: quantifiable factor that affects energy performance and routinely changes

Note 1: Significance criteria are determined by the organization

Note 2: Other commonly terms for relevant variables include independent variable and energy driver

Examples: Weather conditions, operating conditions (indoor temperature, light level), working hours, production output

Source: ISO 50001:2018, 3.4.9 – modified (added Note 2)

Reporting Period: defined period of time selected for calculation and reporting of energy performance

Source: ISO 50001:3.17, 3.17

Additional specifications provided in Section 2.1.3

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Retrocommissioning: A systematic process of identifying and implementing operational and maintenance improvements to achieve the design intentions consistent with the current usage of a building. The process is designed to improve the performance of building subsystems as well as optimize the performance of the overall system. Retrocommissioning focuses on operations and maintenance improvements and diagnostic testing, although major repairs and equipment upgrades may be identified and recommended through the process. Minor repairs required to conduct diagnostic testing may also be implemented.

Behavioral, Operational, Maintenance and Repair measures may be identified and carried out during a retrocommissioning project. Behavioral, operational and maintenance activities may also be implemented separately as "operations and maintenance" projects in existing buildings.

Source: CPUC NMEC Rulebook version 2.0

Strategic Energy Management (SEM): A holistic approach to managing energy consumption in order to continuously improve energy performance, by achieving persistent energy and cost savings over the long term. SEM focuses on business practice change from senior management through shop floor staff, affecting organizational culture to reduce energy waste and improve energy intensity. SEM emphasizes equipping and enabling plant management and staff to impact energy consumption through behavioral and operational change. While SEM does not emphasize a technical or project centric approach, SEM principles and objectives may support capital project implementation.

Source: CEE SEM Minimum Element – modified (replaced energy use with consumption)

SEM BRO Energy Savings: SEM Program Energy Savings minus SEM Incented Project Energy Savings.

Additional specification provided in Section 11.7.1.

SEM Incented Project Energy Savings: Annualized energy savings for an EPIA (project) identified during any SEM program engagement and implemented during the current Reporting Period that is to receive an incentive from another IOU program.

Additional specification provided in Section 11.7.1.

SEM Program Energy Savings: Facility-wide Projected Energy Savings minus Non-SEM Program Energy Savings

Additional specification provided in Section 11.7.1.

Static factor: Identified factor that impacts energy performance and does not routinely change

Example 1 Examples of static factors may include facility size, design of installed equipment, the number of weekly production shifts, the number or type of occupants, range of products

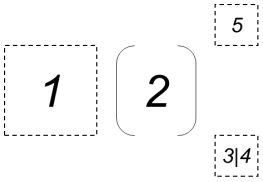
Example 2 An example of a change in a static factor could be a change in a manufacturing process raw material from aluminum to plastic may lead to a non-routine adjustment.

Source: ISO 50015, 3.20

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Annex B - Reference Notation

This section describes the notation used in this Guide. The energy consumption and savings notation is designed to distinguish quantities in the format shown below.



1. **Base Notation:** Describes if the energy consumption or savings is for delivered energy and provides the base for energy performance improvement notation.
2. **Energy Types:** Describes the type of energy that is quantified. The asterisk (*) notation is used as a placeholder for a generic or unknown energy type.
3. **Modeled Period:** Indicated in subscripts and defines the time period for which the model is built.
4. **Period/Conditions of Interest:** Indicates the time period or conditions of interest for which the model is being applied to.
5. **Adjustment Indicator:** Indicated in superscripts and describes if the quantity of energy is observed (actual) or adjusted.

1. Base Notation

ECD(*)	Delivered energy consumption of an unspecified energy type
E(*)	Quantity of energy of an unspecified type
ESD(*)	Delivered energy savings of an unspecified energy type
EnPI	Energy Performance Indicator

2. Energy Types

Individual energy type notation replaces the asterisk (*) in parentheses from the base notation above. The following are recommended for clarity of communication.

*	Unspecified energy type
e	Electricity
ge	Grid delivered electricity
pve	On-site generated electricity from on-site photovoltaic panels
ng	Natural gas
st	Steam
ca	Compressed air
d	Diesel
c	Coal
hw	Hot water
Σ	The sigma notation is used to represent summation of all energy types. $\mathrm{ECD}(\Sigma) = \sum_{*} \mathrm{ECD}(*)$ Example: if observed baseline delivered energy types are “ge” and “ng”, then $\mathrm{ECD}(\Sigma) = \mathrm{ECD}(\mathrm{ge}) + \mathrm{ECD}(\mathrm{ng})$

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3. Modeled Period and 4. Period/Conditions of Interest – (Subscript)

b	Baseline Period
r	Reporting Period
ap	Annualization Period

5. Adjustment Indicator – (Superscript)

o	Observed (actual) value for the indicated time period of condition of interest
a	Adjusted value for the indicated time period or condition of interest

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Annex C - Special Cases in Energy Accounting

The below scenarios are provided as examples and are not requirements of this M&V Guide. Current IOU and CPUC policies should be reviewed and used throughout the M&V process.

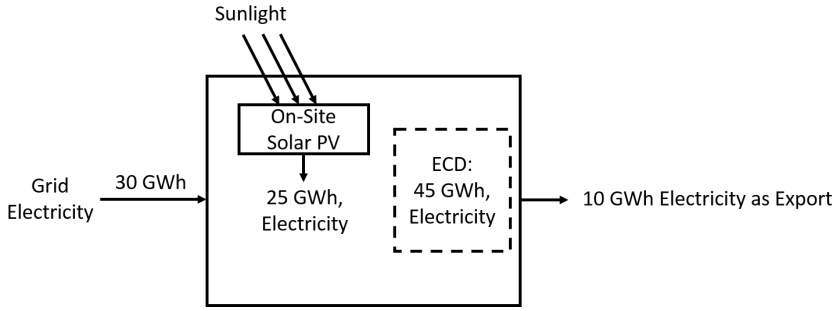
Energy Accounting of Energy Export and Energy Product

Energy delivered away from the M&V boundaries shall be accounted for as either an energy export or energy product.

Energy Export

The maximum allowable amount of energy export is equal to the quantity of energy delivered into the facility boundary of the same energy type such that a net zero level is reached on a delivered energy basis. A facility may not be counted as a net negative consumer of any energy type.

EXAMPLE: A facility purchases 30 GWh of grid electricity and produces 25 GWh of electricity with on-site photovoltaic (PV) panels. The facility consumes 45 GWh and delivers 10 GWh away from the M&V boundaries. The 10 GWh delivered away from the M&V boundaries is treated as energy export. See figure below.

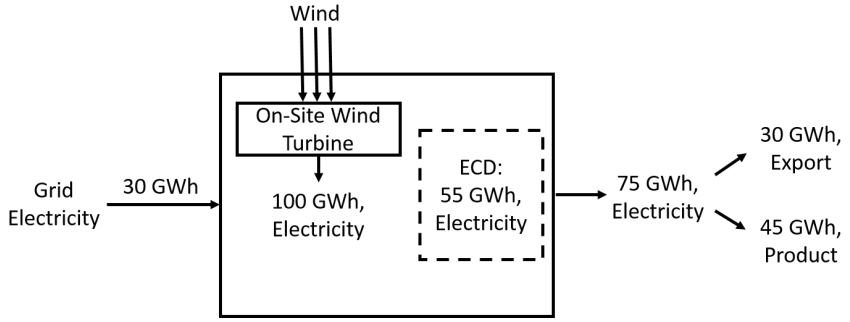


$$\mathrm{ECD(e)} = 30\ \mathrm{GWh} + 25\ \mathrm{GWh}\ -\ 10\ \mathrm{GWh} = 45\ \mathrm{GWh}$$

Energy Product

For each energy type, if a net zero level is reached on a delivered energy basis, any excess energy delivered away from the M&V boundaries is accounted for as an energy product. This may result from a facility producing large quantities of on-site energy. Energy product shall be considered as a relevant variable for adjustment models.

EXAMPLE: A facility purchases 30 GWh of grid electricity and generates 100 GWh of electricity with on-site wind turbines. The facility consumes 55 GWh and delivers 75 GWh away from the M&V boundaries. A maximum quantity of 30 GWh is treated as energy export. The remaining 45 GWh is treated as energy product. See figure below.



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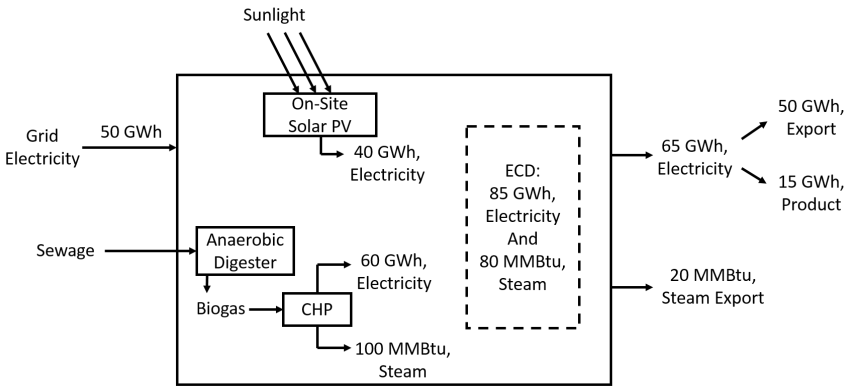
$$\mathrm{ECD(e)} = 30\ \mathrm{GWh} + 100\ \mathrm{GWh} - 30\ \mathrm{GWh} - 45\ \mathrm{GWh} = 55\ \mathrm{GWh}$$

On-site Extraction or Generation of Energy from Natural Resources

Energy from natural resources that are delivered into and consumed within or delivered away from the M&V boundaries shall be included in the energy accounting. The point at which on-site extracted or generated energy is metered and accounted for may be selected by the organization so long as it is at a reasonable point along the extraction or generation process flow (e.g., a facility may choose to meter biogas flow and energy content or the resulting electricity and hot water generated from the utilization of the same biogas). This measurement point shall be consistent between the baseline and Reporting Periods. This allowance is made recognizing that the quantity of energy of some natural resources (e.g., photons or wind) or the energy derived thereof (e.g., biogas) may be difficult to meter. In such cases, the quantity of energy generated within the M&V boundaries from the natural resource (e.g., AC electricity from the inverter of a PV panel system) may be metered and included in the energy accounting.

NOTE: While metering energy at a point along the extraction or generation process flow downstream of the M&V boundaries may be simpler and more cost effective (e.g. metering hot water produced from a biogas fired boiler, rather than the biogas produced from a sewage fed digester), the effect of energy performance improvement actions implemented upstream of the point of metering may not be reflected in the calculated facility-wide energy performance improvement.

EXAMPLE: A wastewater treatment facility uses sewage to generate biogas, which is used to generate electricity and steam in a CHP system. The facility also purchases grid electricity, and generates on-site electricity with an array of PV panels. As the facility cannot cost-effectively install meters to measure biogas flow and energy content, the facility decides to meter the electricity and steam coming out of the CHP system for energy accounting purposes. In one month, the biogas CHP system produces 60 GWh of electricity and 100 MMBTU of steam. The facility purchases 50 GWh of grid electricity and generates 40 GWh of on-site electricity with the PV panels. The facility consumes 85 GWh of electricity and delivers 65 GWh of electricity away from the M&V boundaries. The facility consumes 80 MMBTU of steam and delivers 20 MMBTU away from the M&V boundaries. See figure below.



Electricity: $\mathrm{ECD(e)} = 50\ \mathrm{GWh} + 60\ \mathrm{GWh} + 40\ \mathrm{GWh} - 50\ \mathrm{GWh} - 15\ \mathrm{GWh} = 85\ \mathrm{GWh}$

Steam: $\mathrm{ECD(st)} = 100\ \mathrm{MMBtu} - 20\ \mathrm{MMBtu} = 80\ \mathrm{MMBtu}$

Feedstock and Resulting Energy Types

In some instances, energy delivered to the M&V boundaries may be used as a feedstock rather than consumed as energy. The portion of an energy type used as a feedstock shall be

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subtracted from the delivered energy. The commodity that is being produced from the feedstock shall be considered as a relevant variable in the energy consumption adjustment model.

Any energy types resulting from the processing of feedstock (e.g., process gas produced during the refining process, heat generated by an exothermic reaction, biogas generated from sewage) that are consumed within or delivered away from the M&V boundaries shall be included in the energy accounting.

EXAMPLE: A facility purchases 1000 Therms of natural gas and uses 750 Therms to produce hydrogen, which is sold as a commodity, while consuming the other 250 Therms within the facility boundary in a boiler. The energy accounting shall include 250 Therms. The production quantity of hydrogen shall be considered as a relevant variable in the energy consumption adjustment model.

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Annex D – Multicollinearity and Autocorrelation

Multicollinearity

Multicollinearity is present when two or more relevant variables in a regression model are correlated between themselves. When two relevant variables are correlated, including both variables, instead of just one, may not add appreciably to the model's explanatory power.

Keep the following points in mind when validating an adjustment model:

- The presence of correlated variables should serve as a warning that the statistical significance of a variable in a particular regression does not, by itself, indicate how closely that variable is correlated with energy consumption. The modeler should use caution in excluding any variables that may actually be relevant variables, but are masked by correlated variables.
- Multicollinearity has limited influence on the predictive capability of the final model if operating conditions stay relatively consistent. However, if the relationship between the correlated relevant variables changes during the Reporting Period, the model will lose predictive power.
- Multicollinearity can be identified by using XY scatterplots to view the relationship between two relevant variables. Additionally, the coefficients in a model will swing drastically if a variable with multicollinearity is added or removed.
- Perform a general assessment of multicollinearity by regressing each variable against the other hypothesis variables and examine the R^2 of each relationship. As a rule of thumb, any bivariate correlation with $R^2 > 0.7$ is an indication that multicollinearity needs to be carefully considered in the variable selection process.
- Multicollinearity can also be identified by calculating the variance inflation factor (VIF), which describes the increase in standard error compared to the standard error if the variable were uncorrelated with the other predictor variables.
- The simplest solution to addressing multicollinearity is to drop one of the variables from the regression analysis. However, this approach may negatively affect the model's predictive capability. The modeler should use his/her best engineering judgment along with an understanding of how the customer's facility uses energy to include or exclude variables, while considering factors such as data availability and model complexity.

  EXAMPLE: At a soft drink bottling facility, energy consumption and production increase in the summer, due to higher seasonal sales. Both energy and production show a strong correlation with ambient, dry bulb temperature. The modeler includes the production variable in the adjustment model, but is unsure whether to include the ambient temperature variable. In this example, plot the production variable against the temperature variable to determine the correlation. If the R^2 is greater than 0.7, consider removing the temperature variable from the model. Justify the decision using engineering knowledge about the temperature dependency of equipment and loads at the facility.

Autocorrelation

Autocorrelation is present when the error term in a time period is related to the error term in a prior time period. In other words, autocorrelation is characterized by a correlation in the residuals.

Calculate the autocorrelation coefficient and plot model residuals over the Baseline Period. If autocorrelation is detected, the number of independent baseline points is effectively reduced. The typical remedy involves increasing the sample size, or selecting a different data interval. For annual models with daily baseline intervals, moderate autocorrelation may not be a concern.

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According to ASHRAE Guideline 14:2014, for monthly data an assumption that autocorrelation is 0 so n' is equal to n.

Typically, regression-based energy models exhibit positive autocorrelation. Positive auto-correlation occurs when the sign change of the residuals is infrequent. Conversely, too frequent sign changes in the residual pattern results in negative autocorrelation.

There is no defined threshold for the autocorrelation coefficient in the model development phase. Autocorrelation becomes a factor in the fractional savings uncertainty analysis when it has the mathematical effect of reducing performance period energy data samples.

The Durbin-Watson test can also be used to determine if autocorrelation is statistically significant. For uncorrelated errors, the Durbin-Watson number, d, should be approximately 2. The upper and lower bounds for the Durbin-Watson statistic are a function of sample size, the number of predictor variables and desired confidence level.

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Annex E – Example of Energy Savings Annualization and Disaggregation of Energy Savings Types

The below example assumes a monthly energy consumption adjustment model was created for electricity consumption at a facility. For each Reporting Period the Annualization Period is based upon months 10, 11, and 12.

Annualization of Energy Savings

		Reporting Period 1		Reporting Period 2		Reporting Period 3		Reporting Period 4		Reporting Period 5	
Month	Predicted Energy Consumption	Energy Consumption	Energy Savings	Energy Consumption	Energy Savings	Energy Consumption	Energy Savings	Energy Consumption	Energy Savings	Energy Consumption	Energy Savings
1	1,000,000	1,000,000	-	950,000	50,000	900,000	100,000	870,000	130,000	800,000	200,000
2	1,000,000	1,000,000	-	960,000	40,000	850,000	150,000	860,000	140,000	760,000	240,000
3	1,000,000	900,000	100,000	970,000	30,000	860,000	140,000	880,000	120,000	740,000	260,000
4	1,000,000	1,000,000	-	980,000	20,000	850,000	150,000	900,000	100,000	745,000	255,000
5	1,000,000	1,100,000	(100,000)	970,000	30,000	840,000	160,000	925,000	75,000	740,000	260,000
6	1,000,000	1,150,000	(150,000)	900,000	100,000	870,000	130,000	920,000	80,000	735,000	265,000
7	1,000,000	950,000	50,000	900,000	100,000	880,000	120,000	900,000	100,000	730,000	270,000
8	1,000,000	950,000	50,000	850,000	150,000	890,000	110,000	910,000	90,000	735,000	265,000
9	1,000,000	900,000	100,000	835,000	165,000	900,000	100,000	900,000	100,000	735,000	265,000
10	1,000,000	925,000	75,000	800,000	200,000	850,000	150,000	850,000	150,000	735,000	265,000
11	1,000,000	900,000	100,000	850,000	150,000	900,000	100,000	850,000	150,000	740,000	260,000
12	1,000,000	950,000	50,000	900,000	100,000	875,000	125,000	825,000	175,000	745,000	255,000
	Annualized Energy Savings		900,000		1,800,000		1,500,000		1,900,000		3,120,000

Disaggregating of Energy Savings Types

	Reporting Period 1		Reporting Period 2		Reporting Period 3		Reporting Period 4		Reporting Period 5	
Annualized Energy Savings Calculated Against the Baseline Period (all in kWh)										
Facility-wide Annualized Energy Savings		900,000		1,800,000		1,500,000		1,900,000		3,120,000
Annualized Incremental Energy Savings (all in kWh)										
Facility-wide Annualized Energy Savings		*900,000*		*900,000*		*(300,000)*		*400,000*		*1,220,000*
Types of Annualized Energy Savings - Calculations Based on Incremental Annualized Energy Savings (all in kWh)										
Non-SEM Program Energy Savings		600,000		-		-		-		-
SEM Program Energy Savings		*300,000*		*900,000*		*(300,000)*		*400,000*		*1,220,000*
SEM Incented Project Energy Savings		-		300,000		600,000		360,000		240,000
SEM BRO Energy Savings		300,000		600,000		(900,000)		40,000		980,000

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Annex F – Fractional Savings Uncertainty Scenarios

Daily Model

68% confidence, 365 baseline intervals, 90 reporting intervals

	F (% savings)				
CV	**2.5%**	**5.0%**	**10.0%**	**15.0%**	**20.0%**
0.03	23%	12%	6%	4%	3%
0.05	46%	23%	12%	8%	6%
0.10	92%	46%	23%	15%	12%
0.15	139%	69%	35%	23%	17%
0.20	185%	92%	46%	31%	23%
0.30	277%	139%	69%	46%	35%

68%	confidence
1.00	T-stat
365	baseline intervals
90	reporting intervals
0.5	autocorrelation coefficient
121.67	n-prime

Weekly Model

68% confidence, 52 baseline intervals, 13 reporting intervals

	F (% savings)				
CV	**2.5%**	**5.0%**	**10.0%**	**15.0%**	**20.0%**
0.03	47%	23%	12%	8%	6%
0.05	93%	47%	23%	16%	12%
0.10	187%	93%	47%	31%	23%
0.15	280%	140%	70%	47%	35%
0.20	374%	187%	93%	62%	47%
0.30	561%	280%	140%	93%	70%

68%	confidence
1.00	T-stat
52	baseline intervals
13	reporting intervals
0.25	autocorrelation coefficient
31.20	n-prime

Monthly Model

68% confidence, 12 baseline intervals, 3 reporting intervals

	F (% savings)				
CV	**2.5%**	**5.0%**	**10.0%**	**15.0%**	**20.0%**
0.03	82%	41%	20%	14%	10%
0.05	164%	82%	41%	27%	20%
0.10	327%	164%	82%	55%	41%
0.15	491%	246%	123%	82%	61%
0.20	655%	327%	164%	109%	82%
0.30	982%	491%	246%	164%	123%

68%	confidence
1.04	T-stat
12	baseline intervals
3	reporting intervals
0	autocorrelation coefficient
12.00	n-prime

Notes: ASHRAE guidelines specify 50% uncertainty at 68% confidence.
100% uncertainty means that the savings are not negative.
Uncertainty higher than 100% means there is a chance that savings are negative.
Monthly models will generally not show autocorrelation.
Daily and weekly models will generally show autocorrelation. Usually the addition of production data lowers the autocorrelation.

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Annex G – Revision History

The below table documents changes made to this M&V Guide.

Version and Date	Section	Change
2.0, September 12, 2020	Document	Structural and technical update from version 1.0 originally published February 8, 2017.
2.01, September 12, 2020	All tables	Corrected table formatting
2.02, September 28, 2020	11.5.3	Corrected equation to annualize correctly for non 12 month reporting periods. Last term change from $\left(\frac{rp}{n}\right)$ to $\left(\frac{n_{year}}{n}\right)$ where rp = number of intervals in the Reporting Period, n = number of intervals in the Annualization Period, and n_{year} = number of intervals in a year.

Table 6: Revision History.

Empowering Our Clean Energy Future
CONTRA COSTA | MARIN | NAPA | SOLANO

September 8, 2026

TO:	MCE Executive Committee
FROM:	Maíra Strauss, Chief Financial Officer
RE:	Proposed Amendment of Policy 014: MCE's Investment Policy (Agenda Item #05 C.3)
ATTACHMENTS:	A. Policy 014: MCE's Investment Policy Redline B. Policy 014: MCE's Investment Policy

Dear Executive Committee Members:

Summary

MCE's Investment Policy (Policy 014) establishes the guidelines governing the management of MCE's cash, deposits, and investments. The policy is reviewed periodically to ensure continued compliance with California Government Code requirements and alignment with industry best practices. Staff have been working with MCE's investment advisor, Chandler Asset Management, to complete a comprehensive evaluation of the policy. Several targeted updates to reflect recent statutory changes, enhance portfolio management flexibility, and improve policy clarity are recommended. The proposed amendment is intended to incorporate recent California Government Code requirements, ensure the policy remains modern, clearly articulated, easy to administer, and aligned with current industry best practices while maintaining MCE's investment philosophy and focus on safety and liquidity.

On August 27, 2026 MCE's Finance Committee unanimously recommended that the Board approve the Amendment of the Policy 014: MCE's Investment Policy.

Overview

MCE's investment program is governed by California Government Code Sections 53600 et. seq and is designed to achieve three primary objectives, in order of priority:

- Preservation of principal;
- Maintenance of adequate liquidity to meet operational needs; and
- Attainment of an appropriate market rate of return consistent with safety and liquidity objectives.

The recent review concluded that MCE's Investment Policy remains effective and well-designed, with recommended revisions focused primarily on incorporating changes to California law, expanding certain diversification opportunities, and improving policy readability and administration

Proposed Policy Updates

The proposed amendments include the following key updates:

Extended maturity limits for selected securities. The policy would allow investments in U.S. Treasury obligations, federal agency securities, and municipal securities with maturities of up to seven years. California Government Code permits maturities longer than five years for these asset classes when specifically authorized by the governing body. Our investment strategy continues to focus primarily on maturities between one and five years but would benefit from flexibility to selectively purchase securities with slightly longer maturities when market conditions warrant. The proposed change provides additional flexibility to diversify maturities and potentially enhance investment returns while maintaining investments in high-quality securities.

Commercial paper revisions. The maximum maturity for commercial paper would increase from 270 days to 397 days, consistent with current California law. Additional revisions update the policy language to align more closely with statutory requirements and current market practices.

Addition of bankers' acceptances. Bankers' acceptances would be added as an authorized investment type. These short-term instruments are commonly used by public agencies and provide additional diversification opportunities while maintaining a conservative credit profile.

Commercial paper updates. Policy language would be updated to reflect current statutory provisions governing placement service deposits and related concentration limits through January 1, 2031. The update would bring MCE's policy in line with AB 2618.

Money market mutual fund clarification. Revisions simplify the policy language and align eligibility requirements more closely with California Government Code, improving clarity and readability.

Municipal securities enhancements. The minimum rating requirement for municipal securities would be adjusted from "A+" to "A" or equivalent, and eligible issuers would be expanded to include qualifying obligations from all U.S. states. MCE's current "A+" requirement exceeds both California Government Code requirements and common industry practice. These changes may increase diversification opportunities while maintaining investment-grade standards.

Expansion of eligible municipal issuers. The policy would authorize investments in qualifying municipal obligations issued by all U.S. states rather than limiting investments primarily to California issuers (AB 1745). This authority may improve diversification and liquidity opportunities within MCE's investment portfolio.

Local Government Investment Pools (LGIPs). The policy would authorize investments in qualifying Joint Powers Authority investment pools, providing an additional tool for managing short-term liquidity needs.

Prohibited investment update. New language would prohibit the purchase of securities with forward settlement dates exceeding 45 days, consistent with recent updates to California law (SB 1489).

The recommended changes modernize the policy framework, improve clarity and readability, provide additional administrative flexibility, and align the policy with current statutory requirements

and public-sector investment best practices. The revisions also expand diversification opportunities and investment management tools available to staff while preserving MCE's long-standing commitment to prudent stewardship of public funds.

Fiscal Impact
None at this time. Certain revisions provide additional flexibility to enhance portfolio diversification and investment earnings over time.

Recommendation
Recommend to the Board of Directors approval of the Amendment of the Policy 014: MCE's Investment Policy.

APPROVED

Date: 3/16/23

MARIN CLEAN ENERGY

POLICY 014: Investment Policy

Introduction

This Investment Policy establishes guidelines for the management of cash, deposits and investments (together, "funds") at MCE (or the "Agency").

Scope

This policy covers all funds and investment activities under the direct authority of MCE, as set forth in the State Government Code, Sections 53600 et seq., with the following exceptions:

- Proceeds of debt issuance shall be invested in accordance with MCE's general investment philosophy as set forth in this policy; however, such proceeds are to be invested pursuant to the permitted investment provisions of their specific bond indentures.

- Any other funds specifically exempted by the Governing Body.

Objectives

When managing funds, MCE's primary objectives, in order of importance, shall be to safeguard the principal of the funds, meet the liquidity needs of MCE, and achieve a return on investment on funds in MCE's control.

Safety: Safety of principal is the foremost objective of cash and investment management activities. The investment of funds shall be undertaken in a manner that seeks to ensure the preservation of principal.

Liquidity: The funds of the agency shall remain sufficiently liquid to meet all operating needs that may be reasonably anticipated. Since all possible cash demands cannot be anticipated, the investment of funds in deposits or instruments available on demand is recommended.

Return on Investment: The deposit and investment portfolio shall be designed with the objective of attaining a market rate of return throughout the economic cycle while considering risk and liquidity constraints. The return on deposits and investments is of secondary importance compared to the safety and liquidity objectives described above.

Standard of Care

MCE will manage funds in accordance with the Prudent Investor Standard pursuant to California Government Code Section 53600.3.1[1]: "Governing bodies of local agencies or persons authorized to make investment decisions on behalf of those local agencies investing public funds

[1] All further statutory references are to the California Government Code unless otherwise stated.

are trustees and therefore fiduciaries subject to the prudent investor standard. When investing, reinvesting, purchasing, acquiring, exchanging, selling or managing public funds, a trustee shall act with care, skill, prudence and diligence under the circumstances then prevailing, that a prudent person acting in a like capacity and familiarity with those matters would use in the conduct of funds of a like character and with like aims, to safeguard the principal and maintain the liquidity needs of the agency. Within the limitations of this section and considering individual investments as part of an overall strategy, investments may be acquired as authorized by law."

Delegation of Authority

Pursuant to Section 53607, the responsibility to manage funds is delegated to the Treasurer of MCE. The Treasurer may appoint Deputy Treasurers as the Treasurer deems necessary and convenient for the prompt and faithful discharge of its duties to invest and reinvest the funds of MCE, pursuant to Section 53607.

MCE may engage the services of one or more external investment advisers, who are registered under the Investment Advisers Act of 1940, to assist in the management of MCE's investment portfolio in a manner consistent with the MCE's objectives. External investment advisers may be granted discretion to purchase and sell investment securities in accordance with this Investment Policy.

Ethics and Conflicts of Interest

All participants in the investment process shall act as custodians of the public trust. Investment officials shall recognize that the investment portfolio is subject to public review and evaluation. Thus employees and officials involved in the investment process shall refrain from personal business activity that could create a conflict of interest or the appearance of a conflict with proper execution of the investment program, or which could impair their ability to make impartial investment decisions.

Employees and investment officials shall disclose to MCE's General Counsel or designee any material interests in financial institutions with which they conduct business, and they shall further disclose any large personal financial/investment positions that could be related to the performance of the investment portfolio. Employees and officers shall refrain from undertaking any personal investment transactions with the same individual with whom business is conducted on behalf of MCE.

Authorized Investments

MCE's investments are governed by California Government Code, Sections 53600 et seq. Within the investments permitted by the Code, MCE seeks to further restrict eligible investments to the guidelines listed below. In the event a discrepancy is found between this policy and the Code, the more restrictive parameters will take precedence. Percentage holding limits and minimum credit quality requirements listed in this section apply at the time the security is purchased.

Any investment currently held at the time the policy is adopted which does not meet the new policy guidelines can be held until maturity and shall be exempt from the current policy. At the time of the investment's maturity or liquidation, such funds shall be reinvested only as provided in the current policy.

The following types of investments are permitted:

Deposits at Bank(s): Funds may be invested in non-interest bearing depository accounts to meet MCE's operating and collateral needs and grant requirements. Funds not needed for these purposes may be invested in interest bearing depository accounts or Federal Deposit Insurance Corporation (FDIC) insured certificates of deposit with maturities not to exceed five years.

Banks eligible to receive deposits will be federally or state chartered and will conform to Section 53635.2 which requires that banks "have received an overall rating of not less than "satisfactory" in its most recent evaluation by the appropriate federal financial supervisory agency of its record of meeting the credit needs of California's communities, including low- and moderate-income neighborhoods, pursuant to Section 2906 of Title 12 of the United States Code."

FDIC insurance coverage in the United States is $250,000 per Tax ID Number. As per Section 53652, banks must collateralize the deposits of public agencies. The Treasurer, or a duly appointed Deputy Treasurer, will monitor the credit quality of eligible banks to ensure the safety of MCE deposits.

Local Agency Investment Fund (LAIF): Funds may be invested in the Local Agency Investment Fund. The LAIF was established by the California State Treasurer for the benefit of local agencies. Statutory requirements of the Local Agency Investment Fund include:

Section 16429.1

> a. There is in trust in the custody of the Treasurer the Local Agency Investment Fund, which fund is hereby created. The Controller shall maintain a separate account for each governmental unit having deposits in this fund.
>
> e. The local governmental unit, the nonprofit corporation, or the quasi-governmental agency has the exclusive determination of the length of time its money will be on deposit with the Treasurer.
>
> j. Money in the fund shall be invested to achieve the objective of the fund which is to realize the maximum return consistent with safe and prudent treasury management.
>
> i. Immediately at the conclusion of each calendar quarter, all interest earned and other increment derived from investments shall be distributed by the Controller to the contributing governmental units or trustees. An amount equal to the reasonable costs incurred in carrying out the provisions of this section, not to exceed a maximum of 5 percent of the earnings of this fund and not to exceed the amount appropriated in the annual Budget Act for this function, shall be deducted from the earnings prior to distribution.

Section 16429.4

The right of a city, county, city and county, special district, nonprofit corporation, or qualified quasi-governmental agency to withdraw its deposited moneys from the Local Agency Investment Fund, upon demand, may not be altered, impaired, or denied, in any way, by any state official or state agency based upon the state's failure to adopt a State Budget by July 1 of each new fiscal year.

US Treasury Obligations: Funds may be invested in United States Treasury obligations and other government obligations for which the full faith and credit of the United States are pledged for the payment of principal and interest with a term to maturity not exceeding seven ~~5~~ (7) years. There are no limits on the dollar amount or percentage that MCE may invest in U.S. Treasuries.

Federal Agency Securities: Funds may be invested in Federal Agency Securities or United States Government-Sponsored Enterprise obligations, participations, or other instruments, including

those issued by or fully guaranteed as to principal and interest by federal agencies or United States government-sponsored enterprises. There are no limits on the dollar amount or percentage that MCE may invest in Federal Agency or Government-Sponsored Enterprises (GSEs) with a term to maturity not exceeding seven ~~5~~ (7) years. No more than 30% of the portfolio may be invested in any single Agency/GSE issuer. Federal Agency and GSE obligations must be rated in a rating category of AA or equivalent or better. The maximum percent of agency callable securities in the portfolio will be 20%.

Commercial Paper: Funds may be invested in commercial paper in accordance with the requirements of Section 53601 and subject to the following limitations:

i. No more than 25% of the total portfolio shall be invested in commercial paper;
ii. The term to maturity shall not exceed ~~270~~ 397 days; and
~~iii. No more than 10% of outstanding commercial paper shall be from any single issuer.~~

The issuer of commercial paper must meet all of the following conditions in either paragraph (a) or (b) specified below:

a. ~~have the following:~~Securities issued by corporations:
   i. A corporation organized and operating in the United States with ~~Assets~~ assets in excess of $500 million;
   ii. ~~A credit rating of~~The securities are rated A-1 or its equivalent or better by a Nationally Recognized Statistical Rating Organization (NRSRO); and
   If the issuer has other debt obligations, they must be rated in a rating category of "A" or its equivalent or better by at least one NRSRO.~~A senior debt rated at A or better.~~
   iii.

b. Securities issued by other entities:
   i. The issuer is organized within the United States as a special purpose corporation, trust, or limited liability company.
   ii. The securities must have program-wide credit enhancements including, but not limited to, overcollateralization, letters of credit, or a surety bond.
   iii. The securities are rated "A-1" or its equivalent or better by at least one NRSRO.

Additionally, under a provision sunsetting on January 1, ~~2026~~2031, no more than 40% of the portfolio may be invested in Commercial Paper if ~~the Agency's~~MCE's investment assets under management are greater than $100,000,000. No more than 5% of the portfolio may be invested in any single issuer.

Bankers's Acceptances, provided that:

- They are issued by institutions which have short-term debt obligations rated "A-1" or its equivalent or better by at least one NRSRO; or long-term debt obligations which are rated in a rating category of "A" or its equivalent or better by at least one NRSRO.
- No more than 40% of the total portfolio may be invested in Banker's Acceptances.
- No more than 5% of the total portfolio may be invested in any single issuer.
- The maximum maturity does not exceed 180 days.

Negotiable Certificates of Deposit: Funds may be invested in negotiable certificates of deposit issued by a nationally or state-chartered bank, a savings association or a federal association, a state or federal credit union, or by a federally licensed or state-licensed branch of a foreign bank, and subject to the following limitations:

i. Issued by an entity as defined in Section 53601(i); and

ii. No more than 30% of funds invested pursuant to this Investment Policy may be invested in certificates of deposit.
iii. The amount of the NCD insured up to the FDIC limit does not require any credit ratings.
iv. Any amount above the FDIC insured limit must be issued by institutions which have short-term debt obligations rated "A-1" or its equivalent or better by at least one NRSRO; or long-term obligations rated in a rating category of "A" or its equivalent or better by at least
v. one NRSRO.
vi. No more than 5% of the portfolio may be invested in any single issuer.
vii. The maximum maturity does not exceed five (5) years.

Collateralized Time Deposits (Non-Negotiable Certificates of Deposit): Funds may be invested in state or federally chartered banks, savings and loans, or credit unions in excess of insured amounts which are fully collateralized with securities in accordance with California law, provided that:

- No more than 50% of the portfolio will be invested in a combination of federally insured and collateralized time deposits, including CDARS.
- The maximum maturity does not exceed five (5) years.

Placement Service Deposits: Funds may be invested in deposits placed with a private sector entity that assists in the placement of deposits with eligible financial institutions located in the United States (Section 53601.8). The full amount of principal and the interest that may be accrued during the maximum term of each deposit shall at all times be insured by federal deposit insurance. The combined maximum portfolio exposure to the deposits placed pursuant to this section, Insured Cash Sweep (ICS) and Certificate of Deposit Account Registry Service (CDARS) is limited to ~~50~~ 30 percent and the maximum investment maturity will be restricted to five years, unless otherwise prescribed by law. Under a provision sunsetting on January 1, 2031, no more than 50 percent of the portfolio may be invested in deposits through a placement service, including Certificates of Deposit, if the investing agency is a city, district or local agency that does not pool money with other local agencies.

Money Market Funds: Funds registered with the Securities and Exchange Commission under the Investment Company Act of 1940 and issued by diversified management companies and meet either of the following criteria:

i. Have attained the highest ranking or the highest letter and numerical rating provided by not less than two (2) NRSROs; or
ii. Have retained an investment adviser registered or exempt from registration with the Securities and Exchange Commission with not less than five years' experience managing money market mutual funds with assets under management in excess of $500 million.

- No more than 20% of the total portfolio may be invested in Money Market Mutual Funds, and the shares of any one Money Market Mutual Fund.
- ~~may be invested in money market funds pursuant to Section 53601(l)(2) and subject to Section 53601(l)(4).~~

Municipal Securities: Funds may be invested in municipal securities including obligations of MCE, the State of California and any local agency within the State of California, provided that:

- The securities are rated in a minimum rating category of "A~~+~~" or its equivalent or better by at least one nationally recognized statistical rating organization ("NRSRO").
- No more than 5% of the portfolio may be invested in any single issuer.
- No more than 30% of the portfolio may be in Municipal Securities in the aggregate.

- The maximum maturity does not exceed ~~five~~ seven (~~5~~7) years.

Municipal Securities: Registered Treasury Notes of Bonds of any of the other 49 states in addition to California, including bonds payable solely out of the revenues from a revenue-producing property owned, controlled, or operated by a state or by a department, board, agency, or authority of any of the other 49 states, in addition to California.

- The securities are rated in a rating category of "A" or its equivalent or better by at least one NRSRO.
- No more than 5% of the total portfolio may be invested in any single issuer.
- No more than 30% of the total portfolio may be in Municipal Securities in the aggregate.
- The maximum maturity does not exceed seven (7) years.

Repurchase Agreements: Funds may be invested in repurchase agreements collateralized with securities authorized under California Government Code, maintained at a level of at least 102% of the market value of the Repurchase Agreement. There are no limits on the dollar amount or percentage that MCE may invest, provided that:

- Securities used as collateral for Repurchase Agreements will be delivered to an acceptable third party custodian.
- Repurchase Agreements are subject to a Master Repurchase Agreement between the Agency and the provider of the repurchase agreement. The Master Repurchase Agreement will be substantially in the form developed by the Securities Industry and Financial Markets Association (SIFMA).
- The maximum maturity does not exceed one (1) year.

Corporate Medium-Term Notes (MTNs): Funds may be invested in MTMs provided that:

- The security is issued by~~issuer is~~ a corporation organized and operating within the United States or by depository institutions licensed by the United States or any state and operating within the United States.
- The securities are rated in a rating category of "A~~+~~" or its equivalent or better by at least one NRSRO.
- No more than 30% of the total portfolio may be invested in MTNs.
- No more than 5% of the portfolio may be invested in any single issuer.
- The maximum maturity does not exceed five (5) years.

Asset-Backed, Mortgage-Backed, Mortgage Passthrough Securities, and Collateralized Mortgage Obligations from issuers not defined as issuers of U.S. Treasuries, Federal Agencies, and Government Sponsored Enterprises in the preceding paragraphs of the Authorized Investments section of this policy: Funds may be invested in these securities provided that:

- The securities are rated in a rating category of "AA" or its equivalent or better by a NRSRO.
- No more than 20% of the total portfolio may be invested in these securities.
- No more than 5% of the portfolio may be invested in any single Asset-Backed or Commercial Mortgage security issuer.
- The maximum legal final maturity does not exceed five (5) years.

Supranationals: Funds may be invested in supranationals provided that:

- Issues are US dollar denominated senior unsecured unsubordinated obligations issued or unconditionally guaranteed by the International Bank for Reconstruction and Development, International Finance Corporation, or Inter-American Development Bank.

- The securities are rated in a rating category of "AA" or its equivalent or better by a NRSRO.
- No more than 30% of the total portfolio may be invested in these securities.
- No more than 10% of the portfolio may be invested in any single issuer.
- The maximum maturity does not exceed five (5) years.

Local Government Investment Pools (LGIP): Defined as shares of beneficial interest issued by a Joint Powers Authority (JPA): provided that:

- The JPA is organized pursuant to California Government Code Section 6509.7 and invests in the securities and obligations authorized in subdivisions (a) to (r), inclusive.
- Each share shall represent an equal proportional interest in the underlying pool of securities owned by the JPA.
- The JPA has retained an investment advisor who is registered with the SEC (or exempt from registration), has assets under management in excess of $500 million, and has at least five years' experience investing in instruments authorized by Section 53601, subdivisions (a) to (q).

Prohibited Investments

Pursuant to Section 53601.6, MCE shall not invest funds in any security that could result in a zero interest accrual, or less, if held to maturity. These prohibited investments include inverse floaters, range notes, or mortgage-derived interest-only strips, futures options. The purchase of foreign currency denominated securities is prohibited. Trading securities for the sole purpose of speculating on the future direction of interest rates is prohibited. Purchasing or selling securities on margin is prohibited. The use of reverse repurchase agreements, securities lending or any other form of borrowing or leverage is prohibited. The purchase of a security with a forward settlement date exceeding 45 days from the time of the investment is prohibited.

Investment Portfolio Management

The term to maturity of any funds invested as measured from settlement date to maturity date shall not exceed 5 years pursuant to Section 53601. unless the MCE Board has by resolution granted authority to make such an investment either specifically or as a part of an investment program approved by the legislative body no less than three months prior to the investment. U.S. Treasury securities, federal agency obligations, and municipal securities may be invested in securities with maturities no longer than seven (7) years. The Treasurer, or a duly appointed Deputy Treasurer, will allocate funds among authorized investments consistent with the objectives and standards of care outlined in this Policy.

Bids and Purchase of Securities

Prior to the purchase of an investment pursuant to this Policy the persons authorized to make investments shall assess the market and market prices using information obtained from available sources including investment services, broker/dealers, and the media. A competitive bid process, when practical, will be used to place all investment purchases and sales transactions.

Brokers

To the extent practicable, the Treasurer shall endeavor to complete investment transactions using a competitive bid process whenever possible. In accordance with Section 53601.5, institutions eligible to transact investment business with MCE include:

- Institutions licensed by the state as a broker-dealer, as defined in Section 25004 of the Corporations Code, with proof of FINRA certification.
- Institutions that are members of a federally regulated securities exchange.
- Primary government dealers as designated by the Federal Reserve Bank and non-primary government dealers.
- Nationally or state-chartered banks.
- Savings association or federal association (as defined in Section 5102 of the Financial Code).
- The Federal Reserve Bank.
- Direct issuers of securities eligible for purchase.

Selection of financial institutions and broker/dealers authorized to engage in transactions will be at the sole discretion of MCE, except where MCE utilizes an external investment adviser in which case MCE may rely on the adviser for selection.

Selection of broker/dealers used by an external investment adviser retained by MCE will be at the sole discretion of the adviser. Where possible, transactions with broker/dealers shall be selected on a competitive basis and their bid or offering prices shall be recorded. If there is no other readily available competitive offering, best efforts will be made to document quotations for comparable or alternative securities. When purchasing original issue instrumentality securities, no competitive offerings will be required as all dealers in the selling group offer those securities at the same original issue price.

The Treasurer shall be prohibited from selecting any broker, brokerage firm, dealer, or securities firm that has, within any 48-consecutive month period following January 1, 1996, made a political contribution in an amount exceeding the limitations contained in Rule G-37 of the Municipal Securities Rulemaking Board to any member of the MCE Board, or any candidate for those offices. The broker/dealers shall be provided with and acknowledge receipt of the Investment Policy.

Losses

Losses are acceptable on a sale before maturity and may be taken if required to rebalance duration, improve credit quality or increase diversification, meet the liquidity needs of the agency or if the reinvestment proceeds will earn an income flow with a present value higher than the present value of the income flow that would have been generated by the original investment, considering any investment loss or foregoing interest on the original investment.

Delivery and Safekeeping

The delivery and safekeeping of all securities shall be made through a third party custodian when practical and cost effective as determined by the Treasurer, or a duly appointed Deputy Treasurer, and in accordance with Section 53608. The Director of Finance or their designee shall review all transaction confirmations for conformity with the original transaction.

Risk Management and Diversification—Mitigating Credit Risk in the Portfolio

Credit risk is the risk that a security or a portfolio will lose some or all its value due to a real or perceived change in the ability of the issuer to repay its debt. MCE will mitigate credit risk by adopting the following strategies:

- The diversification requirements included in the “Authorized Investments” section of this policy are designed to mitigate credit risk in the portfolio.

- No more than 5% of the total portfolio may be deposited with or invested in securities issued by any single issuer unless otherwise specified in this policy.

- MCE may elect to sell a security prior to its maturity and record a capital gain or loss in order to manage the quality, liquidity or yield of the portfolio in response to market conditions or MCE's risk preferences.

- If a security owned by MCE is downgraded to a level below the requirements of this policy, making the security ineligible for additional purchases, the following steps will be taken:

    - Any actions taken related to the downgrade by the investment manager will be communicated to the Treasurer in a timely manner.

    - If a decision is made to retain the security, the credit situation will be monitored and reported to the Governing Body.

Risk Management and Diversification—Mitigating Market Risk in the Portfolio

Market risk is the risk that the portfolio value will fluctuate due to changes in the general level of interest rates. MCE recognizes that, over time, longer-term portfolios have the potential to achieve higher returns. On the other hand, longer-term portfolios have higher volatility of return. MCE will mitigate market risk by providing adequate liquidity for short-term cash needs, and by making longer-term investments only with funds that are not needed for current cash flow purposes.

MCE further recognizes that certain types of securities, including variable rate securities, securities with principal paydowns prior to maturity, and securities with embedded options, will affect the market risk profile of the portfolio differently in different interest rate environments. MCE, therefore, adopts the following strategies to control and mitigate its exposure to market risk:

- MCE will maintain a minimum of $40 million in cash and overnight investments at all times to provide sufficient liquidity for expected disbursements.

- The maximum stated final maturity of individual securities in the portfolio will be five (5) years, except as otherwise stated in this policy.

- The duration of the portfolio will generally be approximately equal to the duration (typically, plus or minus 20%) of a Market Benchmark, an index selected by MCE based on MCE's investment objectives, constraints and risk tolerances.

Conflict of Interest

In accordance with state law, staff shall not accept honoraria, gifts, and gratuities from advisors, brokers, dealers, bankers, or other person with whom MCE conducts business.

Audits

MCE's funds shall be subject to a process of independent review by its external auditors. MCE's external auditors shall review the investment portfolio in connection with the annual audit for

compliance with the Investment Policy pursuant to Section 27134. The results of the audit shall be reported to the Director of Finance and the Ad Hoc Audit Committee.

Reports

Monthly: So long as the Board of Directors' annual delegation of investment authority pursuant to Section 53607 to the Treasurer is effective, the Treasurer or a duly appointed Deputy Treasurer will perform a monthly review of the investment function and shall submit a monthly report of all investment transactions to the Board of Directors. Investment transactions are defined as the purchase, sale or exchange of securities.

Annually: The Treasurer, or a duly appointed Deputy Treasurer, will submit an annual report to the Board of Directors and Chief Executive Officer within 45 days of the end of a fiscal year providing the following:

i. A list identifying the type of investment, issuer, date of maturity, par and dollar amount invested on all securities, the market value and source of the market value information;
ii. A statement that the portfolio is in compliance with the Investment Policy and in accordance with Section 53646 or the manner in which the portfolio is not in compliance; and
iii. A statement of MCE's ability to meet expenditure requirements for the upcoming 12 months.

Annual Review

The Investment Policy will be reviewed annually by the Treasurer, or a duly appointed Deputy Treasurer. Any changes to the Investment Policy will be submitted to the Board for approval.

Glossary of Investment Terms

AGENCIES. Shorthand market terminology for any obligation issued by *a government-sponsored entity (GSE),* or a *federally related institution*. Most obligations of GSEs are not guaranteed by the full faith and credit of the US government. Examples are:

FFCB. The Federal Farm Credit Bank System provides credit and liquidity in the agricultural industry. FFCB issues discount notes and bonds.

FHLB. The Federal Home Loan Bank provides credit and liquidity in the housing market. FHLB issues discount notes and bonds.

FHLMC. Like FHLB, the Federal Home Loan Mortgage Corporation provides credit and liquidity in the housing market. FHLMC, also called "FreddieMac" issues discount notes, bonds and mortgage pass-through securities.

FNMA. Like FHLB and FreddieMac, the Federal National Mortgage Association was established to provide credit and liquidity in the housing market. FNMA, also known as "FannieMae," issues discount notes, bonds and mortgage pass-through securities.

GNMA. The Government National Mortgage Association, known as "GinnieMae," issues mortgage pass-through securities, which are guaranteed by the full faith and credit of the US Government.

PEFCO. The Private Export Funding Corporation assists exporters. Obligations of PEFCO are not guaranteed by the full faith and credit of the US government.

TVA. The Tennessee Valley Authority provides flood control and power and promotes development in portions of the Tennessee, Ohio, and Mississippi River valleys. TVA currently issues discount notes and bonds.

ASKED. The price at which a seller offers to sell a security.

ASSET BACKED SECURITIES. Securities supported by pools of installment loans or leases or by pools of revolving lines of credit.

AVERAGE LIFE. In mortgage-related investments, including CMOs, the average time to expected receipt of principal payments, weighted by the amount of principal expected.

BANKER'S ACCEPTANCE. A money market instrument created to facilitate international trade transactions. It is highly liquid and safe because the risk of the trade transaction is transferred to the bank which "accepts" the obligation to pay the investor.

BENCHMARK. A comparison security or portfolio. A performance benchmark is a partial market index, which reflects the mix of securities allowed under a specific investment policy.

BID. The price at which a buyer offers to buy a security.

BROKER. A broker brings buyers and sellers together for a transaction for which the broker receives a commission. A broker does not sell securities from his own position.

CALLABLE. A callable security gives the issuer the option to call it from the investor prior to its maturity. The main cause of a call is a decline in interest rates. If interest rates decline since an issuer issues securities, it will likely call its current securities and reissue them at a lower rate of interest. Callable securities have reinvestment risk as the investor may receive its principal back when interest rates are lower than when the investment was initially made.

CERTIFICATE OF DEPOSIT (CD). A time deposit with a specific maturity evidenced by a certificate. Large denomination CDs may be marketable.

CERTIFICATE OF DEPOSIT ACCOUNT REGISTRY SYSTEM (CDARS). A private placement service that allows local agencies to purchase more than $250,000 in CDs from a single financial institution (must be a participating institution of CDARS) while still maintaining FDIC insurance coverage. CDARS is currently the only entity providing this service. CDARS facilitates the trading of deposits between the California institution and other participating institutions in amounts that are less than $250,000 each, so that FDIC coverage is maintained.

COLLATERAL. Securities or cash pledged by a borrower to secure repayment of a loan or repurchase agreement. Also, securities pledged by a financial institution to secure deposits of public monies.

COLLATERALIZED MORTGAGE OBLIGATIONS (CMO). Classes of bonds that redistribute the cash flows of mortgage securities (and whole loans) to create securities that have different levels of prepayment risk, as compared to the underlying mortgage securities.

COMMERCIAL PAPER. The short-term unsecured debt of corporations.

COST YIELD. The annual income from an investment divided by the purchase cost. Because it does not give effect to premiums and discounts which may have been included in the purchase cost, it is an incomplete measure of return.

COUPON. The rate of return at which interest is paid on a bond.

CREDIT RISK. The risk that principal and/or interest on an investment will not be paid in a timely manner due to changes in the condition of the issuer.

CURRENT YIELD. The annual income from an investment divided by the current market value. Since the mathematical calculation relies on the current market value rather than the investor's cost, current yield is unrelated to the actual return the investor will earn if the security is held to maturity.

DEALER. A dealer acts as a principal in security transactions, selling securities from and buying securities for his own position.

DEBENTURE. A bond secured only by the general credit of the issuer.

DELIVERY VS. PAYMENT (DVP). A securities industry procedure whereby payment for a security must be made at the time the security is delivered to the purchaser's agent.

DERIVATIVE. Any security that has principal and/or interest payments which are subject to uncertainty (but not for reasons of default or credit risk) as to timing and/or amount, or any security which represents a component of another security which has been separated from other components ("Stripped" coupons and principal). A derivative is also defined as a financial instrument the value of which is totally or partially derived from the value of another instrument, interest rate, or index.

DISCOUNT. The difference between the par value of a bond and the cost of the bond, when the cost is below par. Some short-term securities, such as T-bills and banker's acceptances, are known as discount securities. They sell at a discount from par, and return the par value to the investor at maturity without additional interest. Other securities, which have fixed coupons, trade at a discount when the coupon rate is lower than the current market rate for securities of that maturity and/or quality.

DIVERSIFICATION. Dividing investment funds among a variety of investments to avoid excessive exposure to any one source of risk.

DURATION. The weighted average time to maturity of a bond where the weights are the present values of the future cash flows. Duration measures the price sensitivity of a bond to changes in interest rates. (See modified duration).

FEDERAL FUNDS RATE. The rate of interest charged by banks for short-term loans to other banks. The Federal Reserve Bank through open-market operations establishes it.

FEDERAL OPEN MARKET COMMITTEE. A committee of the Federal Reserve Board that establishes monetary policy and executes it through temporary and permanent changes to the supply of bank reserves.

LEVERAGE. Borrowing funds in order to invest in securities that have the potential to pay earnings at a rate higher than the cost of borrowing.

LIQUIDITY. The speed and ease with which an asset can be converted to cash.

LOCAL AGENCY INVESTMENT FUND (LAIF). A voluntary investment fund open to government entities and certain non-profit organizations in California that is managed by the State Treasurer's Office.

LOCAL GOVERNMENT INVESTMENT POOL. Investment pools that range from the State Treasurer's Office Local Agency Investment Fund (LAIF) to county pools, to Joint Powers Authorities (JPAs). These funds are not subject to the same SEC rules applicable to money market mutual funds.

MAKE WHOLE CALL. A type of call provision on a bond that allows the issuer to pay off the remaining debt early. Unlike a call option, with a make whole call provision, the issuer makes a lump sum payment that equals the net present value (NPV) of future coupon payments that will not be paid because of the call. With this type of call, an investor is compensated, or "made whole."

MARGIN. The difference between the market value of a security and the loan a broker makes using that security as collateral.

MARKET RISK. The risk that the value of securities will fluctuate with changes in overall market conditions or interest rates.

MARKET VALUE. The price at which a security can be traded.

MARKING TO MARKET. The process of posting current market values for securities in a portfolio.

MATURITY. The final date upon which the principal of a security becomes due and payable.

MEDIUM TERM NOTES. Unsecured, investment-grade senior debt securities of major corporations which are sold in relatively small amounts on either a continuous or an intermittent basis. MTNs are highly flexible debt instruments that can be structured to respond to market opportunities or to investor preferences.

MODIFIED DURATION. The percent change in price for a 100 basis point change in yields. Modified duration is the best single measure of a portfolio's or security's exposure to market risk.

MONEY MARKET. The market in which short-term debt instruments (T-bills, discount notes, commercial paper, and banker's acceptances) are issued and traded.

MORTGAGE PASS-THROUGH SECURITIES. A securitized participation in the interest and principal cash flows from a specified pool of mortgages. Principal and interest payments made on the mortgages are passed through to the holder of the security.

MUNICIPAL SECURITIES. Securities issued by state and local agencies to finance capital and operating expenses.

MUTUAL FUND. An entity which pools the funds of investors and invests those funds in a set of securities which is specifically defined in the fund's prospectus. Mutual funds can be invested in various types of domestic and/or international stocks, bonds, and money market instruments, as set forth in the individual fund's prospectus. For most large, institutional investors, the costs associated with investing in mutual funds are higher than the investor can obtain through an individually managed portfolio.

NATIONALLY RECOGNIZED STATISTICAL RATING ORGANIZATION (NRSRO). A credit rating agency that the Securities and Exchange Commission in the United States uses for regulatory purposes. Credit rating agencies provide assessments of an investment's risk. The issuers of investments, especially debt securities, pay credit rating agencies to provide them with ratings. The three most prominent NRSROs are Fitch, S&P, and Moody's.

NEGOTIABLE CD. A short-term debt instrument that pays interest and is issued by a bank, savings or federal association, state or federal credit union, or state-licensed branch of a foreign bank. Negotiable CDs are traded in a secondary market and are payable upon order to the bearer or initial depositor (investor).

PREMIUM. The difference between the par value of a bond and the cost of the bond, when the cost is above par.

PREPAYMENT SPEED. A measure of how quickly principal is repaid to investors in mortgage securities.

PREPAYMENT WINDOW. The time period over which principal repayments will be received on mortgage securities at a specified prepayment speed.

PRIMARY DEALER. A financial institution (1) that is a trading counterparty with the Federal Reserve in its execution of market operations to carry out U.S. monetary policy, and (2) that participates for statistical reporting purposes in compiling data on activity in the U.S. Government securities market.

PRUDENT PERSON (PRUDENT INVESTOR) RULE. A standard of responsibility which applies to fiduciaries. In California, the rule is stated as "Investments shall be managed with the care, skill, prudence and diligence, under the circumstances then prevailing, that a prudent

person, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of like character and with like aims to accomplish similar purposes."

REALIZED YIELD. The change in value of the portfolio due to interest received and interest earned and realized gains and losses. It does not give effect to changes in market value on securities, which have not been sold from the portfolio.

REGIONAL DEALER. A financial intermediary that buys and sells securities for the benefit of its customers without maintaining substantial inventories of securities and that is not a primary dealer.

REPURCHASE AGREEMENT. Short-term purchases of securities with a simultaneous agreement to sell the securities back at a higher price. From the seller's point of view, the same transaction is a reverse repurchase agreement.

SAFEKEEPING. A service to bank customers whereby securities are held by the bank in the customer's name.

STRUCTURED NOTE. A complex, fixed income instrument, which pays interest, based on a formula tied to other interest rates, commodities or indices. Examples include inverse floating rate notes which have coupons that increase when other interest rates are falling, and which fall when other interest rates are rising, and "dual index floaters," which pay interest based on the relationship between two other interest rates - for example, the yield on the ten-year Treasury note minus the Libor rate. Issuers of such notes lock in a reduced cost of borrowing by purchasing interest rate swap agreements.

SUPRANATIONAL. A Supranational is a multi-national organization whereby member states transcend national boundaries or interests to share in the decision making to promote economic development in the member countries.

TOTAL RATE OF RETURN. A measure of a portfolio's performance over time. It is the internal rate of return, which equates the beginning value of the portfolio with the ending value; it includes interest earnings, realized and unrealized gains, and losses in the portfolio.

U.S. TREASURY OBLIGATIONS. Securities issued by the U.S. Treasury and backed by the full faith and credit of the United States. Treasuries are considered to have no credit risk, and are the benchmark for interest rates on all other securities in the US and overseas. The Treasury issues both discounted securities and fixed coupon notes and bonds.

TREASURY BILLS. All securities issued with initial maturities of one year or less are issued as discounted instruments, and are called Treasury bills. The Treasury currently issues three- and six-month T-bills at regular weekly auctions. It also issues "cash management" bills as needed to smooth out cash flows.

TREASURY NOTES. All securities issued with initial maturities of two to ten years are called Treasury notes, and pay interest semi-annually.

TREASURY BONDS. All securities issued with initial maturities greater than ten years are called Treasury bonds. Like Treasury notes, they pay interest semi-annually.

VOLATILITY. The rate at which security prices change with changes in general economic conditions or the general level of interest rates.

YIELD TO MATURITY. The annualized internal rate of return on an investment which equates the expected cash flows from the investment to its cost.

APPROVED

Date: 3/16/23

MARIN CLEAN ENERGY

POLICY 014: Investment Policy

Introduction

This Investment Policy establishes guidelines for the management of cash, deposits and investments (together, "funds") at MCE (or the "Agency").

Scope

This policy covers all funds and investment activities under the direct authority of MCE, as set forth in the State Government Code, Sections 53600 et seq., with the following exceptions:

- Proceeds of debt issuance shall be invested in accordance with MCE's general investment philosophy as set forth in this policy; however, such proceeds are to be invested pursuant to the permitted investment provisions of their specific bond indentures.

- Any other funds specifically exempted by the Governing Body.

Objectives

When managing funds, MCE's primary objectives, in order of importance, shall be to safeguard the principal of the funds, meet the liquidity needs of MCE, and achieve a return on investment on funds in MCE's control.

Safety: Safety of principal is the foremost objective of cash and investment management activities. The investment of funds shall be undertaken in a manner that seeks to ensure the preservation of principal.

Liquidity: The funds of the agency shall remain sufficiently liquid to meet all operating needs that may be reasonably anticipated. Since all possible cash demands cannot be anticipated, the investment of funds in deposits or instruments available on demand is recommended.

Return on Investment: The deposit and investment portfolio shall be designed with the objective of attaining a market rate of return throughout the economic cycle while considering risk and liquidity constraints. The return on deposits and investments is of secondary importance compared to the safety and liquidity objectives described above.

Standard of Care

MCE will manage funds in accordance with the Prudent Investor Standard pursuant to California Government Code Section 53600.3.1[1]: "Governing bodies of local agencies or persons authorized to make investment decisions on behalf of those local agencies investing public funds

[1] All further statutory references are to the California Government Code unless otherwise stated.

are trustees and therefore fiduciaries subject to the prudent investor standard. When investing, reinvesting, purchasing, acquiring, exchanging, selling or managing public funds, a trustee shall act with care, skill, prudence and diligence under the circumstances then prevailing, that a prudent person acting in a like capacity and familiarity with those matters would use in the conduct of funds of a like character and with like aims, to safeguard the principal and maintain the liquidity needs of the agency. Within the limitations of this section and considering individual investments as part of an overall strategy, investments may be acquired as authorized by law."

Delegation of Authority

Pursuant to Section 53607, the responsibility to manage funds is delegated to the Treasurer of MCE. The Treasurer may appoint Deputy Treasurers as the Treasurer deems necessary and convenient for the prompt and faithful discharge of its duties to invest and reinvest the funds of MCE, pursuant to Section 53607.

MCE may engage the services of one or more external investment advisers, who are registered under the Investment Advisers Act of 1940, to assist in the management of MCE's investment portfolio in a manner consistent with the MCE's objectives. External investment advisers may be granted discretion to purchase and sell investment securities in accordance with this Investment Policy.

Ethics and Conflicts of Interest

All participants in the investment process shall act as custodians of the public trust. Investment officials shall recognize that the investment portfolio is subject to public review and evaluation. Thus employees and officials involved in the investment process shall refrain from personal business activity that could create a conflict of interest or the appearance of a conflict with proper execution of the investment program, or which could impair their ability to make impartial investment decisions.

Employees and investment officials shall disclose to MCE's General Counsel or designee any material interests in financial institutions with which they conduct business, and they shall further disclose any large personal financial/investment positions that could be related to the performance of the investment portfolio. Employees and officers shall refrain from undertaking any personal investment transactions with the same individual with whom business is conducted on behalf of MCE.

Authorized Investments

MCE's investments are governed by California Government Code, Sections 53600 et seq. Within the investments permitted by the Code, MCE seeks to further restrict eligible investments to the guidelines listed below. In the event a discrepancy is found between this policy and the Code, the more restrictive parameters will take precedence. Percentage holding limits and minimum credit quality requirements listed in this section apply at the time the security is purchased.

Any investment currently held at the time the policy is adopted which does not meet the new policy guidelines can be held until maturity and shall be exempt from the current policy. At the time of the investment's maturity or liquidation, such funds shall be reinvested only as provided in the current policy.

The following types of investments are permitted:

Deposits at Bank(s): Funds may be invested in non-interest bearing depository accounts to meet MCE's operating and collateral needs and grant requirements. Funds not needed for these purposes may be invested in interest bearing depository accounts or Federal Deposit Insurance Corporation (FDIC) insured certificates of deposit with maturities not to exceed five years.

Banks eligible to receive deposits will be federally or state chartered and will conform to Section 53635.2 which requires that banks "have received an overall rating of not less than "satisfactory" in its most recent evaluation by the appropriate federal financial supervisory agency of its record of meeting the credit needs of California's communities, including low- and moderate-income neighborhoods, pursuant to Section 2906 of Title 12 of the United States Code."

FDIC insurance coverage in the United States is $250,000 per Tax ID Number. As per Section 53652, banks must collateralize the deposits of public agencies. The Treasurer, or a duly appointed Deputy Treasurer, will monitor the credit quality of eligible banks to ensure the safety of MCE deposits.

Local Agency Investment Fund (LAIF): Funds may be invested in the Local Agency Investment Fund. The LAIF was established by the California State Treasurer for the benefit of local agencies. Statutory requirements of the Local Agency Investment Fund include:

Section 16429.1

> a. There is in trust in the custody of the Treasurer the Local Agency Investment Fund, which fund is hereby created. The Controller shall maintain a separate account for each governmental unit having deposits in this fund.
>
> e. The local governmental unit, the nonprofit corporation, or the quasi-governmental agency has the exclusive determination of the length of time its money will be on deposit with the Treasurer.
>
> j. Money in the fund shall be invested to achieve the objective of the fund which is to realize the maximum return consistent with safe and prudent treasury management.
>
> i. Immediately at the conclusion of each calendar quarter, all interest earned and other increment derived from investments shall be distributed by the Controller to the contributing governmental units or trustees. An amount equal to the reasonable costs incurred in carrying out the provisions of this section, not to exceed a maximum of 5 percent of the earnings of this fund and not to exceed the amount appropriated in the annual Budget Act for this function, shall be deducted from the earnings prior to distribution.

Section 16429.4

The right of a city, county, city and county, special district, nonprofit corporation, or qualified quasi-governmental agency to withdraw its deposited moneys from the Local Agency Investment Fund, upon demand, may not be altered, impaired, or denied, in any way, by any state official or state agency based upon the state's failure to adopt a State Budget by July 1 of each new fiscal year.

US Treasury Obligations: Funds may be invested in United States Treasury obligations and other government obligations for which the full faith and credit of the United States are pledged for the payment of principal and interest with a term to maturity not exceeding seven (7) years. There are no limits on the dollar amount or percentage that MCE may invest in U.S. Treasuries.

Federal Agency Securities: Funds may be invested in Federal Agency Securities or United States Government-Sponsored Enterprise obligations, participations, or other instruments, including

those issued by or fully guaranteed as to principal and interest by federal agencies or United States government-sponsored enterprises. There are no limits on the dollar amount or percentage that MCE may invest in Federal Agency or Government-Sponsored Enterprises (GSEs) with a term to maturity not exceeding seven (7) years. No more than 30% of the portfolio may be invested in any single Agency/GSE issuer. Federal Agency and GSE obligations must be rated in a rating category of AA or equivalent or better. The maximum percent of agency callable securities in the portfolio will be 20%.

Commercial Paper: Funds may be invested in commercial paper in accordance with the requirements of Section 53601 and subject to the following limitations:

i. No more than 25% of the total portfolio shall be invested in commercial paper;
ii. The term to maturity shall not exceed 397 days; and

The issuer of commercial paper must meet all of the following conditions in either paragraph (a) or (b) specified below:

a. Securities issued by corporations:
   i. A corporation organized and operating in the United States with assets in excess of $500 million;
   ii. The securities are rated A-1 or its equivalent or better by a Nationally Recognized Statistical Rating Organization (NRSRO); and
   iii. If the issuer has other debt obligations, they must be rated in a rating category of "A" or its equivalent or better by at least one NRSRO.

b. Securities issued by other entities:
   i. The issuer is organized within the United States as a special purpose corporation, trust, or limited liability company.
   ii. The securities must have program-wide credit enhancements including, but not limited to, overcollateralization, letters of credit, or a surety bond.
   iii. The securities are rated "A-1" or its equivalent or better by at least one NRSRO.

Additionally, under a provision sunsetting on January 1, 2031, no more than 40% of the portfolio may be invested in Commercial Paper if MCE's investment assets under management are greater than $100,000,000. No more than 5% of the portfolio may be invested in any single issuer.

Bankers's Acceptances, provided that:

- They are issued by institutions which have short-term debt obligations rated "A-1" or its equivalent or better by at least one NRSRO; or long-term debt obligations which are rated in a rating category of "A" or its equivalent or better by at least one NRSRO.
- No more than 40% of the total portfolio may be invested in Banker's Acceptances.
- No more than 5% of the total portfolio may be invested in any single issuer.
- The maximum maturity does not exceed 180 days.

Negotiable Certificates of Deposit: Funds may be invested in negotiable certificates of deposit issued by a nationally or state-chartered bank, a savings association or a federal association, a state or federal credit union, or by a federally licensed or state-licensed branch of a foreign bank, and subject to the following limitations:

i. Issued by an entity as defined in Section 53601(i); and
ii. No more than 30% of funds invested pursuant to this Investment Policy may be invested in certificates of deposit.
iii. The amount of the NCD insured up to the FDIC limit does not require any credit ratings.

iv. Any amount above the FDIC insured limit must be issued by institutions which have short-term debt obligations rated "A-1" or its equivalent or better by at least one NRSRO; or long-term obligations rated in a rating category of "A" or its equivalent or better by at least
v. one NRSRO.
vi. No more than 5% of the portfolio may be invested in any single issuer.
vii. The maximum maturity does not exceed five (5) years.

Collateralized Time Deposits (Non-Negotiable Certificates of Deposit): Funds may be invested in state or federally chartered banks, savings and loans, or credit unions in excess of insured amounts which are fully collateralized with securities in accordance with California law, provided that:

- No more than 50% of the portfolio will be invested in a combination of federally insured and collateralized time deposits, including CDARS.
- The maximum maturity does not exceed five (5) years.

Placement Service Deposits: Funds may be invested in deposits placed with a private sector entity that assists in the placement of deposits with eligible financial institutions located in the United States (Section 53601.8). The full amount of principal and the interest that may be accrued during the maximum term of each deposit shall at all times be insured by federal deposit insurance. The combined maximum portfolio exposure to the deposits placed pursuant to this section, Insured Cash Sweep (ICS) and Certificate of Deposit Account Registry Service (CDARS) is limited to 30 percent and the maximum investment maturity will be restricted to five years, unless otherwise prescribed by law. Under a provision sunsetting on January 1, 2031, no more than 50 percent of the portfolio may be invested in deposits through a placement service, including Certificates of Deposit, if the investing agency is a city, district or local agency that does not pool money with other local agencies.

Money Market Funds: Funds registered with the Securities and Exchange Commission under the Investment Company Act of 1940 and issued by diversified management companies and meet either of the following criteria:

i. Have attained the highest ranking or the highest letter and numerical rating provided by not less than two (2) NRSROs; or
ii. Have retained an investment adviser registered or exempt from registration with the Securities and Exchange Commission with not less than five years' experience managing money market mutual funds with assets under management in excess of $500 million.

- No more than 20% of the total portfolio may be invested in Money Market Mutual Funds, and the shares of any one Money Market Mutual Fund.

Municipal Securities: Funds may be invested in municipal securities including obligations of MCE, the State of California and any local agency within the State of California, provided that:

- The securities are rated in a minimum rating category of "A" or its equivalent or better by at least one nationally recognized statistical rating organization ("NRSRO").
- No more than 5% of the portfolio may be invested in any single issuer.
- No more than 30% of the portfolio may be in Municipal Securities in the aggregate.
- The maximum maturity does not exceed seven (7) years.

Municipal Securities: Registered Treasury Notes of Bonds of any of the other 49 states in addition to California, including bonds payable solely out of the revenues from a revenue-producing

property owned, controlled, or operated by a state or by a department, board, agency, or authority of any of the other 49 states, in addition to California.

- The securities are rated in a rating category of "A" or its equivalent or better by at least one NRSRO.
- No more than 5% of the total portfolio may be invested in any single issuer.
- No more than 30% of the total portfolio may be in Municipal Securities in the aggregate.
- The maximum maturity does not exceed seven (7) years.

Repurchase Agreements: Funds may be invested in repurchase agreements collateralized with securities authorized under California Government Code, maintained at a level of at least 102% of the market value of the Repurchase Agreement. There are no limits on the dollar amount or percentage that MCE may invest, provided that:

- Securities used as collateral for Repurchase Agreements will be delivered to an acceptable third party custodian.
- Repurchase Agreements are subject to a Master Repurchase Agreement between the Agency and the provider of the repurchase agreement. The Master Repurchase Agreement will be substantially in the form developed by the Securities Industry and Financial Markets Association (SIFMA).
- The maximum maturity does not exceed one (1) year.

Corporate Medium-Term Notes (MTNs): Funds may be invested in MTMs provided that:

- The security is issued by a corporation organized and operating within the United States or by depository institutions licensed by the United States or any state and operating within the United States.
- The securities are rated in a rating category of "A" or its equivalent or better by at least one NRSRO.
- No more than 30% of the total portfolio may be invested in MTNs.
- No more than 5% of the portfolio may be invested in any single issuer.
- The maximum maturity does not exceed five (5) years.

Asset-Backed, Mortgage-Backed, Mortgage Passthrough Securities, and Collateralized Mortgage Obligations from issuers not defined as issuers of U.S. Treasuries, Federal Agencies, and Government Sponsored Enterprises in the preceding paragraphs of the Authorized Investments section of this policy: Funds may be invested in these securities provided that:

- The securities are rated in a rating category of "AA" or its equivalent or better by a NRSRO.
- No more than 20% of the total portfolio may be invested in these securities.
- No more than 5% of the portfolio may be invested in any single Asset-Backed or Commercial Mortgage security issuer.
- The maximum legal final maturity does not exceed five (5) years.

Supranationals: Funds may be invested in supranationals provided that:

- Issues are US dollar denominated senior unsecured unsubordinated obligations issued or unconditionally guaranteed by the International Bank for Reconstruction and Development, International Finance Corporation, or Inter-American Development Bank.
- The securities are rated in a rating category of "AA" or its equivalent or better by a NRSRO.
- No more than 30% of the total portfolio may be invested in these securities.
- No more than 10% of the portfolio may be invested in any single issuer.

- The maximum maturity does not exceed five (5) years.

Local Government Investment Pools (LGIP): Defined as shares of beneficial interest issued by a Joint Powers Authority (JPA): provided that:

- The JPA is organized pursuant to California Government Code Section 6509.7 and invests in the securities and obligations authorized in subdivisions (a) to (r), inclusive.
- Each share shall represent an equal proportional interest in the underlying pool of securities owned by the JPA.
- The JPA has retained an investment advisor who is registered with the SEC (or exempt from registration), has assets under management in excess of $500 million, and has at least five years' experience investing in instruments authorized by Section 53601, subdivisions (a) to (q).

Prohibited Investments

Pursuant to Section 53601.6, MCE shall not invest funds in any security that could result in a zero interest accrual, or less, if held to maturity. These prohibited investments include inverse floaters, range notes, or mortgage-derived interest-only strips, futures options. The purchase of foreign currency denominated securities is prohibited. Trading securities for the sole purpose of speculating on the future direction of interest rates is prohibited. Purchasing or selling securities on margin is prohibited. The use of reverse repurchase agreements, securities lending or any other form of borrowing or leverage is prohibited. The purchase of a security with a forward settlement date exceeding 45 days from the time of the investment is prohibited.

Investment Portfolio Management

The term to maturity of any funds invested as measured from settlement date to maturity date shall not exceed 5 years pursuant to Section 53601 unless the MCE Board has by resolution granted authority to make such an investment either specifically or as a part of an investment program approved by the legislative body no less than three months prior to the investment. U.S. Treasury securities, federal agency obligations, and municipal securities may be invested in securities with maturities no longer than seven (7) years. The Treasurer, or a duly appointed Deputy Treasurer, will allocate funds among authorized investments consistent with the objectives and standards of care outlined in this Policy.

Bids and Purchase of Securities

Prior to the purchase of an investment pursuant to this Policy the persons authorized to make investments shall assess the market and market prices using information obtained from available sources including investment services, broker/dealers, and the media. A competitive bid process, when practical, will be used to place all investment purchases and sales transactions.

Brokers

To the extent practicable, the Treasurer shall endeavor to complete investment transactions using a competitive bid process whenever possible. In accordance with Section 53601.5, institutions eligible to transact investment business with MCE include:

- Institutions licensed by the state as a broker-dealer, as defined in Section 25004 of the Corporations Code, with proof of FINRA certification.
- Institutions that are members of a federally regulated securities exchange.

- Primary government dealers as designated by the Federal Reserve Bank and non-primary government dealers.
- Nationally or state-chartered banks.
- Savings association or federal association (as defined in Section 5102 of the Financial Code).
- The Federal Reserve Bank.
- Direct issuers of securities eligible for purchase.

Selection of financial institutions and broker/dealers authorized to engage in transactions will be at the sole discretion of MCE, except where MCE utilizes an external investment adviser in which case MCE may rely on the adviser for selection.

Selection of broker/dealers used by an external investment adviser retained by MCE will be at the sole discretion of the adviser. Where possible, transactions with broker/dealers shall be selected on a competitive basis and their bid or offering prices shall be recorded. If there is no other readily available competitive offering, best efforts will be made to document quotations for comparable or alternative securities. When purchasing original issue instrumentality securities, no competitive offerings will be required as all dealers in the selling group offer those securities at the same original issue price.

The Treasurer shall be prohibited from selecting any broker, brokerage firm, dealer, or securities firm that has, within any 48-consecutive month period following January 1, 1996, made a political contribution in an amount exceeding the limitations contained in Rule G-37 of the Municipal Securities Rulemaking Board to any member of the MCE Board, or any candidate for those offices. The broker/dealers shall be provided with and acknowledge receipt of the Investment Policy.

Losses

Losses are acceptable on a sale before maturity and may be taken if required to rebalance duration, improve credit quality or increase diversification, meet the liquidity needs of the agency or if the reinvestment proceeds will earn an income flow with a present value higher than the present value of the income flow that would have been generated by the original investment, considering any investment loss or foregoing interest on the original investment.

Delivery and Safekeeping

The delivery and safekeeping of all securities shall be made through a third party custodian when practical and cost effective as determined by the Treasurer, or a duly appointed Deputy Treasurer, and in accordance with Section 53608. The Director of Finance or their designee shall review all transaction confirmations for conformity with the original transaction.

Risk Management and Diversification—Mitigating Credit Risk in the Portfolio

Credit risk is the risk that a security or a portfolio will lose some or all its value due to a real or perceived change in the ability of the issuer to repay its debt. MCE will mitigate credit risk by adopting the following strategies:

- The diversification requirements included in the “Authorized Investments” section of this policy are designed to mitigate credit risk in the portfolio.

- No more than 5% of the total portfolio may be deposited with or invested in securities issued by any single issuer unless otherwise specified in this policy.

- MCE may elect to sell a security prior to its maturity and record a capital gain or loss in order to manage the quality, liquidity or yield of the portfolio in response to market conditions or MCE's risk preferences.

- If a security owned by MCE is downgraded to a level below the requirements of this policy, making the security ineligible for additional purchases, the following steps will be taken:

    - Any actions taken related to the downgrade by the investment manager will be communicated to the Treasurer in a timely manner.

    - If a decision is made to retain the security, the credit situation will be monitored and reported to the Governing Body.

Risk Management and Diversification—Mitigating Market Risk in the Portfolio

Market risk is the risk that the portfolio value will fluctuate due to changes in the general level of interest rates. MCE recognizes that, over time, longer-term portfolios have the potential to achieve higher returns. On the other hand, longer-term portfolios have higher volatility of return. MCE will mitigate market risk by providing adequate liquidity for short-term cash needs, and by making longer-term investments only with funds that are not needed for current cash flow purposes.

MCE further recognizes that certain types of securities, including variable rate securities, securities with principal paydowns prior to maturity, and securities with embedded options, will affect the market risk profile of the portfolio differently in different interest rate environments. MCE, therefore, adopts the following strategies to control and mitigate its exposure to market risk:

- MCE will maintain a minimum of $40 million in cash and overnight investments at all times to provide sufficient liquidity for expected disbursements.

- The maximum stated final maturity of individual securities in the portfolio will be five (5) years, except as otherwise stated in this policy.

- The duration of the portfolio will generally be approximately equal to the duration (typically, plus or minus 20%) of a Market Benchmark, an index selected by MCE based on MCE's investment objectives, constraints and risk tolerances.

Conflict of Interest

In accordance with state law, staff shall not accept honoraria, gifts, and gratuities from advisors, brokers, dealers, bankers, or other person with whom MCE conducts business.

Audits

MCE's funds shall be subject to a process of independent review by its external auditors. MCE's external auditors shall review the investment portfolio in connection with the annual audit for compliance with the Investment Policy pursuant to Section 27134. The results of the audit shall be reported to the Director of Finance and the Ad Hoc Audit Committee.

Reports

Monthly: So long as the Board of Directors' annual delegation of investment authority pursuant to Section 53607 to the Treasurer is effective, the Treasurer or a duly appointed Deputy Treasurer will perform a monthly review of the investment function and shall submit a monthly report of all investment transactions to the Board of Directors. Investment transactions are defined as the purchase, sale or exchange of securities.

Annually: The Treasurer, or a duly appointed Deputy Treasurer, will submit an annual report to the Board of Directors and Chief Executive Officer within 45 days of the end of a fiscal year providing the following:

i. A list identifying the type of investment, issuer, date of maturity, par and dollar amount invested on all securities, the market value and source of the market value information;
ii. A statement that the portfolio is in compliance with the Investment Policy and in accordance with Section 53646 or the manner in which the portfolio is not in compliance; and
iii. A statement of MCE's ability to meet expenditure requirements for the upcoming 12 months.

Annual Review

The Investment Policy will be reviewed annually by the Treasurer, or a duly appointed Deputy Treasurer. Any changes to the Investment Policy will be submitted to the Board for approval.

Glossary of Investment Terms

AGENCIES. Shorthand market terminology for any obligation issued by *a government-sponsored entity (GSE),* or a *federally related institution*. Most obligations of GSEs are not guaranteed by the full faith and credit of the US government. Examples are:

FFCB. The Federal Farm Credit Bank System provides credit and liquidity in the agricultural industry. FFCB issues discount notes and bonds.

FHLB. The Federal Home Loan Bank provides credit and liquidity in the housing market. FHLB issues discount notes and bonds.

FHLMC. Like FHLB, the Federal Home Loan Mortgage Corporation provides credit and liquidity in the housing market. FHLMC, also called "FreddieMac" issues discount notes, bonds and mortgage pass-through securities.

FNMA. Like FHLB and FreddieMac, the Federal National Mortgage Association was established to provide credit and liquidity in the housing market. FNMA, also known as "FannieMae," issues discount notes, bonds and mortgage pass-through securities.

GNMA. The Government National Mortgage Association, known as "GinnieMae," issues mortgage pass-through securities, which are guaranteed by the full faith and credit of the US Government.

PEFCO. The Private Export Funding Corporation assists exporters. Obligations of PEFCO are not guaranteed by the full faith and credit of the US government.

TVA. The Tennessee Valley Authority provides flood control and power and promotes development in portions of the Tennessee, Ohio, and Mississippi River valleys. TVA currently issues discount notes and bonds.

ASKED. The price at which a seller offers to sell a security.

ASSET BACKED SECURITIES. Securities supported by pools of installment loans or leases or by pools of revolving lines of credit.

AVERAGE LIFE. In mortgage-related investments, including CMOs, the average time to expected receipt of principal payments, weighted by the amount of principal expected.

BANKER'S ACCEPTANCE. A money market instrument created to facilitate international trade transactions. It is highly liquid and safe because the risk of the trade transaction is transferred to the bank which "accepts" the obligation to pay the investor.

BENCHMARK. A comparison security or portfolio. A performance benchmark is a partial market index, which reflects the mix of securities allowed under a specific investment policy.

BID. The price at which a buyer offers to buy a security.

BROKER. A broker brings buyers and sellers together for a transaction for which the broker receives a commission. A broker does not sell securities from his own position.

CALLABLE. A callable security gives the issuer the option to call it from the investor prior to its maturity. The main cause of a call is a decline in interest rates. If interest rates decline since an issuer issues securities, it will likely call its current securities and reissue them at a lower rate of interest. Callable securities have reinvestment risk as the investor may receive its principal back when interest rates are lower than when the investment was initially made.

CERTIFICATE OF DEPOSIT (CD). A time deposit with a specific maturity evidenced by a certificate. Large denomination CDs may be marketable.

CERTIFICATE OF DEPOSIT ACCOUNT REGISTRY SYSTEM (CDARS). A private placement service that allows local agencies to purchase more than $250,000 in CDs from a single financial institution (must be a participating institution of CDARS) while still maintaining FDIC insurance coverage. CDARS is currently the only entity providing this service. CDARS facilitates the trading of deposits between the California institution and other participating institutions in amounts that are less than $250,000 each, so that FDIC coverage is maintained.

COLLATERAL. Securities or cash pledged by a borrower to secure repayment of a loan or repurchase agreement. Also, securities pledged by a financial institution to secure deposits of public monies.

COLLATERALIZED MORTGAGE OBLIGATIONS (CMO). Classes of bonds that redistribute the cash flows of mortgage securities (and whole loans) to create securities that have different levels of prepayment risk, as compared to the underlying mortgage securities.

COMMERCIAL PAPER. The short-term unsecured debt of corporations.

COST YIELD. The annual income from an investment divided by the purchase cost. Because it does not give effect to premiums and discounts which may have been included in the purchase cost, it is an incomplete measure of return.

COUPON. The rate of return at which interest is paid on a bond.

CREDIT RISK. The risk that principal and/or interest on an investment will not be paid in a timely manner due to changes in the condition of the issuer.

CURRENT YIELD. The annual income from an investment divided by the current market value. Since the mathematical calculation relies on the current market value rather than the investor's cost, current yield is unrelated to the actual return the investor will earn if the security is held to maturity.

DEALER. A dealer acts as a principal in security transactions, selling securities from and buying securities for his own position.

DEBENTURE. A bond secured only by the general credit of the issuer.

DELIVERY VS. PAYMENT (DVP). A securities industry procedure whereby payment for a security must be made at the time the security is delivered to the purchaser's agent.

DERIVATIVE. Any security that has principal and/or interest payments which are subject to uncertainty (but not for reasons of default or credit risk) as to timing and/or amount, or any security which represents a component of another security which has been separated from other components ("Stripped" coupons and principal). A derivative is also defined as a financial instrument the value of which is totally or partially derived from the value of another instrument, interest rate, or index.

DISCOUNT. The difference between the par value of a bond and the cost of the bond, when the cost is below par. Some short-term securities, such as T-bills and banker's acceptances, are known as discount securities. They sell at a discount from par, and return the par value to the investor at maturity without additional interest. Other securities, which have fixed coupons, trade at a discount when the coupon rate is lower than the current market rate for securities of that maturity and/or quality.

DIVERSIFICATION. Dividing investment funds among a variety of investments to avoid excessive exposure to any one source of risk.

DURATION. The weighted average time to maturity of a bond where the weights are the present values of the future cash flows. Duration measures the price sensitivity of a bond to changes in interest rates. (See modified duration).

FEDERAL FUNDS RATE. The rate of interest charged by banks for short-term loans to other banks. The Federal Reserve Bank through open-market operations establishes it.

FEDERAL OPEN MARKET COMMITTEE. A committee of the Federal Reserve Board that establishes monetary policy and executes it through temporary and permanent changes to the supply of bank reserves.

LEVERAGE. Borrowing funds in order to invest in securities that have the potential to pay earnings at a rate higher than the cost of borrowing.

LIQUIDITY. The speed and ease with which an asset can be converted to cash.

LOCAL AGENCY INVESTMENT FUND (LAIF). A voluntary investment fund open to government entities and certain non-profit organizations in California that is managed by the State Treasurer's Office.

LOCAL GOVERNMENT INVESTMENT POOL. Investment pools that range from the State Treasurer's Office Local Agency Investment Fund (LAIF) to county pools, to Joint Powers Authorities (JPAs). These funds are not subject to the same SEC rules applicable to money market mutual funds.

MAKE WHOLE CALL. A type of call provision on a bond that allows the issuer to pay off the remaining debt early. Unlike a call option, with a make whole call provision, the issuer makes a lump sum payment that equals the net present value (NPV) of future coupon payments that will not be paid because of the call. With this type of call, an investor is compensated, or "made whole."

MARGIN. The difference between the market value of a security and the loan a broker makes using that security as collateral.

MARKET RISK. The risk that the value of securities will fluctuate with changes in overall market conditions or interest rates.

MARKET VALUE. The price at which a security can be traded.

MARKING TO MARKET. The process of posting current market values for securities in a portfolio.

MATURITY. The final date upon which the principal of a security becomes due and payable.

MEDIUM TERM NOTES. Unsecured, investment-grade senior debt securities of major corporations which are sold in relatively small amounts on either a continuous or an intermittent basis. MTNs are highly flexible debt instruments that can be structured to respond to market opportunities or to investor preferences.

MODIFIED DURATION. The percent change in price for a 100 basis point change in yields. Modified duration is the best single measure of a portfolio's or security's exposure to market risk.

MONEY MARKET. The market in which short-term debt instruments (T-bills, discount notes, commercial paper, and banker's acceptances) are issued and traded.

MORTGAGE PASS-THROUGH SECURITIES. A securitized participation in the interest and principal cash flows from a specified pool of mortgages. Principal and interest payments made on the mortgages are passed through to the holder of the security.

MUNICIPAL SECURITIES. Securities issued by state and local agencies to finance capital and operating expenses.

MUTUAL FUND. An entity which pools the funds of investors and invests those funds in a set of securities which is specifically defined in the fund's prospectus. Mutual funds can be invested in various types of domestic and/or international stocks, bonds, and money market instruments, as set forth in the individual fund's prospectus. For most large, institutional investors, the costs associated with investing in mutual funds are higher than the investor can obtain through an individually managed portfolio.

NATIONALLY RECOGNIZED STATISTICAL RATING ORGANIZATION (NRSRO). A credit rating agency that the Securities and Exchange Commission in the United States uses for regulatory purposes. Credit rating agencies provide assessments of an investment's risk. The issuers of investments, especially debt securities, pay credit rating agencies to provide them with ratings. The three most prominent NRSROs are Fitch, S&P, and Moody's.

NEGOTIABLE CD. A short-term debt instrument that pays interest and is issued by a bank, savings or federal association, state or federal credit union, or state-licensed branch of a foreign bank. Negotiable CDs are traded in a secondary market and are payable upon order to the bearer or initial depositor (investor).

PREMIUM. The difference between the par value of a bond and the cost of the bond, when the cost is above par.

PREPAYMENT SPEED. A measure of how quickly principal is repaid to investors in mortgage securities.

PREPAYMENT WINDOW. The time period over which principal repayments will be received on mortgage securities at a specified prepayment speed.

PRIMARY DEALER. A financial institution (1) that is a trading counterparty with the Federal Reserve in its execution of market operations to carry out U.S. monetary policy, and (2) that participates for statistical reporting purposes in compiling data on activity in the U.S. Government securities market.

PRUDENT PERSON (PRUDENT INVESTOR) RULE. A standard of responsibility which applies to fiduciaries. In California, the rule is stated as "Investments shall be managed with the care, skill, prudence and diligence, under the circumstances then prevailing, that a prudent

person, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of like character and with like aims to accomplish similar purposes."

REALIZED YIELD. The change in value of the portfolio due to interest received and interest earned and realized gains and losses. It does not give effect to changes in market value on securities, which have not been sold from the portfolio.

REGIONAL DEALER. A financial intermediary that buys and sells securities for the benefit of its customers without maintaining substantial inventories of securities and that is not a primary dealer.

REPURCHASE AGREEMENT. Short-term purchases of securities with a simultaneous agreement to sell the securities back at a higher price. From the seller's point of view, the same transaction is a reverse repurchase agreement.

SAFEKEEPING. A service to bank customers whereby securities are held by the bank in the customer's name.

STRUCTURED NOTE. A complex, fixed income instrument, which pays interest, based on a formula tied to other interest rates, commodities or indices. Examples include inverse floating rate notes which have coupons that increase when other interest rates are falling, and which fall when other interest rates are rising, and "dual index floaters," which pay interest based on the relationship between two other interest rates - for example, the yield on the ten-year Treasury note minus the Libor rate. Issuers of such notes lock in a reduced cost of borrowing by purchasing interest rate swap agreements.

SUPRANATIONAL. A Supranational is a multi-national organization whereby member states transcend national boundaries or interests to share in the decision making to promote economic development in the member countries.

TOTAL RATE OF RETURN. A measure of a portfolio's performance over time. It is the internal rate of return, which equates the beginning value of the portfolio with the ending value; it includes interest earnings, realized and unrealized gains, and losses in the portfolio.

U.S. TREASURY OBLIGATIONS. Securities issued by the U.S. Treasury and backed by the full faith and credit of the United States. Treasuries are considered to have no credit risk, and are the benchmark for interest rates on all other securities in the US and overseas. The Treasury issues both discounted securities and fixed coupon notes and bonds.

TREASURY BILLS. All securities issued with initial maturities of one year or less are issued as discounted instruments, and are called Treasury bills. The Treasury currently issues three- and six-month T-bills at regular weekly auctions. It also issues "cash management" bills as needed to smooth out cash flows.

TREASURY NOTES. All securities issued with initial maturities of two to ten years are called Treasury notes, and pay interest semi-annually.

TREASURY BONDS. All securities issued with initial maturities greater than ten years are called Treasury bonds. Like Treasury notes, they pay interest semi-annually.

VOLATILITY. The rate at which security prices change with changes in general economic conditions or the general level of interest rates.

YIELD TO MATURITY. The annualized internal rate of return on an investment which equates the expected cash flows from the investment to its cost.

Empowering Our Clean Energy Future

MARIN COUNTY | NAPA COUNTY | UNINCORPORATED CONTRA COSTA COUNTY
UNINCORPORATED SOLANO COUNTY | BENICIA | CONCORD | DANVILLE | EL CERRITO
FAIRFIELD | HERCULES | LAFAYETTE | MARTINEZ | MORAGA | OAKLEY | PINOLE
PITTSBURG | PLEASANT HILL | RICHMOND | SAN PABLO | SAN RAMON | WALNUT CREEK

DRAFT

MCE Board of Directors Meeting
Thursday, September 17, 2026
6:30 p.m.

1125 Tamalpais Avenue
San Rafael, CA 94901

2300 Clayton Road, Suite 1500
Concord, CA, 94520

Public comments may be made in person or remotely via the details below.

Remote Public Meeting Participation

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Phone: Dial (669) 900-9128, Meeting ID: 890 0487 7785, Passcode: 525690

Materials related to this agenda are available for physical inspection at MCE's offices in San Rafael at 1125 Tamalpais Avenue, San Rafael, CA 94901 and in Concord at 2300 Clayton Road, Suite 1500, Concord, CA 94520.

DISABLED ACCOMMODATION: If you are a person with a disability who requires an accommodation or an alternative format, please contact MCE at (888) 632-3674 or ada-coordinator@mceCleanEnergy.org at least 72 hours before the meeting start time to ensure arrangements are made.

The Board of Directors may discuss and/or take action on any or all of the items listed on the agenda irrespective of how the items are described.

1. Roll Call/Quorum

2. Public Open Time on Closed Session Matters

CLOSED SESSION

2.A. Conference with Legal Counsel – Anticipated Litigation
Significant exposure to litigation pursuant to paragraph (2) or (3) of subdivision (d) of Section 54956.9: One Case

A point has been reached where, in the opinion of the Agency Board on the advice of its legal counsel, based on the below-described existing facts and circumstances, there is a significant exposure to litigation against the Agency: Receipt of Claim pursuant to Government Claims Act or other written communication threatening litigation (copy available for public inspection in Clerk's office). (Gov. Code § 54956.9(e)(3))
Name of Person or Entity Threatening Litigation: Dawn Weisz

2.B. Conference with Legal Counsel – Anticipated Litigation
Significant exposure to litigation pursuant to paragraph (2) or (3) of subdivision (d) of Section 54956.9: One Case
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Name of Person or Entity Threatening Litigation: Vidhi Chawla

3. Roll Call/Quorum

4. Board Announcements (Discussion)

5. Public Open Time (Discussion)

6. Report from Chief Executive Officer (Discussion)

7. Consent Calendar (Discussion/Action)

   C.1. Approval of 8.20.26 Meeting Minutes

   C.2. Proposed Amendment of Policy 014: MCE's Investment Policy

   C.3. 2025 Power Source Disclosure Attestation

8. Fiscal Year End 2026: Budget Results, Power Supply Variance, and Ratification of Certain Line Item Variances (Discussion/Action)

9. Update and recommendations from Ad Hoc CEO Search Committee (Discussion/Action)

10. Deliver Findings of Governance Assessment (Discussion)
11. Financial Audit Fiscal Year End 2026 (Discussion)
12. Board & Staff Matters (Discussion)
13. Adjourn

Informational Reports

I.1 Approved Contracts for Energy Update

I.2 Legislative and Regulatory Updates

I.3 Customer and Community Impact Update

Empowering Our Clean Energy Future
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September 8, 2026

TO:	MCE Executive Committee
FROM:	Maíra Strauss, Chief Financial Officer Kaladhar R. Bollampalli, Director of Power Systems and Analytics Efren Oxlaj, Manager of Finance
RE:	Fiscal Year End 2026: Budget Results, Power Supply Variance, and Ratification of Certain Line Item Variances (Agenda Item #06)
ATTACHMENT:	A. Presentation on Fiscal Year End 2026: Budget Results, Power Supply Variance, and Ratification of Certain Line Item Variances B. FYE 2026 Operating Fund Budget Comparison C. FYE 2026 Operating Fund Budget Comparison – Contingency Applied D. FYE 2026 Program Development Fund Budget Comparison E. FYE 2026 Resiliency Virtual Power Plant Fund Budget Comparison F. FYE 2026 Energy Efficiency Program Fund Budget Comparison G. Resolution 2026-07 Ratifying Certain Line Item Variances Between Actual and Budgeted Amounts in MCE's Fiscal Year End 2026 Budget

Dear Executive Committee Members:

Summary:
This report analyzes MCE's actual results relative to the Board approved Budgets for the fiscal year ended (FYE) March 31, 2026, and requests ratification of certain line item variances between actual and budgeted amounts for FYE 2026 via Resolution 2026-07. On a budget basis, MCE closed the year with a change in net position of $1.5 million[1], compared to a budgeted $16.6 million, representing a variance of about $15 million or 91%. The fiscal year was shaped by softer than expected demand due to mild summer weather in 2025 which suppressed load. Consequently, energy revenue finished 6.1% below budget. Meanwhile, MCE's cost of energy fell further, ending $113.0 million or 14.8% below budget on lower market prices, reduced volumes, and favorable CAISO market settlements. Part of that favorability was a matter of timing. A short-term renewable index+ contract, one of the final transactions used to close MCE's calendar year 2025 renewable position, delivered earlier than expected thus moving costs out of FYE 2026. The Renewable Portfolio Planning & Results section below discusses that transaction, its estimated financial impact across FYE 2025 and FYE 2026, and the procurement changes staff have since adopted.

[1] The change in net position shown here is a consolidated, budget-basis figure covering all of MCE's funds. It approximates the financial statements but does not tie exactly, as the statements include GASB accounting adjustments that the budget does not.

Furthermore, non-operating revenue exceeded projections on strong investment income, while operating expenses finished 6.8% below budget, and program spending reflected underspending on most customer programs partially offset by stronger than anticipated demand for MCE's EV incentives. As detailed herein, although MCE's total expenses and capital outlay fell well below budgeted amounts, some expenses have exceeded budgeted amounts listed within the line items of an applicable approved budget (MCE has four approved budgets and collectively they represent the MCE Budget). On August 27, 2026, the Finance Committee unanimously recommended that the Board approve Resolution 2026-07, Ratifying Certain Line Item Variances Between Actual and Budgeted Amounts in MCE's Fiscal Year End 2026 Budget. This action will formally close FYE 2026.

A high-level summary of the MCE Budget is shown below.

Table 1[2]: Summary of MCE's Budget Results

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %
Energy Revenue, Net	$ 764,392,000	$ 813,689,000	$ (49,297,000)	(6.1%)
ORF Withdrawal/Transfer	(80,000,000)	13,000,000	(93,000,000)	(715.4%)
Cost of Energy	(652,516,000)	(765,542,000)	113,026,000	14.8%
Operating Expenses	(46,825,000)	(50,249,000)	3,424,000	6.8%
Non-Operating Revenues	26,593,000	18,278,000	8,315,000	45.5%
Non-Operating Expenses	(1,019,000)	(3,503,000)	2,484,000	70.9%
Program Expenses	(20,935,000)	(30,474,000)	9,539,000	31.3%
Program Income	11,807,000	21,393,000	(9,586,000)	(44.8%)
Change in Net Position	**1,497,000**	**16,592,000**	**(15,095,000)**	**(91.0%)**
Capital Outlay	(5,684,000)	(15,999,000)	10,315,000	64.5%
Total Expenses & Capital Outlay	**(726,979,000)**	**(865,767,000)**	**138,788,000**	**16.0%**

Overview of MCE Fund Budgets

MCE's fiscal year runs from April 1 through March 31 of the following calendar year. For FYE 2026, your Board approved four budgets: the Operating Fund Budget, the Energy Efficiency Budget, the Program Development Fund Budget, and the Resiliency Virtual Power Plant (VPP) Fund Budget.

The Operating Fund Budget captures activities related to MCE's core functions including sales of electricity, cost of energy, operating expenses, non-operating revenues and expenses, and capital outlay. The Energy Efficiency Fund Budget is entirely funded by the California Public Utilities Commission for energy efficiency programs. The Program Development Fund is funded by 50% of the Deep Green premium and grants, and any additional transfers from the Operating Fund, subject

[2] Variance $ is calculated as Actual less Budget. Variance % is calculated as Variance $ divided by the absolute value of Budget. Expenses are presented as negative amounts so the Variance $ column reconciles to Change in Net Position. This methodology applies to this consolidated summary table.

to your Board's approval. This fund supports program incentives for electrification, electric vehicle (EV) adoption and EV charging stations. The Resiliency Virtual Power Plant Fund focuses on scaling MCE's efforts with virtual power plants and energy storage. This fund may include grants and Board approved transfers from the Operating Fund.

Energy Revenue

Table 2: Energy Revenue Results

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %
Energy Revenue	$ 780,138,000	$ 831,238,000	$ (51,100,000)	(6.1%)
Uncollectible Accounts	(9,951,000)	(12,469,000)	2,518,000	(20.2%)
MCE Cares Relief Program	(5,795,000)	(5,000,000)	(795,000)	15.9%
Bi-Directional Vehicle Charging Tariff	-	(79,500)	79,500	(100.0%)
Energy Revenue, Net	**764,392,000**	**813,689,500**	**(49,297,500)**	**(6.1%)**
Transfer/Withdrawal to ORF	(80,000,000)	13,000,000	(93,000,000)	(715.4%)
Total Energy Revenue	**684,392,000**	**826,689,500**	**(142,297,500)**	**(17.2%)**
Sales (MWh)	5,296,000	5,744,000	(448,000)	(7.8%)
Average Retail Rate	$ 147.3	$ 144.7	$ 2.6	1.8%

Gross energy revenue came in at $780.1 million (6.1% below budget) due to lower sales volume. The cool summer temperatures in 2025 experienced across MCE's service area suppressed air conditioning related demand that the forecast had anticipated. As a result, sales volume came in 7.8% below forecast. A slightly higher average retail rate ($147.3 actual versus $144.7 budgeted, up 1.8%) partially offset the impact of the softer demand.

The following items reduced energy revenue:

- Uncollectible amounts totaled about $10 million, or 20.2% better than projections. Customer delinquencies were projected at 1.5% of sales, but actual results were closer to 1.3% suggesting stronger payment behavior from customers.
- The MCE Cares Relief Program cost $5.8 million, approximately 15.9% above budget. Spending exceeded projections due to the timing of program expenditures and delays in reducing participation as the program approached its funding limit. Program expenditures continued beyond the available budget as previously committed bill credits were honored and enrollment adjustments could not be fully implemented until customers progressed through their normal billing cycles. Management has since implemented enhanced budget monitoring, forecasting, reconciliation, and escalation procedures to strengthen oversight of future customer assistance programs.
- The Bi-Directional Vehicle Charging Tariff had no activity against a budget of $79,500.

After these items, net energy revenue was $764.4 million, or $49.3 million (6.1%) below budget, closely tracking the shortfall in gross revenue.

Revenue was further reduced by the Board approved $80.0 million transfer to the Operating Reserve Fund (ORF), compared with a budgeted $13.0 million withdrawal, resulting in a $93.0 million change from the original budget assumption. This represents a positive results as the transfer strengthens MCE's ability to provide rate stabilization capacity to help manage future energy market volatility and other financial risks. The transfer is also expected to replenish the ORF balance following the planned withdrawal in the current fiscal year.

Cost of Energy: $652,516,000 (14.8% below the Approved Budget)
The cost of energy represents the expenditures MCE incurs to procure the electricity it delivers to customers. It is the largest expense for the agency. It consists of payments to suppliers under long and short-term contracts for renewable, large hydroelectric, and other carbon-free electricity. Payments to reserve enough capacity (i.e. resource adequacy) to keep the grid reliable per state requirements, are also captured in this category. Other costs in this category include payments to hedge contract counterparties. Because MCE's renewable and clean energy contracts do not fully cover customer demand in every hour, the agency also enters into hedge contracts that lock in fixed prices for a portion of the system power it purchases through the California Independent System Operator (CAISO) market. Hedge contracts stabilize costs against price volatility. Finally, the cost of energy also captures the net cost of load, generation credits, and other charges settled through MCE's participation in the CAISO market. The cost of energy fluctuates from year to year with market conditions, including renewable energy prices, resource adequacy costs, CAISO market prices, hydroelectric availability, renewable generation output, congestion, contract terms, and the timing of procurement.

Table 3: Cost of Energy Results by the "Super Six" Categories[3]

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %
Hedge Contracts	$ 274,960,000	$ 265,050,000	$ 9,910,000	3.7%
Resource Adequacy	130,444,000	145,713,000	(15,269,000)	(10.5%)
Renewable - Short Term	67,675,000	131,035,000	(63,360,000)	(48.4%)
Renewable - Long Term	131,837,000	122,588,000	9,249,000	7.5%
Net CAISO Costs	19,234,000	85,084,000	(65,850,000)	(77.4%)
Carbon Free - Large Hydro/ACS	28,367,000	16,072,000	12,295,000	76.5%
Total	**652,517,000**	**765,542,000**	**(113,025,000)**	**(14.8%)**

Cost of energy totaled $652.5 million (14.8% below budget) driven largely by mild weather, softer customer demand, and favorable market prices which sharply lowered the agency's net CAISO costs. A shift of expenses to the previous fiscal year due to early deliveries from a short-term contract further reduced the cost of energy. The following drivers explain the results shown in Table 3.

- Hedge Contracts – total costs were higher than projections by about $9.9 million or 3.7% due to additional hedge contracts executed after the budget was set. However, the added volumes also lowered Net CAISO costs since hedge contracts are settled against CAISO

[3] Total shown in the table differs by about $1,000 from the total on the budget report due to rounding to the nearest one thousand of the individual categories shown. This rounding may impact subsequent tables shown.

system power costs. MCE pays a fixed price for hedge contracts and receives the floating CAISO price which offsets budgeted open positions for system power under Net CAISO Costs.

- Resource Adequacy – total costs were lower than projections by about $15.3 million or 10.5% due to surplus RA sales, portfolio optimizations, and a post-budget contract termination.
- Renewable – Short Term – Costs came in about $63.4 million, or 48.4%, below projections, representing the second largest variance in the portfolio and driven primarily by non-recurring factors. Most significantly, a supplier accelerated renewable deliveries into the prior fiscal year. This reduced FYE 2026 contract costs by approximately $36.4 million relative to budget, as a significant portion of the contract deliveries had already been recognized in FYE 2025. The costs were also lower because the approved budget overstated planned costs by about $10.3 million. In addition, MCE had a smaller open position for renewable energy than planned due to the softer demand which reduced the volumes MCE needed to cover. Finally, MCE terminated a short-term contract after the budget was set.
- Renewable – Long Term – costs came in about $9.2 million above projections. Costs are based on forecasted production by projects, but actual production can differ based on delivered energy, curtailment, and deemed delivered energy. As a result of MCE's three energy prepayments, about $13.8 million in savings was recognized during the fiscal year, reducing the costs for renewable energy from long term contracts by a like amount.
- Net CAISO Costs – Costs came in about $65.9 million or 77.4% below projections, the single largest favorable variance in the portfolio. Due to milder weather and consequently softer demand from customers, MCE purchased less energy in the CAISO market. Lower than forecasted spot-market prices reduced the cost of the energy MCE did purchase. As noted above, because MCE executed additional hedge contracts after the budget was set, a portion of costs effectively shifted out of the net CAISO line and into the hedge contracts line[4].
- Carbon Free – Large Hydro/ACS - costs were above forecast by about $12.3 million or 76.5% and reflects higher than expected deliveries associated with import RA purchases, which come with bundled carbon free energy. Import RA is necessary for compliance requirements.

In total, cost of energy came in at about $113.0 million below budget, largely offsetting the drop in energy revenue and significantly contributing to the results for the fiscal year.

Renewable Portfolio Planning & Results

The shift of renewable costs into the prior fiscal year traces back to a single short-term contract. That contract was one of the final transactions used to close MCE's calendar year 2025 renewable position, and the supplier delivered the contracted quantities much earlier than anticipated. Although executed to secure MCE's renewable targets, evolving 2025 energy demand later revealed the contract was unnecessary to fulfill the Board's renewable mandates.

[4] The favorable Net CAISO variance and the unfavorable hedge variance are inversely related and partly offsetting.

The following section describes how the calendar year 2025 renewable position developed, the estimated financial impact of the additional procurement, and the changes staff have implemented in response.

Renewable procurement occurs in advance of actual customer load and resource generation. Because both are uncertain and Board approved renewable targets are firm annual targets, planning margins have historically been used to reduce the risk of falling short.
The state Renewable Portfolio Standard (RPS) program provides flexibility across a multi-year compliance period, including the ability to apply excess procurement toward future compliance. In contrast, MCE's renewable targets are higher than state requirements, and its standard practice is to plan and procure renewable energy to meet annual targets within the year to which they apply. This creates a greater need to manage uncertainty within each year.

For 2025 calendar year, staff procured about 75% of forecast renewable need in advance. Actual load subsequently came in below forecast, while renewable supply declined by a smaller amount, resulting in a long renewable position. Once the long position became clearer following summer 2025, staff pursued opportunities to sell expected excess renewable supplies. The amount and value that could be sold were affected by market timing, liquidity, and prevailing prices.

Table 4: 2025 Renewable Position

2025 Renewable Position	**Renewable Percentage**	**Notes**	**Estimated Financial Impact ($)**
Board Target (Target)	64%	Weighted: 100% Deep Green & 60% Light Green	
Target + Loss Adjustment	68%	Target + 6% loss factor for reporting (effective 2025)	
Planned Target	75%	Target + 6% (loss factor) + 10% (planning margin)	
Actual Renewable Share of Actual Retail-Sales	77%	Actual Renewable Position	
Actual Position above Board Target	**+13%**	**64% → 77%**	**$73 million**

With perfect hindsight and knowledge of actual load and renewable supply, one of the final procurement transactions used to close the 2025 position would not have been necessary. That transaction contributed to the resulting long position and represents an estimated $72.8 million total financial impact. The impact was spread between two fiscal years: about $54.6 million in FYE 2025 and $18.2 million in FYE 2026[5]. The transaction largely contributed to the budget overrun observed in FYE 2025 as the supplier delivered the renewable energy quantities much earlier than anticipated.

[5] On a budget basis, the FYE 2026 Approved Budget assumed about $6 million per month for this contract from April through December 2025 (about $54.6 million). Because the supplier delivered early, only $18.2

The $72.8 million figure represents a perfect hindsight assessment based on actual conditions subsequently realized, rather than information that was fully known when the procurement decision was made. Staff have included this analysis to support your Board's oversight role and to document the procurement process changes already adopted, consistent with the agency's broader focus on strengthening financial and governance practices.

Improvements Implemented for FYE 2027
Staff has already implemented the following changes based on 2025 review:

- **Removed the historical 10% planning margin:** The 6% loss adjustment incorporated into the portfolio planning provides additional coverage relative to the retail sales, reducing the need for a separate planning margin.
- **Strengthened position monitoring:** Positions are reviewed on a more frequent basis using updated forecasts, best available metered data and market information to identify emerging risks and opportunities and assess **buy, sell, or hold** decisions.

Potential Future Policy Considerations

- **Flexible annual renewable targets** rather than firm annual targets, enabling a more price-responsive and value-driven procurement strategy.
- **Allowing excess renewable supply to count toward future Board targets,** like the flexibility available under the state RPS compliance framework.
- **Reassessing voluntary renewable target levels,** including the option of greater alignment with state requirements.
- **Flexibility to meet the loss-adjusted target** using either renewable energy or other carbon-free resources. Current policy guidance is not clearly defined.

Operating Expenses: $46,825,000 (6.8% below the Approved Budget)
Operating expenses capture the overhead essential to running MCE, ranging from personnel to occupancy costs. This category also includes a contingency budget that can be drawn upon to offset any overages in any of the operating expense line items. For FYE 2026, total operating expenses came in at $46.8 million or 6.8% under budget, consistent with results in prior years. Except for personnel, data manager fees, and communication services, all lines were below budget. To remain within the Board approved budgets, MCE utilized $296,000 in contingency funds to offset the above budget variance for personnel, data manager, and communication services.

Personnel: $25,484,000 (0.3% above the Approved Budget before applying contingency)
Personnel costs include full-time equivalent (FTE) MCE staff salaries and wages, employee benefits, retirement contributions, payroll taxes, and other employee-related expenses.

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million was recognized in FYE 2026, leaving the $36.4 million favorable budget variance noted earlier ($54.6 million budgeted minus $18.2 million actual).

Personnel costs can fluctuate based on staffing levels, vacancies, hiring timelines, and grant reimbursements that offset staffing costs.

Table 5: Personnel Expenses breakdown

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %
Expenses	$ 28,500,000	$ 29,517,000	$(1,016,000)	(3.4)%
Grant Reimbursements	(3,016,000)	(4,112,000)	1,095,000	(26.6)%
Total	**25,484,000**	**25,405,000**	**79,000**	**0.3%**

Personnel costs totaled $25.5 million, or 0.3% above budget. While personnel expenses were $1.0 million below budget, grant reimbursements were $1.1 million below budget. This more than offset the payroll savings and resulted in personnel costs ending $79,000 above budget.

The shortfall in grant reimbursements was primarily driven by lower than budgeted realized reimbursements associated with CPUC Energy Efficiency programs. Reimbursements were lower largely because labor costs charged to grant-funded activities came in below budget. Additionally, one grant-funded position included in the budget was not filled, resulting in both lower personnel expenses and lower corresponding grant reimbursements. Staffing changes during the year reduced the amount of labor charged to certain grant-funded projects, further decreasing grant reimbursements.

A portion of the grant reimbursements variance was also attributed to challenges with consistently tracking grant-related staff time. As of July 2026, MCE has fully transitioned grant timekeeping and reimbursement tracking to Euna Grants, following recommendations from MCE's external grant compliance consultant, Award Advisors. The updated process improves the accuracy of labor allocations, reimbursement claims, and grant compliance while centralizing all grant timekeeping into a single system. The system also provides greater visibility into estimated versus actual grant-funded staff hours, improving budget monitoring, staffing allocation, and reimbursement tracking.

Gross personnel expenses came in below budget largely because several positions budgeted to be filled during FYE 2026 remained vacant longer than anticipated or were eliminated during the year.

	FYE 2026 Actual	FYE 2026 Budget	Variance	Variance %
FTE Staff	108	117	(9)	(7.7)%

At the end of the fiscal year, personnel expenses reflected nine fewer FTE positions than assumed in the budget. The remaining FTE positions have already been filled or are expected to be filled during the current fiscal year.

Overall, savings generated by staffing vacancies were more than offset by lower than expected grant reimbursements, resulting in personnel costs ending modestly above budget.

Data Manager: $5,428,000 (2.9% above the Approved Budget before applying contingency)
MCE's data manager provides a wide range of billing services, including billing management for MCE's customers, technical support for billing issues, and customer enrollment services. The charges are based on a fixed fee per customer account. Costs came in above budget for two reasons: First, total enrolled accounts were 5% higher than forecast, increasing the data manager's infrastructure and operational resources required to support the City of Hercules enrollment, and second, MCE requested additional billing and aging-balance reports that were not contemplated in the original budget.

Technical and Scheduling Consultants: $1,246,000 (11.0% below the Approved Budget)
These consultants schedule energy resources into the California Independent System Operator (CAISO) and assist MCE in managing risk more effectively. They also collaborate with staff to create advanced load management strategies and forecast costs related to market and regulatory changes. Costs came in below budget as staff worked with a more cost-effective vendor for forward price curves and congestion analysis.

Service Fees – PG&E: $2,603,000 (4.9% below the Approved Budget)
PG&E service fees consist of a fixed charge per customer account. The fees cover PG&E's costs for processing customer data and coordinating billing for MCE accounts. All community choice aggregators (CCAs) in PG&E's territory must pay this fee. The budget built in a rate increase for PG&E's per-account billing fee that the CPUC has not yet approved. Because the higher rate never took effect, actual costs came in below budget.

Legal and Policy Services: $1,125,000 (26.7% below the Approved Budget)
This line encompasses external legal and policy services that assist MCE in areas such as contract review for energy suppliers, non-energy vendors, regulatory proceedings, employment matters, and other agency functions. Results were below budget for a few reasons:

- Staff relied more on internal expertise for PPA reviews and engaged a more cost-effective vendor, thereby lowering the costs incurred for external counsel services.
- Staff budgeted for outside counsel services related to municipal finance that ultimately did not materialize.
- Staff also budgeted for outside counsel services to support MCE's Energy Efficiency Business Plan Application. Leveraging the last application, growing internal expertise, and creating efficiencies, Staff were able to decrease anticipated external spend.

- Lastly, MCE continues to leverage its membership with the California Community Choice Association (CalCCA) to participate in joint regulatory proceedings, thus reducing the budget for external policy services.

Communication Services: $2,288,000 (2.9% above the Approved Budget before applying contingency)
The majority of the variance reflects a customer noticing software tool that had been budgeted within General & Administrative but was subsequently determined to be a Communication Services cost, given the customer noticing function it serves. Absent the software tool cost classification, this line would be within the Approved Budget.

Other Professional Services: $4,205,000 (11.5% below the Approved Budget)
Other professional services cover external contractors that support MCE across a range of key business functions. This includes external services such as accounting, auditing, benefits administration, grant writing, and information technology (IT). This category also includes costs associated with the development and maintenance of MCE's customer relationship management (CRM) software and data analytics infrastructure. The following drivers led to results coming in below budget:

- Spending on grant writing consultants was lower than planned as changes in federal funding priorities reduced the number of viable grant opportunities. In response, MCE adopted a more targeted approach, supporting municipal-led applications as a sub applicant rather than serving as the primary applicant. This strategy reduced both staff effort and the need for outside consulting assistance.
- Consulting expenses associated with asset ownership and congestion revenue rights optimization initiatives were lower than budgeted, as the anticipated work did not move forward during the year. In addition, consulting costs related to the Remedial Action Scheme project were below budget due to delays in negotiations outside of MCE's control.
- Spending on staff training and coaching services was below budget, as certain nonessential training programs were deferred and demand for employee coaching services was lower than anticipated.

General and Administrative: $4,196,000 (15.5% below the Approved Budget)
This category includes items such as load forecasting tools, software licenses for agency-wide tools, insurance, recruitment for open positions, membership dues for the California Community Choice Association (CalCCA) and other office expenses, including registration and traveling costs. The following drivers led to results coming in below budget:

- Costs tied to one of MCE's storage optimization software were significantly under budget due to a vendor invoicing delay. The vendor did not bill MCE for most of the year; staff are working to secure the outstanding invoices, and a portion of the cost is expected to shift into the current fiscal year.

- Costs tied to marketing tools were lower than budgeted due in part to the reclassification of the customer noticing software noted under Communication Services.
- The cost for Microsoft 365 licenses was deferred for about eight months. Following the onboarding of MCE's new IT Systems Manager, staff determined that a budgeted step-up in Microsoft 365 licensing could be deferred until the Microsoft migration formally began in December 2025, as the higher licensing tier was not required until staff transitioned to Outlook mailboxes.
- Participation in conferences and associated travel was lower than budgeted. Staff attended fewer events than the budget anticipated, reducing registration, airfare, lodging, and related travel expenses for the year.

Occupancy: $250,000 (44.8% below the Approved Budget)
This category includes lease payments for the MCE's Concord office. Maintenance costs for both the Concord and San Rafael office locations are also included. Spending finished below budget because certain maintenance work was needed less than anticipated, several larger projects were pushed to next fiscal year, and the timing of MCE's move provided a few additional months of complimentary rent.

Contingency: $296,000 (80.3% below the Approved Budget)
MCE maintains a budgeted contingency that can be drawn upon to absorb overages in individual operating expense line items. For FYE 2026, approximately $296,000 of the $1.5 million budgeted contingency was applied to cover the spending above budget described for Personnel, Communication Services, and Data Manager.

Grant Income: $4,962,000 (51.4% above the Approved Budget)
Results were above budget primarily due to the amount of funding received from the CPUC for MCE's Disadvantaged Communities Green Tariff (DAC-GT)[6]. Grant receipts are disbursed by the CPUC based on MCE's Annual Budget Advice Letter filing rather than MCE's internal budget figure. The filing applicable to FYE 2026 was overstated, as it double counted a portion of the DAC-GT program, including an embedded energy cost escalator. As a result, the CPUC paid more than the underlying program warranted. The overage represents a timing and reconciliation difference rather than a permanent increase in program funding. The inflated portion is expected to be adjusted through a true-up in future Annual Budget Advice Letter filings.

Other Income: $635,000 (Not budgeted)
Other income reflects damages paid to MCE by counterparties when a project fails to perform in accordance with its contract. MCE does not budget for these payments, as its forecasts assume that

[6] The program provides income-qualified residential customers in disadvantaged communities with 100% renewable energy and a 20% discount on their electricity bills. The associated bill credits reduce MCE's revenue from electricity sales, and the grant income received from the CPUC offsets that reduction.

projects will perform as contracted and the magnitude of any potential damages is difficult to estimate in advance. As a result, amounts recorded in this category represent favorable variances to the budget.

Interest Income: $20,996,000 (40.0% above the Approved Budget)
Interest income reflects what MCE earns on its cash deposits, CDARS, and fixed income investments. Staff continue to invest MCE's reserves according to the agency's investment policy, focusing on safety, liquidity and return on investments. Earnings came in well above plan for three reinforcing reasons. First, lower energy costs left MCE holding more cash than expected, which earned additional interest. Second, although market rates eventually fell, they stayed higher than budgeted, lifting yields on both cash and investments relative to projections. Third, market rates declined over the course of the year, which raised the value of MCE's fixed income holdings. Each increase in the portfolio's value was recorded as an investment gain per accounting guidelines.

Banking Fees and Financing Costs: $270,000 (20.0% above the Approved Budget)
Costs exceeded budget due to a significant increase in MCE's Financial Security Requirement (FSR), a posting that California Community Choice Aggregators (CCAs) are statutorily required to maintain to cover hypothetical customer re-entry costs to the incumbent utility. A combination of lower PG&E generation rates and higher PCIA charges coupled with changes to the FSR calculation methodology further increased the posting amount for CCAs. As a result, MCE's minimum FSR rose substantially from its historical level, increasing the banking fees associated with maintaining the posting. The size and timing of the FSR are determined by PG&E through a confidential formula driven process. Changes are communicated to MCE 60 days before each posting date, placing this increase outside of MCE's control.

Capital Outlay and Interfund Transfers: $8,076,000 (56.1% below the Approved Budget)
Capital outlay totaled approximately $5.7 million, consisting of $5.4 million for the purchase of MCE's office and $282 thousand for related office improvements. MCE also transferred the $2.4 million Board approved amount to the Program Development Fund. The budget variance reflects the Remedial Action Scheme transmission upgrade, which was not undertaken during the year due to negotiation delays outside of MCE's control.

The following sections transition away from the Operating Fund to the Program Development Fund, the Resiliency Virtual Power Plant Fund and the Efficiency Fund budget results. These funds often support long-term project development (EV charger installation, battery storage or large energy-efficiency retrofits) that spans multiple fiscal years. It can be difficult to project the exact expenditure in any given year for those programs as they can vary based on customers' project timelines. Regardless, for externally funded grants, if the total expenditures are under the grant budget and represent eligible grant activities, MCE is reimbursed for those costs.

Program Development Fund

Total Revenue and Other Sources: $2,522,000 (8.4% below the Approved Budget)

As approved by your Board, MCE transferred $2.4 million to the Program Development Fund. The Approved Budget also included contributions of $260,000 from a Marin Community Foundation Grant to support EV Charging at Affordable Multifamily Properties and $100,000 in Community Benefits Funds. The variance is due to lower activity recognized against the Marin Community Foundation Grant due to EV Project timelines being delayed into the subsequent fiscal year. This fund carried a balance of $3.7 million at the start of the fiscal year.

Total Expenditures and Other Uses: $8,032,000 (23.3% above the Approved Budget)
Total expenditures came in above budget for the following reasons:

- Spending under MCE's transportation electrification programs totaled $7.0 million, ending the year 32.3% (approximately $1.7 million) above budget. As the federal EV tax credit approached its expiration at the end of September 2025, customers rushed to purchase electric vehicles before the credit was eliminated. This surge in EV purchases drove a sharp increase in demand for MCE's EV incentives, leading to higher than anticipated incentive payments and a need for additional program funding, which staff brought to your Board. To help address the shortfall, staff requested and received Board approval to increase the contract with Energy Solutions, the vendor that facilitates the incentive payouts, by approximately $600,000. This increase partially covered the $1.7 million overage[7]. Lastly, greater than forecasted EV charging project completions during the fiscal year further added to incentive payments under transportation electrification efforts.
- Spending under MCE's Heat Pump Water Heater Incentives program and Community Housing Grants was above budget due to higher than anticipated demand for the associated incentives. Since both programs supplement MCE's other program offerings, the extra spending allowed those related programs to keep going.
- Overages in the programs described above were partially offset by lower than planned spending under MCE's Emergency Water Heater Loaner.

The elevated spending on MCE's transportation electrification programs resulted in a year end deficit of approximately $1.8 million. The Approved Budget for the current fiscal year includes an $8.1 million transfer that eliminates this deficit in addition to funding the planned spending.

Resiliency Virtual Power Plant (VPP) Fund

Total Revenue and Other Sources: $294,000 (80.0% below the Approved Budget)
The Approved Budget included additional contributions of $200,000 in Federal Grants to support Energy Storage, $72,000 in funding from the Marin Community Foundation to support resiliency at critical facilities and a $1.2 million grant from the California Energy Commission (CEC) to scale MCE's virtual power plant (VPP) program. Work associated with this grant was significantly delayed as the transition away from a pilot version of the program

[7] Although the Board approved roughly $600,000 in additional spending, the Program Development Fund budget was not amended to reflect this.

took longer than expected. The anticipated program adaptations were not immediately possible to implement due to a potential conflict with prevailing wage concerns. Separately, three VPP summer solicitations took longer than expected to approve and launch. Consequently, MCE received less grant income but also incurred less expenses. Costs are expected to be rebalanced once the solicitations are completed and the project team can begin paying for equipment and integration costs. This fund carried a balance of $3.9 million at the start of the fiscal year.

Total Expenditures and Other Uses: $1,520,000 (65.5% below the Approved Budget)
Total expenditures came in below the budget for the following reasons:

- As described above, work for the CEC VPP Flex Grant program was significantly lower than projected leading to less costs incurred.
- MCE's Energy Storage program came in under budget as project activities did not reach scheduled milestones, largely due to delays in PG&E's permission-to-operate (PTO) approval process. As a result, project work and related expenditures shifted to later periods than planned.
- MCE Sync finished under budget as fewer incentives were claimed than forecasted and certain implementation activities, such as Application Programming Interface (API) integration work, were not fully completed as planned. MCE Sync incentives in FYE 2026 included the standard smart charging incentives and a new pilot program, ChargeWise, which offers dynamic rates for EV Charging that are aligned with wholesale electricity prices. Customers who opt into this pilot can take advantage of very low daytime pricing to earn EV charging credits.
- PeakFLEX expenditures were well below the budget as there was lower than expected enrollment in the program. In addition, the mild summer season limited participation days and associated performance payments.
- Federal Earmark for MCE’s energy storage initiatives:
    - Grant funding: No project expenditures were incurred against the federal budget line item in FYE 2026 because activities remained on hold pending U.S. Department of Energy (DOE) authorization. DOE is currently conducting the National Environmental Policy Act review, which was expected to take approximately 1–3 months following submission on April 30, 2026. The DOE has recently informed MCE that due to internal capacity constraints the review process may take until early November 2026.
    - MCE Match Funding: Although the federally earmarked energy storage initiatives were delayed, MCE incurred modest costs for staff time on the grant as part of its cost sharing obligations. Expenditures were nonetheless below budget.
- Marin Community Foundation Resiliency at Critical Facilities: This line item incurred higher than anticipated expenditures during this reporting period due to project milestones, including Permission to Operate approval, being achieved sooner than originally projected.

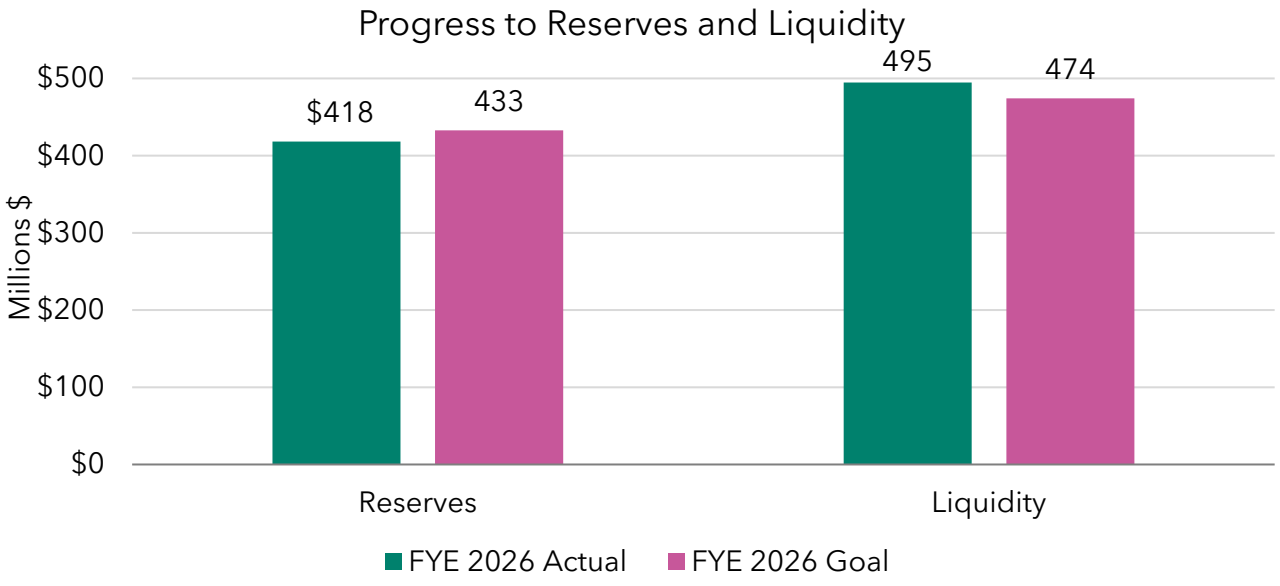
- No costs were incurred for the San Rafael Office Resiliency Buildout project during the fiscal year because the project did not advance as originally anticipated.
- Richmond VPP Pilot: The pilot ended and the team started the transition to MCE's VPP Flex program, resulting in less expenses than projected.

The fund balance at the end of the fiscal year for this fund was about $2.7 million.

Energy Efficiency Fund $11,383,000 (41.8% below the Approved Budget)
The energy efficiency (EE) fund supports the installation of energy efficient measures and retrofits for residential, commercial, industrial, and multifamily properties. The Energy Efficiency Fund programs are fully funded by the CPUC which follows a calendar year reporting cycle. Energy Efficiency Programs are required by the CPUC to budget funds in the year a project is reserved, even though most projects do not start and finish within the same year. The primary driver of the budget to actual variance is timing. Several EE programs show both revenue and expenses below budget, which may reflect differences between when program activity was originally budgeted to occur and when costs are actually incurred, submitted, reimbursed, or recognized. In those cases, lower spending does not necessarily indicate a reduction in planned activity, but rather that costs are expected to occur later than originally budgeted.

The Low-Income Families and Tenants Program is fully funded by the CPUC. While the program overspent its projected FY budget due to projects completing earlier than expected, it did not exceed its total awarded CPUC budget.

Progress toward reserve goals and liquidity



At the close of FYE 2026, MCE's net position increased by $1.4 million[8], bringing the year-end total to $418.3 million. Net position represents the agency's reserves. Under Board-approved Policy 13 (Reserve Policy), MCE aims to maintain reserves equivalent to 60% of energy and operating expenses. Based on the actual expenses incurred, that target equated to about $433 million; MCE's actual reserves of $418.3 million represented about 97% of the goal. The target is a moving figure that shifts with actual energy costs and operating expenses. For example, in the prior fiscal year MCE fell short of the goal at 84%, reflecting a smaller change in net position alongside higher energy and operating costs. Measured by cash and cash equivalents plus investments, the ending liquidity position was $495 million, equivalent to 250 days or 10 days above the Policy goal of 240 days.

Resolution 2026-07

The proposed Resolution provides the opportunity for the Board to close out FYE 2026 and ratify past expenditures and reconcile MCE's expenditures that exceeded specific line items in the budgets, but did not exceed the MCE Budget as a whole. Discussion of overages of line items are listed earlier in this report. Table 6 below provides the specific line item expenditures for the Board to approve through the proposed resolution.

Table 6: Expenditures Exceeding Approved Budget Line items for FYE 2026

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %	Fund
Cost Relief Program (CARES)	5,795,000	5,000,000	795,000	15.9%	Operating
Banking Fees and Financing Costs	270,000	225,000	45,000	20.0%	Operating
San Rafael Office Building Purchase	5,401,000	5,400,000	1,000	0.0%	Operating
MCE Resiliency at Critical Facilities	275,000	72,000	203,000	281.9%	Resiliency VPP
Public Purpose Low Income Families and Tenants Pilot Program	1,323,000	800,000	523,000	65.4%	Energy Efficiency
Transportation Electrification Programs	7,024,000	5,310,000	1,714,000	32.3%	Program Development
Heat Pump Water Heater Incentives	620,000	540,000	80,000	14.8%	Program Development
Community Housing Grants	349,000	260,000	89,000	34.2%	Program Development

On August 27, 2026, the Finance Committee unanimously recommended that the Board approve Resolution 2026-07, Ratifying Certain Line Item Variances Between Actual and Budgeted Amounts in MCE's Fiscal Year End 2026 Budget. This action will formally close FYE 2026.

Fiscal Impact:

None.

[8] As reported in the Statement of Revenues, Expenses, and Changes in Net Position.

Recommendation:
Receive information regarding the Fiscal Year End 2026: Budget Results, Power Supply Variance and Recommend to the Board of Directors for approval, Resolution 2026-07 Ratifying Certain Line Item Variances Between Actual and Budgeted Amounts in MCE's Fiscal Year End 2026 Budget.

Fiscal Year End 2026: Budget Results, Power Supply Variance, and Ratification of Certain Line Item Variances

MCE Executive Committee

September 8, 2026

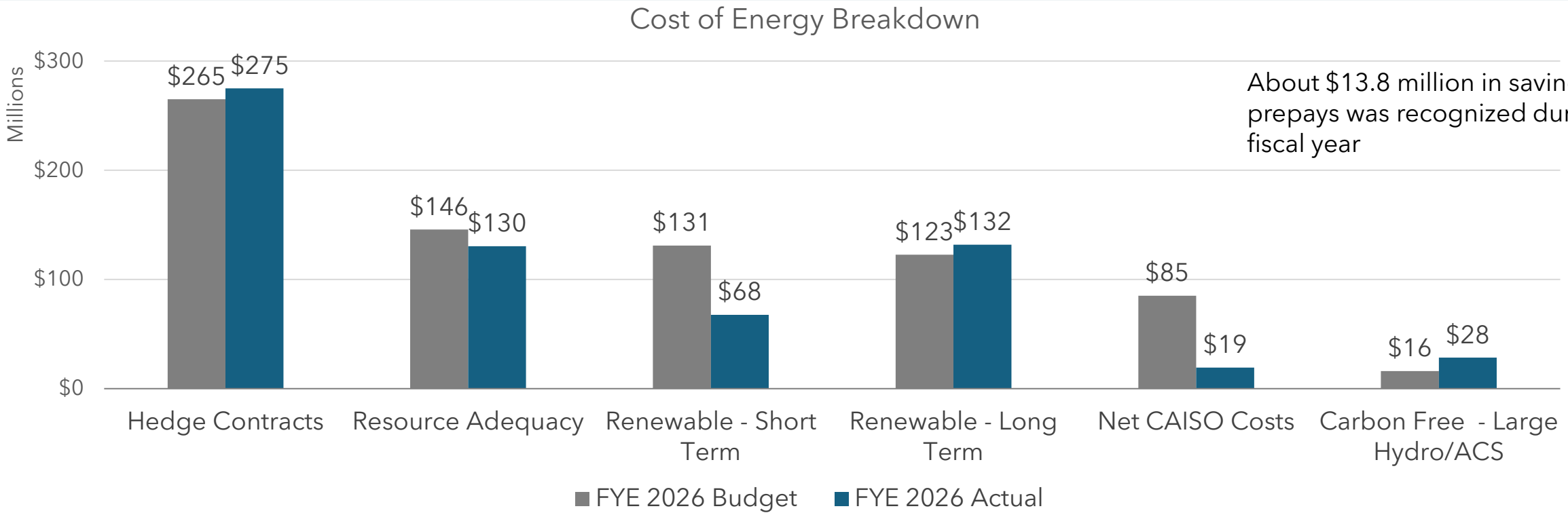
FYE 2026 Budget Review

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %
Energy Revenue, Net (excluding ORF)	$ 764,392,000	$ 813,689,000	$ (49,297,000)	(6.1%)
ORF Withdrawal/Transfer	(80,000,000)	13,000,000	(93,000,000)	NM
Cost of Energy	(652,516,000)	(765,542,000)	113,026,000	14.8%
Operating Expenses	(46,825,000)	(50,249,000)	3,424,000	6.8%
Non-Operating Revenues	26,593,000	18,278,000	8,315,000	45.5%
Non-Operating Expenses	(1,019,000)	(3,503,000)	2,484,000	70.9%
Program Expenses	(20,935,000)	(30,474,000)	9,539,000	31.3%
Program Income	11,807,000	21,393,000	(9,586,000)	(44.8%)
Change in Net Position	**1,497,000**	**16,592,000**	**(15,095,000)**	**(91.0%)**
Capital Outlay	(5,684,000)	(15,999,000)	10,315,000	64.5%
Total Expenses & Capital Outlay	**(726,979,000)**	**(865,767,000)**	**138,788,000**	**16.0%**

Legend: Red variances are unfavorable, green variances are favorable, and NM is not meaningful.

Variance $ is calculated as Actual less Budget. Variance % is calculated as Variance $ divided by the absolute value of Budget. Expenses are presented as negative amounts so the Variance $ column reconciles to Change in Net Position. This methodology applies to this consolidated summary table.

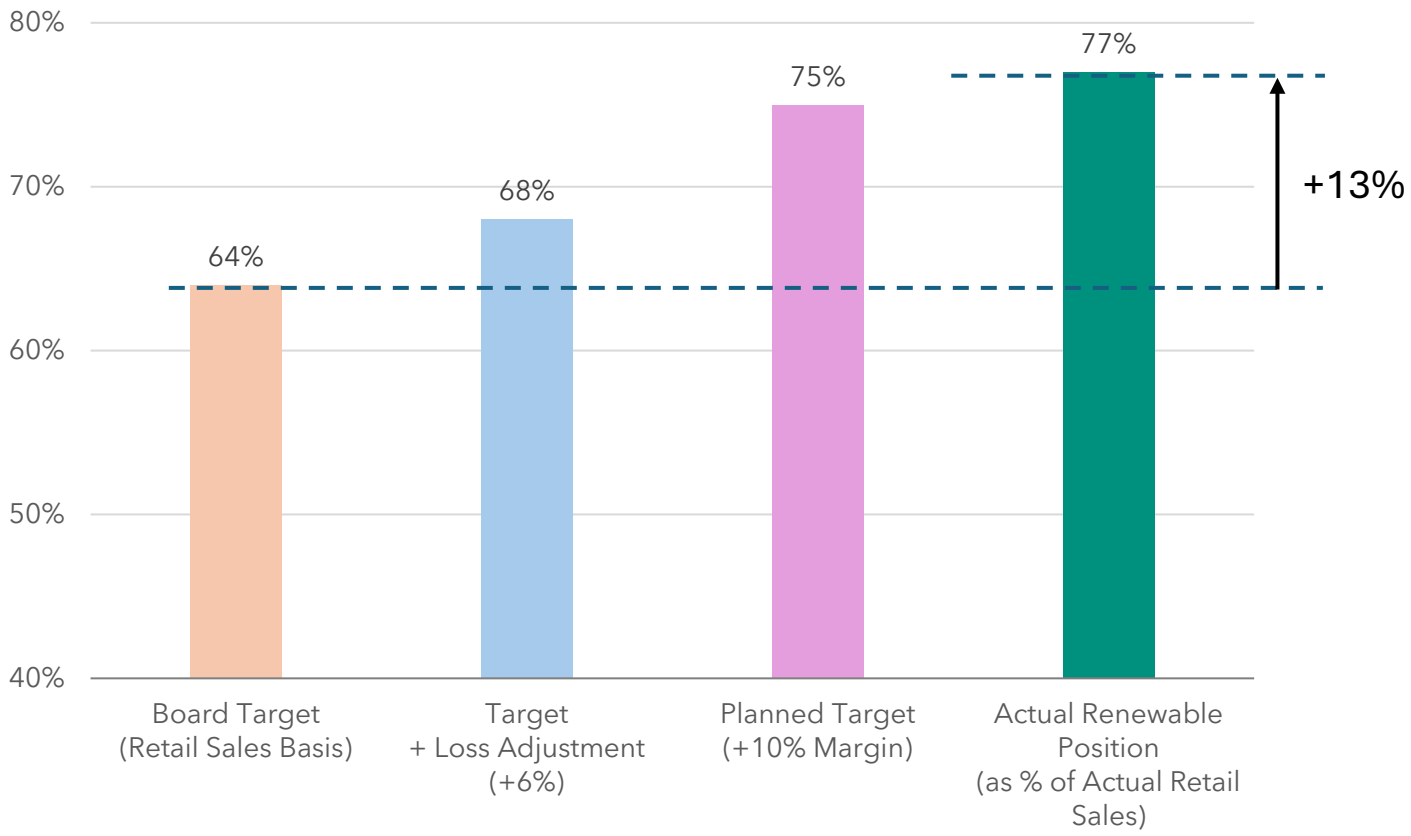
Cost of Energy



About $13.8 million in savings from prepays was recognized during the fiscal year

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %
Hedge Contracts	$ 274,960,000	$ 265,050,000	$ 9,910,000	3.7%
Resource Adequacy	130,444,000	145,713,000	(15,269,000)	(10.5%)
Renewable - Short Term	67,675,000	131,035,000	(63,360,000)	(48.4%)
Renewable - Long Term	131,837,000	122,588,000	9,249,000	7.5%
Net CAISO Costs	19,234,000	85,084,000	(65,850,000)	(77.4%)
Carbon Free - Large Hydro/ACS	28,367,000	16,072,000	12,295,000	76.5%
Total	**652,517,000**	**765,542,000**	**(113,025,000)**	**(14.8%)**

Calendar Year 2025 Renewable Position



Note:

- 64% weighted renewable content, based on 100% Deep Green and 60% Light Green participation
- ~6% loss adjustment reflects CEC portfolio-level reporting (retail sales → grid) and provides additional coverage to the retail-sales-based Board target
- All percentages and dollar amounts are rounded

2025 Key Results:

- Lower load vs. expected → long position
- Some excess sold (Value impacted by market conditions)
- **Perfect-hindsight:** 13% excess I **$73M impact**

FYE 2027 Improvements:

- **Removed** 10% planning margin
- **Enhanced** position monitoring

Future Policy Considerations:

- **Flexible annual targets** → price-responsive procurement strategy
- **Bank excess** for future years
- **Reassess renewable target** levels relative to state requirements

Operating Expenses

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %
Personnel	$ 25,484,000	$ 25,405,000	$ 79,000	0.3%
Data Manager	5,428,000	5,276,000	152,000	2.9%
Technical and Scheduling Consultants	1,246,000	1,400,000	(154,000)	(11.0%)
Service Fees - PG&E	2,603,000	2,738,000	(135,000)	(4.9%)
Legal and Policy Services	1,125,000	1,534,000	(409,000)	(26.7%)
Communication Services	2,288,000	2,223,000	65,000	2.9%
Other Professional Services	4,205,000	4,754,000	(549,000)	(11.5%)
General and Administrative	4,196,000	4,966,000	(770,000)	(15.5%)
Occupancy	250,000	453,000	(203,000)	(44.8%)
Contingency	-	1,500,000	(1,500,000)	(100.0%)
Total	**46,825,000**	**50,249,000**	**(3,424,000)**	**(6.8%)**

Personnel, Data Manager, and Communication Services are shown before Contingency. Applying contingency caps each line at its budgeted amount and shifts the combined overage, about $296,000, to the Contingency line.

MCE Funded Program Budgets

Program	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %	Fund
Transportation Electrification	$ 7,025,000	$ 5,310,000	$ 1,714,000	32.3%	Program Development
MCE Sync	658,000	952,000	(294,000)	(30.9%)	Resiliency VPP
Heat Pump Water Heater Incentives	620,000	540,000	80,000	14.8%	Program Development
Community Housing Grants	349,000	260,000	89,000	34.2%	Program Development
Energy Storage Program	52,000	306,000	(254,000)	(83.0%)	Resiliency VPP
PeakFLEX	17,000	100,000	(83,000)	(83.0%)	Resiliency VPP
Richmond VPP Pilot	12,000	171,000	(159,000)	(93.0%)	Resiliency VPP
Emergency Water Heater Loaner	9,000	142,000	(133,000)	(93.7%)	Program Development
San Rafael Office Resiliency Buildout	-	200,000	(200,000)	(100.0%)	Resiliency VPP
Matching Funds:					
CEC VPP Flex Match	281,000	1,000,000	(719,000)	(71.9%)	Resiliency VPP
Federal Earmark Match Expense	86,000	200,000	(114,000)	(57.0%)	Resiliency VPP
Total	**9,108,000**	**9,181,000**	**(73,000)**	**(0.8%)**	

Recommendation

Recommend to the Board of Directors for approval, Resolution 2026-07 Ratifying Certain Line Item Variances Between Actual and Budgeted Amounts in MCE's Fiscal Year End 2026 Budget.



Thank you!

MCE

mceCleanEnergy.org
info@mceCleanEnergy.org

MCE Operating Fund Without Contingency Applied
Approved Budget Comparison FYE 2026
From April 1, 2025 through March 31, 2026

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %
ENERGY REVENUE				
OPERATING REVENUES	$ 780,138,000	$ 831,237,000	$ (51,099,000)	(6.1%)
Transfer from Operating Reserve Fund	(80,000,000)	13,000,000	-	0.0%
Cost Relief Program	(5,795,000)	(5,000,000)	(795,000)	15.9%
Bi-Directional Vehicle Charging Tariff	-	(80,000)	80,000	(100.0%)
Uncollectible Accounts	(9,951,000)	(12,469,000)	2,518,000	(20.2%)
REVENUE - ELECTRICITY NET	**684,392,000**	**826,689,000**	**(142,297,000)**	**(17.2%)**
ENERGY EXPENSES				
Cost of Energy	652,516,000	765,542,000	(113,026,000)	(14.8%)
NET ENERGY REVENUE	**31,876,000**	**61,147,000**	**(29,271,000)**	**(47.9%)**
OPERATING EXPENSES				
Personnel	25,484,000	25,405,000	79,000	0.3%
Data Manager	5,428,000	5,276,000	152,000	2.9%
Technical and Scheduling Consultants	1,246,000	1,400,000	(154,000)	(11.0%)
Service Fees - PG&E	2,603,000	2,738,000	(135,000)	(4.9%)
Legal and Policy Services	1,125,000	1,534,000	(409,000)	(26.7%)
Communication Services	2,288,000	2,223,000	65,000	2.9%
Other Professional Services	4,205,000	4,754,000	(549,000)	(11.5%)
General and Administrative	4,196,000	4,966,000	(770,000)	(15.5%)
Occupancy	250,000	453,000	(203,000)	(44.8%)
Contingency	-	1,500,000	(1,500,000)	(100.0%)
TOTAL OPERATING EXPENSES	**46,825,000**	**50,249,000**	**(3,424,000)**	**(6.8%)**
OPERATING INCOME	**(14,949,000)**	**10,898,000**	**(25,847,000)**	**(237.2%)**
NONOPERATING REVENUES				
Grant Income	4,962,000	3,278,000	1,684,000	51.4%
Other Income	635,000	-	635,000	-
Interest Income	20,996,000	15,000,000	5,996,000	40.0%
TOTAL NONOPERATING REVENUES	**26,593,000**	**18,278,000**	**8,315,000**	**45.5%**
NONOPERATING EXPENSES	-			
Banking Fees and Financing Costs	270,000	225,000	45,000	20.0%
Grant Expenses	749,000	3,278,000	(2,529,000)	(77.2%)
TOTAL NONOPERATING EXPENSES	**1,019,000**	**3,503,000**	**(2,484,000)**	**(70.9%)**
CHANGE IN NET POSITION	**10,625,000**	**25,673,000**	**(15,048,000)**	**(58.6%)**
Budgeted Net Position Beginning of Period	416,863,000	416,863,000	-	0.0%
Change in Net Position	10,625,000	25,673,000	(15,048,000)	(58.6%)
BUDGETED NET POSITION END OF PERIOD	**427,488,000**	**442,536,000**	**(15,048,000)**	**(3.4%)**
CAPITAL EXPENDITURES, INTERFUND TRANSFERS & OTHER				
Software Transmission Upgrade	-	10,250,000	(10,250,000)	(100.0%)
San Rafael Office Building Purchase	5,401,000	5,400,000	1,000	0.0%
Office Improvements and Retrofits	282,000	349,000	(67,000)	(19.2%)
Transfer to Program Development Fund	2,392,000	2,392,000	-	-
TOTAL CAPITAL EXPENDITURES, INTERFUND TRANSFERS & OTHER	**8,076,000**	**18,391,000**	**(10,315,000)**	**(56.1%)**
BUDGETED NET INCREASE IN OPERATING FUND BALANCE	**2,549,000**	**7,282,000**	**(4,733,000)**	**(65.0%)**

MCE Operating Fund With Contingency Applied
Approved Budget Comparison FYE 2026
From April 1, 2025 through March 31, 2026

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %
ENERGY REVENUE				
OPERATING REVENUES	$ 780,138,000	$ 831,237,000	$ (51,099,000)	(6.1%)
Transfer from Operating Reserve Fund	(80,000,000)	13,000,000	-	0.0%
Cost Relief Program	(5,795,000)	(5,000,000)	(795,000)	15.9%
Bi-Directional Vehicle Charging Tariff	-	(80,000)	80,000	(100.0%)
Uncollectible Accounts	(9,951,000)	(12,469,000)	2,518,000	(20.2%)
REVENUE - ELECTRICITY NET	**684,392,000**	**826,689,000**	**(142,297,000)**	**(17.2%)**
ENERGY EXPENSES				
Cost of Energy	652,516,000	765,542,000	(113,026,000)	(14.8%)
NET ENERGY REVENUE	**31,876,000**	**61,147,000**	**(29,271,000)**	**(47.9%)**
OPERATING EXPENSES				
Personnel	25,405,000	25,405,000	-	0.0%
Data Manager	5,276,000	5,276,000	-	0.0%
Technical and Scheduling Consultants	1,246,000	1,400,000	(154,000)	(11.0%)
Service Fees - PG&E	2,603,000	2,738,000	(135,000)	(4.9%)
Legal and Policy Services	1,125,000	1,534,000	(409,000)	(26.7%)
Communication Services	2,223,000	2,223,000	-	0.0%
Other Professional Services	4,205,000	4,754,000	(549,000)	(11.5%)
General and Administrative	4,196,000	4,966,000	(770,000)	(15.5%)
Occupancy	250,000	453,000	(203,000)	(44.8%)
Contingency	296,000	1,500,000	(1,204,000)	(80.3%)
TOTAL OPERATING EXPENSES	**46,825,000**	**50,249,000**	**(3,424,000)**	**(6.8%)**
OPERATING INCOME	**(14,949,000)**	**10,898,000**	**(25,847,000)**	**(237.2%)**
NONOPERATING REVENUES	-			
Grant Income	4,962,000	3,278,000	1,684,000	51.4%
Other Income	635,000	-	635,000	-
Interest Income	20,996,000	15,000,000	5,996,000	40.0%
TOTAL NONOPERATING REVENUES	**26,593,000**	**18,278,000**	**8,315,000**	**45.5%**
NONOPERATING EXPENSES	-			
Banking Fees and Financing Costs	270,000	225,000	45,000	20.0%
Grant Expenses	749,000	3,278,000	(2,529,000)	(77.2%)
TOTAL NONOPERATING EXPENSES	**1,019,000**	**3,503,000**	**(2,484,000)**	**(70.9%)**
CHANGE IN NET POSITION	**10,625,000**	**25,673,000**	**(15,048,000)**	**(58.6%)**
Budgeted Net Position Beginning of Period	416,863,000	416,863,000	-	0.0%
Change in Net Position	10,625,000	25,673,000	(15,048,000)	(58.6%)
BUDGETED NET POSITION END OF PERIOD	**427,488,000**	**442,536,000**	**(15,048,000)**	**(3.4%)**
CAPITAL EXPENDITURES, INTERFUND TRANSFERS & OTHER				
Software Transmission Upgrade	-	10,250,000	(10,250,000)	(100.0%)
San Rafael Office Building Purchase	5,401,000	5,400,000	1,000	0.0%
Office Improvements and Retrofits	282,000	349,000	(67,000)	(19.2%)
Transfer to Program Development Fund	2,392,000	2,392,000	-	-
TOTAL CAPITAL EXPENDITURES, INTERFUND TRANSFERS & OTHER	**8,076,000**	**18,391,000**	**(10,315,000)**	**(56.1%)**
BUDGETED NET INCREASE IN OPERATING FUND BALANCE	**2,549,000**	**7,282,000**	**(4,733,000)**	**(65.0%)**

MCE
Program Development Fund
Approved Budget Comparison FYE 2026
From April 1, 2025 through March 31, 2026

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %
Revenue And Other Sources				
Transfer from Operating Fund and Deep Green Premium	$ 2,392,000	$ 2,392,000	$ -	0.0%
Marin Community Foundation Grant	30,000	260,000	(230,000)	(88.5%)
Community Benefits Funds	100,000	100,000	-	0.0%
Total Revenue and Other Sources	**2,522,000**	**2,752,000**	**(230,000)**	**(8.4%)**
Expenditures And Committed Funds				
Transportation Electrification Programs	7,024,000	5,310,000	1,714,000	32.3%
Heat Pump Water Heater Incentives	620,000	540,000	80,000	14.8%
Emergency Water Heater Loaner Fund	9,000	142,000	(133,000)	(93.7%)
Marin Community Foundation EV Charging at Affordable Housing	30,000	260,000	(230,000)	(88.5%)
Community Housing Grants	349,000	260,000	89,000	34.2%
Total Expenditures And Other Uses	**8,032,000**	**6,512,000**	**1,520,000**	**23.3%**
Net Increase (Decrease) in Fund Balance	(5,510,000)	(3,760,000)	-	-
Fund Balance at Beginning of Period	3,738,000	3,760,000	-	-
Fund Balance at End of Period	**(1,772,000)**	**-**	-	**-**

MCE
Resiliency Virtual Power Plant Fund
Approved Budget Comparison FYE 2026
From April 1, 2025 through March 31, 2026

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %
Revenue And Other Sources				
CEC VPP Flex Grant	$ 19,000	$ 1,200,000	$ (1,181,000)	(98.4%)
Federal Earmark Funding	-	200,000	(200,000)	(100.0%)
Marin Community Foundation Grant	275,000	72,000	203,000	281.9%
Total Revenue and Other Sources	**294,000**	**1,472,000**	**(1,178,000)**	**(80.0%)**
Expenditures And Other Uses				
CEC VPP Flex Grant Expenses	139,000	1,200,000	(1,061,000)	(88.4%)
Energy Storage Program	52,000	306,000	(254,000)	(83.0%)
CEC VPP Flex Grant Match	281,000	1,000,000	(719,000)	(71.9%)
MCE Sync	658,000	952,000	(294,000)	(30.9%)
PeakFLEX	17,000	100,000	(83,000)	(83.0%)
Federal Earmark- Energy Storage	-	200,000	(200,000)	(100.0%)
MCE Resiliency at Critical Facilities	275,000	72,000	203,000	281.9%
Federal Earmark Match Expense	86,000	200,000	(114,000)	(57.0%)
San Rafael Office Resiliency Buildout	-	200,000	(200,000)	(100.0%)
Richmond VPP Pilot	12,000	171,000	(159,000)	(93.0%)
Total Expenditures And Other Uses	**1,520,000**	**4,401,000**	**(2,881,000)**	**(65.5%)**
Net Increase (Decrease) in Fund Balance	(1,226,000)	(2,929,000)	-	-
Fund Balance at Beginning of Period	3,879,000	3,086,000	-	-
Fund Balance at End of Period	**2,652,000**	**157,000**	**-**	**-**

MCE
Energy Efficiency Fund
Approved Budget Comparison FYE 2026
From April 1, 2025 through March 31, 2026

	FYE 2026 Actua	FYE 2026 Budget	Variance $	Variance %
Revenue And Other Sources				
Public Purpose Energy Efficiency Program	$ 10,060,000	$ 18,761,000	$ (8,701,000)	(46.4%)
Public Purpose Low Income Families and Tenants Pilot Program	1,323,000	800,000	523,000	65.4%
Total Revenue And Other Sources	**11,383,000**	**19,561,000**	**(8,178,000)**	**(41.8%)**
Expenditures And Other Uses			-	
Public Purpose Energy Efficiency Program	10,060,000	18,761,000	(8,701,000)	(46.4%)
Public Purpose Low Income Families and Tenants Pilot Program	1,323,000	800,000	523,000	65.4%
Total Expenditures And Other Uses	**11,383,000**	**19,561,000**	**(8,178,000)**	**(41.8%)**
Balance	-	-	-	-

RESOLUTION 2026-07

A RESOLUTION OF THE BOARD OF DIRECTORS OF MARIN CLEAN ENERGY RATIFYING CERTAIN LINE ITEM VARIANCES BETWEEN ACTUAL AND BUDGETED AMOUNTS IN MCE'S FISCAL YEAR END 2026 BUDGET

WHEREAS, Marin Clean Energy (MCE) is a joint powers authority established on December 19, 2008, and organized under the Joint Exercise of Powers Act (Government Code Section 6500 et seq.); and

WHEREAS, MCE members include the following communities: the County of Marin, the County of Contra Costa, the County of Napa, the County of Solano, the City of American Canyon, the City of Belvedere, the City of Benicia, the City of Calistoga, the City of Concord, the Town of Corte Madera, the Town of Danville, the City of El Cerrito, the Town of Fairfax, the City of Fairfield, the City of Hercules, the City of Lafayette, the City of Larkspur, the City of Martinez, the City of Mill Valley, the Town of Moraga, the City of Napa, the City of Novato, the City of Oakley, the City of Pinole, the City of Pittsburg, the City of Pleasant Hill, the City of San Ramon, the City of Richmond, the Town of Ross, the Town of San Anselmo, the City of San Pablo, the City of San Rafael, the City of Sausalito, the City of St. Helena, the Town of Tiburon, the City of Vallejo, the City of Walnut Creek, and the Town of Yountville; and

WHEREAS, in Fiscal Year End 2026 (FYE 2026), MCE's total actual expenses and capital outlay were $138,788,000 lower than total budgeted amounts, as set forth in the high level summary of the MCE Budget shown below:

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %
Energy Revenue, Net	$ 764,392,000	$ 813,689,000	$ (49,297,000)	(6.1%)
ORF Withdrawal/Transfer	(80,000,000)	13,000,000	(93,000,000)	(715.4%)
Cost of Energy	(652,516,000)	(765,542,000)	113,026,000	14.8%
Operating Expenses	(46,825,000)	(50,249,000)	3,424,000	6.8%
Non-Operating Revenues	26,593,000	18,278,000	8,315,000	45.5%
Non-Operating Expenses	(1,019,000)	(3,503,000)	2,484,000	70.9%
Program Expenses	(20,935,000)	(30,474,000)	9,539,000	31.3%
Program Income	11,807,000	21,393,000	(9,586,000)	(44.8%)
Change in Net Position	**1,497,000**	**16,592,000**	**(15,095,000)**	**(91.0%)**
Capital Outlay	(5,684,000)	(15,999,000)	10,315,000	64.5%
Total Expenses & Capital Outlay	**(726,979,000)**	**(865,767,000)**	**138,788,000**	**16.0%**

WHEREAS, although FYE 2026 total expenditures were well within total budgeted amounts, actual expenses for certain line items exceeded budgeted amounts; and

WHEREAS, in order to formally close FYE 2026, MCE desires to ratify these variances between actual and budgeted amounts in these line items and reconcile MCE's expenditures with the FYE 2026 MCE Budget.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of MCE does hereby resolve, determine, and order as follows:

The Fiscal Year End 2026 expenditures shown below in Table 1 are hereby ratified and authorized by the Board.

Table 1: Expenditures Exceeding Approved Budget Line items for FYE 2026

	FYE 2026 Actual	FYE 2026 Budget	Variance $	Variance %	Fund
Cost Relief Program (CARES)	5,795,000	5,000,000	795,000	15.9%	Operating
Banking Fees and Financing Costs	270,000	225,000	45,000	20.0%	Operating
San Rafael Office Building Purchase	5,401,000	5,400,000	1,000	0.0%	Operating
MCE Resiliency at Critical Facilities	275,000	72,000	203,000	281.9%	Resiliency VPP
Public Purpose Low Income Families and Tenants Pilot Program	1,323,000	800,000	523,000	65.4%	Energy Efficiency
Transportation Electrification Programs	7,024,000	5,310,000	1,714,000	32.3%	Program Development
Heat Pump Water Heater Incentives	620,000	540,000	80,000	14.8%	Program Development
Community Housing Grants	349,000	260,000	89,000	34.2%	Program Development

PASSED AND ADOPTED at a regular meeting of the MCE Board of Directors on this 17th day of September 2026, by the following vote:

	AYES	NOES	ABSTAIN	ABSENT
County of Marin				
County of Contra Costa				
County of Napa				
County of Solano				
City of American Canyon				
City of Belvedere				
City of Benicia				
City of Calistoga				
City of Concord				
Town of Corte Madera				
Town of Danville				
City of El Cerrito				
Town of Fairfax				
City of Fairfield				
City of Hercules				

City of Lafayette				
City of Larkspur				
City of Martinez				
City of Mill Valley				
Town of Moraga				
City of Napa				
City of Novato				
City of Oakley				
City of Pinole				
City of Pittsburg				
City of Pleasant Hill				
City of San Ramon				
City of Richmond				
Town of Ross				
Town of San Anselmo				
City of San Pablo				
City of San Rafael				
City of Sausalito				
City of St. Helena				
Town of Tiburon				
City of Vallejo				
City of Walnut Creek				
Town of Yountville				

_____
CHAIR, MCE

Attest:

_____
SECRETARY, MCE

Empowering Our Clean Energy Future
CONTRA COSTA | MARIN | NAPA | SOLANO

September 8, 2026

TO:	MCE Executive Committee
FROM:	Maíra Strauss, Chief Financial Officer and Treasurer Efren Oxlaj, Manager of Finance
RE:	Financial Audit Fiscal Year Ended 2026 (Agenda Item I.1.)
ATTACHMENTS:	A. Baker Tilly Presentation on 2026 Financial Statement Audit Auditor's Report to Governing Body B. Reporting and Insights from the Fiscal Year 2026 Audit: Marin Clean Energy C. Final Audited Financial Statements Fiscal Year 2026

Dear Executive Committee Members:

Summary:

MCE's fiscal year runs from April 1 through March 31. Following completion of the annual audit process, staff are presenting the final audited financial statements for Fiscal Year Ended (FYE) 2026. At its July 29, 2026, meeting, the Finance Committee reviewed a draft Management's Discussion and Analysis (MD&A) and draft financial statements and provided feedback, which was incorporated into the final MD&A. The financial statements have since been finalized following completion of audit procedures by Baker Tilly and MCE's accounting firm, Maher Accountancy.

Overview:

The audited financial statements include the Statement of Net Position, Statement of Revenues, Expenses and Changes in Net Position, Statement of Cash Flows, and accompanying notes. As reflected in the audited financial statements, MCE ended FYE 2026 with total net position of approximately $418.3 million and an Operating Reserve Fund balance of $150.0 million. Operating revenues totaled approximately $701.4 million, operating expenses totaled $721.3 million, and nonoperating revenues totaled $21.4 million, resulting in an increase in net position of approximately $1.4 million for the fiscal year.

Representatives from Baker Tilly, MCE's independent external auditor, presented the results of the audit, including the auditor's opinion on the financial statements and required auditor communications to the Finance Committee on August 27th, 2026.

Fiscal Impacts:
None.

Recommendation:
Discussion only.

bakertilly

Marin Clean Energy

2026 Financial Statement Audit

Auditor's Report to Governing Body

August 27, 2026

Agenda

01 / Audit Results

02 / Required Communication to Governing Body

03 / Impact of Future Standards

04 / Discussion

bakertilly

Credible audit leadership, proven utility experience

A dedicated Baker Tilly team with relevant experience across community choice aggregation, public power, energy markets, and regional utility organizations.

Relevant client experience

COMMUNITY CHOICE & AUTHORITIES

- Clean Power Alliance of Southern California
- Redwood Coast Energy Authority
- California Community Choice Financing Authority

ENERGY MARKETS & OPERATIONS

- California Independent System Operator
- Electric Reliability Council of Texas
- The Energy Authority
- Balancing Authority of Northern California

PUBLIC POWER & MUNICIPAL UTILITIES

- Sacramento Municipal Utility District
- Modesto Irrigation District
- Imperial Irrigation District
- Seattle City Light
- Gainesville Regional Utilities

REGIONAL, GENERATION & JOINT ACTION ENTITIES

- MSR Public Power Agency
- MSR Energy Authority
- Transmission Agency of Northern California
- Energy Northwest
- Lower Colorado River Authority
- Grand River Dam Authority

Engagement leadership



Aaron Worthman, CPA
Principal
28 years of experience



Ryan Theiler, CPA
Senior Audit Manager
10 years of experience

Our responsibilities

As your independent auditor, our responsibilities include:

- Planning and performing the audit to obtain reasonable assurance about whether the basic financial statements are free from material misstatement. Reasonable assurance is a high level of assurance.
- Assessing the risks of material misstatement of the basic financial statements, whether due to fraud or error. Included in that assessment is a consideration of MCE's internal control over financial reporting.
- Performing appropriate procedures based upon our risk assessment.
- Evaluating the appropriateness of the accounting policies used and the reasonableness of significant accounting estimates made by management.
- Forming and expressing an opinion based on our audit about whether the basic financial statements prepared by management, with the oversight of the Board of Directors:
    - Are free from material misstatement
    - Present fairly, in all material respects, and in accordance with accounting principles generally accepted in the United States of America
- Our audit of the basic financial statements does not relieve management or the Board of Directors of their responsibilities.

Planned scope and timing

- Audit focus
- Based on our understanding of MCE and the environment in which you operate, we focused our audit on the following key areas:
  - Key transaction cycles
  - Areas with significant estimates
- Our areas of audit focus were informed by, among other things, our assessment of materiality. Materiality in the context of our audit was determined based on specific qualitative and quantitative factors combined with our expectations about MCE's current year results.

Key areas of focus and significant findings

- **Other key areas of emphasis**
- We also focused on other areas that did not meet the definition of a significant risk but were determined to require specific awareness and a unique audit response.

Other key areas of emphasis		
Cash and investments	Revenues and receivables	General disbursements
Payroll	Net position calculations	Financial reporting and required disclosures

Audit approach and results

- Audit performed in accordance with *Generally Accepted Auditing Standards*
- Audit objective – reasonable assurance that financial statements are free from material misstatement
- Financial statements of MCE received an *Unmodified Opinion*
- There were no material weaknesses or significant deficiencies in controls

Auditor communication to those charged with governance

Auditor responsibility & independence

Board responsibility

Accounting policies and estimates

Baker Tilly agrees with MCE's accounting policies and disclosures

There was no adjustment to the financial statements

No other audit findings or concerns

Other Recommendations

Future accounting standards update

GASB Statement Number	Description	Potentially Impacts You	Effective Date
103	Financial Reporting Model Improvements	✓	3/31/2027
104	Disclosure of certain capital assets	✓	3/31/2027
105	Subsequent events	✓	3/31/2028

Discussion





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Contributors



Aaron Worthman, CPA

Principal

aaron.worthman@bakertilly.com
+1 512 975 7281



Ryan Theiler, CPA

Senior Manager

ryan.theiler@bakertilly.com
+1 608 240 2571

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Reporting and insights from the fiscal year 2026 audit:

Marin Clean Energy

March 31, 2026

Executive summary

August 20, 2026

To the Board of Directors
Marin Clean Energy
1125 Tamalpais Avenue
San Rafael, CA 94901

We have completed our audit of the financial statements of Marin Clean Energy (MCE) for the year ended March 31, 2026, and have issued our report thereon dated August 20, 2026. This letter presents communications required by our professional standards.

Your audit should provide you with confidence in your financial statements. The audit was performed based on information obtained from meetings with management, data from your systems, knowledge of your operating environment and our risk assessment procedures. We strive to provide you clear, concise communication throughout the audit process and of the final results of our audit.

Additionally, we have included information on key risk areas MCE should be aware of in your strategic planning. We are available to discuss these risks as they relate to your organization's financial stability and future planning.

If you have questions at any point, please connect with us:

- Aaron Worthman, Principal: Aaron.Worthman@bakertilly.com or +1 (512) 975 7281
- Ryan Theiler, Senior Manager: Ryan.Theiler@bakertilly.com or +1 (608) 240 2571

Sincerely,

Baker Tilly US, LLP



Aaron Worthman, CPA
Principal

THIS COMMUNICATION IS INTENDED SOLELY FOR THE INFORMATION AND USE OF THOSE CHARGED WITH GOVERNANCE, AND, IF APPROPRIATE, MANAGEMENT, AND IS NOT INTENDED TO BE AND SHOULD NOT BE USED BY ANYONE OTHER THAN THESE SPECIFIED PARTIES.

BAKER TILLY ADVISORY GROUP, LP AND BAKER TILLY US, LLP, TRADING AS BAKER TILLY, ARE MEMBERS OF THE GLOBAL NETWORK OF BAKER TILLY INTERNATIONAL LTD., THE MEMBERS OF WHICH ARE SEPARATE AND INDEPENDENT LEGAL ENTITIES. BAKER TILLY US, LLP IS A LICENSED CPA FIRM THAT PROVIDES ASSURANCE SERVICES TO ITS CLIENTS. BAKER TILLY ADVISORY GROUP, LP AND ITS SUBSIDIARY ENTITIES PROVIDE TAX AND CONSULTING SERVICES TO THEIR CLIENTS AND ARE NOT LICENSED CPA FIRMS. NONATTEST SERVICES ARE PROVIDED BY BAKER TILLY ADVISORY GROUP, LP.

Responsibilities

Our responsibilities

As your independent auditor, our responsibilities include:

- Planning and performing the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement. Reasonable assurance is a high level of assurance.
- Assessing the risks of material misstatement of the financial statements, whether due to fraud or error. Included in that assessment is a consideration of MCE’s internal control over financial reporting.
- Performing appropriate procedures based upon our risk assessment.
- Evaluating the appropriateness of the accounting policies used and the reasonableness of significant accounting estimates made by management.
- Forming and expressing an opinion based on our audit about whether the financial statements prepared by management, with the oversight of the Board of Directors:
    - Are free from material misstatement
    - Present fairly, in all material respects and in accordance with accounting principles generally accepted in the United States of America
- Our audit does not relieve management or the Board of Directors of their responsibilities.

We are also required to communicate significant matters related to our audit that are relevant to the responsibilities of the Board of Directors, including:

- Internal control matters
- Qualitative aspects of MCE’s accounting practice including policies, accounting estimates and financial statement disclosures
- Significant unusual transactions
- Significant difficulties encountered
- Disagreements with management
- Circumstances that affect the form and content of the auditors' report
- Audit consultations outside the engagement team
- Corrected and uncorrected misstatements
- Other audit findings or issues

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Audit status

Significant changes to the audit plan

There were no significant changes made to either our planned audit strategy or to the significant risks and other areas of emphasis identified during the performance of our risk assessment procedures.

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Audit approach and results

Planned scope and timing

Audit focus

Based on our understanding of MCE and environment in which you operate, we focused our audit on the following key areas:

- Key transaction cycles
- Areas with significant estimates
- Implementation of new accounting standards

Our areas of audit focus were informed by, among other things, our assessment of materiality. Materiality in the context of our audit was determined based on specific qualitative and quantitative factors combined with our expectations about MCE's current year results.

Key areas of focus and significant findings

Significant risks of material misstatement

A significant risk is an identified and assessed risk of material misstatement that, in the auditors' professional judgment, requires special audit consideration. Within our audit, we focused on the following areas below.

Significant risk areas	Testing approach	Conclusion
Management override of controls	Incorporate unpredictability into audit procedures, emphasize professional skepticism and utilize audit team with industry expertise	Procedures identified provided sufficient evidence for our audit opinion
Improper revenue recognition due to fraud	Confirmation or validation of certain revenues supplemented with detailed predictive analytics based on non-financial data and substantive testing of related receivables	Procedures identified provided sufficient evidence for our audit opinion

Other areas of emphasis

We also focused on other areas that did not meet the definition of a significant risk, but were determined to require specific awareness and a unique audit response.

Other areas of emphasis		
Cash and investments	Revenues and receivables	General disbursements
Payroll	Net position calculations	Financial reporting and required disclosures
Power management and related expenses		

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Internal control matters

We considered MCE's internal control over financial reporting as a basis for designing our audit procedures for the purpose of expressing an opinion on the financial statements. We are not expressing an opinion on the effectiveness of MCE's internal control.

Our consideration of internal control was for the limited purpose described in the preceding paragraph and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and, therefore, material weaknesses or significant deficiencies may exist that were not identified.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis.

A material weakness is a deficiency or combination of deficiencies in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis. We did not identify any deficiencies in internal control that we consider to be material weaknesses.

Required communications

Qualitative aspect of accounting practices

- Accounting policies: Management is responsible for the selection and use of appropriate accounting policies. In accordance with the terms of our engagement letter, we have advised management about the appropriateness of accounting policies and their application. The significant accounting policies used by MCE are described in Note 1 to the financial statements. No new accounting policies were adopted and the application of existing accounting policies was not changed during fiscal year 2026. We noted no transactions entered into by MCE during the year for which accounting policies are controversial or for which there is a lack of authoritative guidance or consensus or diversity in practice.

- Accounting estimates: Accounting estimates, including fair value estimates, are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements, the degree of subjectivity involved in their development and because of the possibility that future events affecting them may differ significantly from those expected. The following estimates are of most significance to the financial statements:

Estimate	Management's process to determine	Baker Tilly's conclusions regarding reasonableness
Allowance for doubtful accounts	Evaluation of historical revenues and loss levels with the analysis on collectability of individual amounts	Reasonable in relation to the financial statements as a whole
Unbilled revenue	Evaluation of the T+12 data that is submitted to CAISO	Reasonable in relation to the financial statements as a whole

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There have been no significant changes made by management to either the processes used to develop the particularly sensitive accounting estimates, or to the significant assumptions used to develop the estimates noted above.

- Financial statement disclosures: The disclosures in the financial statements are neutral, consistent and clear.

Significant unusual transactions

There have been no significant transactions that are outside the normal course of business for MCE or that otherwise appear to be unusual due to their timing, size or nature.

Significant difficulties encountered during the audit

We encountered no significant difficulties in dealing with management and completing our audit.

Disagreements with management

Professional standards define a disagreement with management as a matter, whether or not resolved to our satisfaction, concerning a financial accounting, reporting, or auditing matter that could be significant to the financial statements or the auditors' report. We are pleased to report that no such disagreements arose during the course of our audit.

Audit report

There have been no departures from the auditors' standard report.

Audit consultations outside the engagement team

We encountered no difficult or contentious matters for which we consulted outside of the engagement team.

Uncorrected misstatements and corrected misstatements

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are trivial, and communicate them to the appropriate level of management. There were no misstatements identified.

Other audit findings or issues

We encountered no other audit findings or issues that require communication at this time.

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as MCE’s auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Management's consultations with other accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters. Management informed us that, and to our knowledge, there were no consultations with other accountants regarding auditing or accounting matters.

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Written communications between management and Baker Tilly

The attachments include copies of other material written communications, including a copy of the management representation letter.

Compliance with laws and regulations

We did not identify any non-compliance with laws and regulations during our audit.

Fraud

We did not identify any known or suspected fraud during our audit.

Going concern

Pursuant to professional standards, we are required to communicate to you, when applicable, certain matters relating to our evaluation of MCE's ability to continue as a going concern for a reasonable period of time but no less than 12 months from the date of the financial statements, including the effects on the financial statements and the adequacy of the related disclosures, and the effects on the auditors' report. No such matters or conditions have come to our attention during our engagement.

Independence

We are not aware of any relationships between Baker Tilly and MCE that, in our professional judgment, may reasonably be thought to bear on our independence.

Related parties

We did not have any significant findings or issues arise during the audit in connection with MCE's related parties.

Other matter

We applied certain limited procedures to the required supplementary information (RSI) that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

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Audit committee resources

Our business is to know every aspect of yours and to maintain a constant lookout for what's next. We invite you to learn about some of the trending challenges and opportunities for public sector organizations like yours and how Baker Tilly can help.

To explore more trending topics and regulatory updates, visit our resource page at https://www.bakertilly.com/insights/audit-committee-resource-page.



Capital project oversight

Public sector capital projects face increasing pressure from cost escalation, supply chain disruption, regulatory complexity and heightened scrutiny around transparency and accountability. Strong planning, governance and controls are critical across the full project life cycle, from feasibility and funding strategy through execution and closeout.

Independent oversight helps chart a clear course from planning to delivery. Our teams work alongside leadership to strengthen governance, establish financial and contractual controls, align funding with project goals and monitor performance throughout execution, helping projects stay on schedule, within budget and aligned with community priorities.



Succession planning

An aging workforce, rising retirement rates and competition for specialized talent make succession planning a fiscal and operational a priority for public sector organizations.

By identifying critical roles, assessing workforce risk, building internal talent pipelines and integrating succession planning with broader workforce strategies, Baker Tilly helps organizations preserve institutional knowledge and maintain continuity, today and into the future.



Economic development

Successful economic development depends on disciplined planning, sound financial analysis and coordinated execution. Public sector leaders must balance incentives, infrastructure investment, funding opportunities and stakeholder priorities while maintaining fiscal responsibility.

Baker Tilly's supports local governments with strategic and financial planning, incentive structuring and negotiation, tax increment financing administration, project financing, grant strategy, and economic and fiscal impact analysis. This integrated approach helps leaders move from vision to action, strengthening communities and advancing sustainable, long-term growth.

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Management representation letter

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Empowering Our Clean Energy Future
CONTRA COSTA | MARIN | NAPA | SOLANO

August 20, 2026

Baker Tilly US, LLP
4807 Innovation Lane
P.O. Box 7398
Madison WI 53711

Dear Baker Tilly US, LLP:

We are providing this letter in connection with your audits of the financial statements of Marin Clean Energy (MCE) as of March 31, 2026 and 2025 and for the years then ended for the purpose of expressing an opinion as to whether the financial statements present fairly, in all material respects, the financial position of MCE and the respective changes in financial position and cash flows in conformity with accounting principles generally accepted in the United States of America (U.S. GAAP). We confirm that we are responsible for the fair presentation of the previously mentioned financial statements in conformity with U.S. GAAP. We are also responsible for adopting sound accounting policies, establishing and maintaining internal control over financial reporting and preventing and detecting fraud.

Certain representations in this letter are described as being limited to matters that are material. Items are considered material, regardless of size, if they involve an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would be changed or influenced by the omission or misstatement. An omission or misstatement that is monetarily small in amount could be considered material as a result of qualitative factors.

We confirm, to the best of our knowledge and belief, the following representations made to you during your audits.

Financial Statements

1. We have fulfilled our responsibilities, as set out in the terms of the audit engagement letter dated February 14, 2024, including our responsibility for the preparation and fair presentation of the financial statements in accordance with U.S. GAAP.

2. The financial statements referred to above are fairly presented in conformity with U.S. GAAP and include all financial information of MCE required by U.S. GAAP to be included in the financial reporting entity.

3. We acknowledge our responsibility for the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

4. We acknowledge our responsibility for the design, implementation and maintenance of internal control to prevent and detect fraud.

5. Significant assumptions we used in making accounting estimates, including those measured at fair value, if any, are reasonable in accordance with U.S. GAAP.

6. All events subsequent to the date of the financial statements and for which U.S. GAAP require adjustment or disclosure have been adjusted or disclosed. No other events, including instances of noncompliance, have occurred subsequent to the financial statement date and through the date of this letter that would require adjustment to or disclosure in the aforementioned financial statements.

7. All material transactions have been recorded in the accounting records and are reflected in the financial statements.

8. The effects of all known actual or threatened litigation, claims, and assessments have been accounted for and disclosed in accordance with U.S. GAAP.

9. Guarantees, whether written or oral, under which MCE is contingently liable, if any, have been properly recorded or disclosed.

Information Provided

10. We have provided you with:

    a. Access to all information, of which we are aware, that is relevant to the preparation and fair presentation of the financial statements, such as financial records and related data, documentation and other matters.

    b. Additional information that you have requested from us for the purpose of the audit.

    c. Unrestricted access to persons within the entity from whom you determined it necessary to obtain audit evidence.

    d. Minutes of the meetings of the Board of Directors or summaries of actions of recent meetings for which minutes have not yet been prepared.

11. We have disclosed to you results of our assessment of the risk that the financial statements may be materially misstated as a result of fraud.

12. We have no knowledge of any fraud or suspected fraud that affects the entity and involves:

    a. Management,

    b. Employees who have significant roles in internal control, or

    c. Others where the fraud could have a material effect on the financial statements.

13. We have no knowledge of any allegations of fraud or suspected fraud affecting the entity received in communications from employees, former employees, regulators or others.

14. Except as otherwise disclosed by counsel, we have no knowledge of known instances of noncompliance or suspected noncompliance with provisions of laws, regulations, contracts or grant agreements or abuse, whose effects should be considered when preparing financial statements.

15. We have disclosed to you the names of our related parties and all the related party relationships and transactions, including side agreements, of which we are aware.

Other

16. There have been no communications from regulatory agencies concerning noncompliance with or deficiencies in, financial reporting practices.

17. We have not identified any noticed investigations of MCE by a regulatory agency or legal proceedings that have been initiated with respect to the periods under audit.

18. MCE has no plans or intentions that may materially affect the carrying value or classification of assets, deferred outflows of resources, liabilities, deferred inflows of resources or net position.

19. We are responsible for compliance with federal, state and local laws, regulations and provisions of contracts and grant agreements applicable to us, including tax or debt limits, debt contracts and IRS arbitrage regulations; and we have identified and disclosed to you all known federal, state and local laws, regulations and provisions of contracts and grant agreements that we believe have a direct and material effect on the determination of financial statement amounts or other financial data significant to the audit objectives, including legal and contractual provisions for reporting specific activities in separate funds.

20. For the periods under audit, there are no known:

    a. Material violations or possible violations of budget ordinances, federal, state and local laws or regulations (including those pertaining to adopting, approving and amending budgets), provisions of contracts and grant agreements, tax or debt limits and any related debt covenants whose effects should be considered for disclosure in the financial statements or as a basis for recording a loss contingency or for reporting on noncompliance, except those already disclosed in the financial statement, if any.

    b. Other liabilities or gain or loss contingencies that are required to be accrued or disclosed by U.S. GAAP.

    c. Rates being charged to customers other than the rates as authorized by the applicable authoritative body.

21. For the periods under audit, we are not aware of any violations or instances of noncompliance with the provisions of the Ralph M. Brown Act (California Government Code Sections 54950 et seq., including matters related to open meetings, agenda posting requirements, closed sessions, or public notice requirements, that would have a material effect on the financial statements or related disclosures.

22. MCE has satisfactory title to all owned assets and there are no liens or encumbrances on such assets nor has any asset been pledged as collateral.

23. Except as otherwise disclosed by counsel, MCE has complied with all aspects of contractual agreements that would have a material effect on the financial statement in the event of noncompliance.

24. The financial statements include all component units as well as joint ventures with an equity interest and properly disclose all other joint ventures and other related organizations, if any. Component units have been properly presented as either blended or discrete.

25. Components of net position (net investment in capital assets; restricted; and unrestricted) are properly classified and, if applicable, approved.

26. MCE has no derivative financial instruments such as contracts that could be assigned to someone else or net settled, interest rate swaps, collars or caps.

27. Provisions for uncollectible receivables, if any, have been properly identified and recorded.

28. Deposits and investments are properly classified, valued and disclosed (including risk disclosures, collateralization agreements, valuation methods and key inputs, as applicable).

29. Capital assets, including infrastructure and intangible assets, are properly capitalized, reported, and, if applicable, depreciated/amortized. Any known impairments have been recorded and disclosed.

30. The auditing standards define an annual report as "a document or combination of documents, typically prepared on an annual basis by management or those charged with governance in accordance with law, regulation or custom, the purpose of which is to provide owners (or similar stakeholders) with information on the entity's operations and the entity's financial results and financial position as set out in the financial statements." Among other items, an annual report contains, accompanies or incorporates by reference the financial statements and the auditor's report thereon. We do not prepare an annual report.

31. The operations and rate setting process meet the condition for application of accounting for regulated operations as outlined in GASB Statement No. 62. All regulatory items included in the financial statements have been approved and are being accounted for in accordance with specific action taken by the regulatory body and as such the expectation of future recovery or refund is reasonable.

32. We have appropriately disclosed MCE's policy regarding whether to first apply restricted or unrestricted resources when an expense is incurred for purposes for which both restricted and unrestricted net position are available and have determined that net position was properly recognized under the policy.

33. We acknowledge our responsibility for the required supplementary information (RSI). The RSI is measured and presented within prescribed guidelines and the methods of measurement and presentation have not changed from those used in the prior period. We have disclosed to you any significant assumptions and interpretations underlying the measurement and presentation of the RSI.

34. We have previously implemented GASB Statement No. 87, *Leases,* and believe that all required disclosures and accounting considerations have been identified and properly classified in the financial statements in compliance with the Standard.

35. We have identified any leases or other contracts that are required to be reported as leases and are in agreement with the key assumptions used in the measurement of any lease related assets, liabilities or deferred inflows of resources.

36. We have assessed the impact of GASB Statement No. 96, *Subscription-Based Information Technology Arraignments* and determined the impact of the statements to be immaterial.

37. We have implemented GASB Statement No. 101, *Compensated Absences* and believe that all required disclosures and accounting considerations have been identified and properly classified in the financial statements in compliance with the Standard.

38. We have evaluated our ongoing operations and determined there are no concentrations or constraints meeting the requirements for disclosure under GASB Statement No. 102.

39. As a member of California Community Choice Financing Authority (CCCFA), MCE does not have an obligation for CCCFA's outstanding debt.

40. We are responsible for the estimation methods and assumptions used in measuring assets and liabilities reported or disclosed at fair value, including information obtained from brokers, pricing services or third parties. Our valuation methodologies have been consistently applied from period to period. The fair value measurements reported or disclosed represent our best estimate of fair value as the measurement date in accordance with the requirements of GASB Statement No. 72—*Fair Value Measurement*. In addition, our disclosures related to fair value measurements are consistent with the objectives outlined in GASB Statement No. 72. We have evaluated the fair value information provided to us by brokers, pricing services or other parties that has been used in the financial statements and believe this information to be reliable and consistent with the requirements.

Sincerely,

Signed: Maira Strauss
Maira Strauss (Aug 20, 2026 12:24:54 PDT)
Maira Strauss, Chief Financial Officer

Signed:
Vicken Kasarjian (Aug 20, 2026 14:42:23 PDT)
Vicken Kasarjian, Acting Chief Executive Officer, and Chief Operating Officer

Client service team



Aaron Worthman, CPA
Principal

4807 Innovate Lane
Madison, WI 53718
United States

T +1 (512) 975 7281 | Madison
aaron.worthman@bakertilly.com



Ryan Theiler, CPA
Senior Manager

4807 Innovate Lane
Madison, WI 53718
United States

T +1 (608) 240 2571 | Madison
ryan.theiler@bakertilly.com

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Accounting changes relevant to Marin Clean Energy

Future accounting standards update

GASB statement number	Description	Potentially impacts you	Effective date
103	Financial reporting model improvements	✓	3/31/2027
104	Disclosure of certain capital assets	✓	3/31/2027
105	Subsequent events	✓	3/31/2028

Further information on upcoming GASB pronouncements.

Changes to the financial reporting model

GASB Statement 103, *Financial Reporting Model Improvements*, builds on Statement 34 by providing key targeted improvements to the financial reporting model. Its requirements are designed to:

- Enhance the effectiveness of governmental financial reports in providing information essential for decision making and assessing a government's accountability, and
- Address certain application issues.

The targeted improvements contained in Statement 103 establish or modify existing accounting and financial reporting requirements related to:

- Management's discussion and analysis: While the overall requirements do not substantially change management's discussion and analysis, the modifications are meant to improve the analysis included in this section and provide details about the items that should be discussed as currently known facts, decisions, or conditions expected to have a significant financial effect in the subsequent period.

- Unusual or infrequent items (previously known as extraordinary and special items): The new statement simplifies GASB literature by eliminating the separate presentation of extraordinary and special items. Under the requirement of Statement 103, applicable items will either be identified as unusual or infrequent, or both.

- Presentation of the proprietary fund statement of revenues, expenses and changes in fund net position: The changes are designed to improve consistency around the classification of items in these statements by better defining what should be included in operating revenues and expenses and nonoperating revenues and expenses including, for example, the addition of subsidies received or provided as a new category of nonoperating revenues and expenses.

- Major component unit information, and budgetary comparison information: Statement 103 is designed to improve the consistency of the reporting of major component unit information and budgetary comparison information by specifying required placement of that information.

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Revisions to disclosures for certain capital assets

Governments are required to provide information on capital assets in the footnotes to the financial statements as outlined in GASB Statement No. 34. Recent standards have impacted the accounting and reporting for capital assets and as a result GASB issued Statement No. 104, *Disclosure of Certain Capital Assets* to provide enhanced disclosures for certain capital assets, including

(a) Lease assets reported under Statement No. 87, intangible right-to-use assets reported under Statement No. 94 and subscription assets reported under Statement No. 96 should all be disclosed separately, and by major class of underlying asset. In addition, if there are any other intangible assets reported, they should also be disclosed separately.

(b) Capital assets that are held for sale should have the ending balance with separate disclosure for historical cost and related accumulated depreciation as well as any outstanding debt for which the asset is pledged as collateral disclosed by major class of asset. Assets held for sale are defined as those for which the government has decided to pursue the sale, and it is probable that the sale will be finalized within one year of the financial statement date.

While these changes are focused on footnote disclosures, it is important to plan ahead to ensure the required information is available for implementation.

Updated guidance for the financial reporting of subsequent events

GASB Statement No. 105, *Subsequent Events, which supersedes GASB Statement No. 56*, is intended to enhance consistency in the application of requirements for subsequent events.

The Statement defines subsequent events as transactions or other events that occur after year end but before the date the financial statements are available to be issued. The date the financial statements are available to be issued is the date at which (a) the financial statements are complete in a form and format that complies with generally accepted accounting principles (GAAP) and (b) approvals necessary for issuance have been obtained, or typically the opinion date. The definition of subsequent events in this Statement modifies the subsequent events time frame throughout the GASB literature.

The Statement also clarifies:

- The different types of subsequent events (recognized and nonrecognized events)
- When note disclosures are required
- The information that should be included in those note disclosures

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Two-way audit communications

As part of our audit of your financial statements, we are providing communications to you throughout the audit process. Auditing requirements provide for two-way communication and are important in assisting the auditor and you with more information relevant to the audit.

As this past audit is concluded, we use what we have learned to begin the planning process for next year's audit. It is important that you understand the following points about the scope and timing of our next audit:

a. We address the significant risks of material misstatement, whether due to fraud or error, through our detailed audit procedures.

b. We will obtain an understanding of the five components of internal control sufficient to assess the risk of material misstatement of the financial statements whether due to error or fraud, and to design the nature, timing and extent of further audit procedures. We will obtain a sufficient understanding by performing risk assessment procedures to evaluate the design of controls relevant to an audit of financial statements and to determine whether they have been implemented. We will use such knowledge to:

   - Identify types of potential misstatements
   - Consider factors that affect the risks of material misstatement
   - Design tests of controls, when applicable and substantive procedures

c. We will not express an opinion on the effectiveness of internal control over financial reporting or compliance with laws, regulations and provisions of contracts or grant programs.

d. The concept of materiality recognizes that some matters, either individually or in the aggregate, are important for fair presentation of financial statements in conformity with generally accepted accounting principles while other matters are not important. In performing the audit, we are concerned with matters that, either individually or in the aggregate, could be material to the financial statements. Our responsibility is to plan and perform the audit to obtain reasonable assurance that material misstatements, whether caused by errors or fraud, are detected.

Our audit will be performed in accordance with auditing standards generally accepted in the United States of America.

We are very interested in your views regarding certain matters. Those matters are listed here:

a. We typically will communicate with your top level of management unless you tell us otherwise.

b. We understand that the governing board has the responsibility to oversee the strategic direction of your organization, as well as the overall accountability of the entity. Management has the responsibility for achieving the objectives of the entity.

c. We need to know your views about your organization's objectives and strategies, and the related business risks that may result in material misstatements.

d. We anticipate that the MCE will receive an unmodified opinion on its financial statements.

e. Which matters do you consider warrant particular attention during the audit, and are there any areas where you request additional procedures to be undertaken?

f. Have you had any significant communications with regulators or grantor agencies?

g. Are there other matters that you believe are relevant to the audit of the financial statements?

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Also, is there anything that we need to know about the attitudes, awareness and actions of the governing body concerning:

a. The entity's internal control and its importance in the entity, including how those charged with governance oversee the effectiveness of internal control?
b. The detection or the possibility of fraud?

We also need to know if you have taken action in response to developments in financial reporting, laws, accounting standards, governance practices or other related matters, or in response to previous communications with us.

With regard to the timing of our audit, here is some general information. If necessary, we may do preliminary financial audit work during the months of January-March, and sometimes early in April. Our final financial fieldwork is scheduled during the spring to best coincide with your readiness and report deadlines. After fieldwork, we wrap up our financial audit procedures at our office and may issue drafts of our report for your review. Final copies of our report and other communications are issued after approval by your staff. This is typically 6-12 weeks after final fieldwork but may vary depending on a number of factors.

Keep in mind that while this communication may assist us with planning the scope and timing of the audit, it does not change the auditor's sole responsibility to determine the overall audit strategy and the audit plan, including the nature, timing and extent of procedures necessary to obtain sufficient appropriate audit evidence.

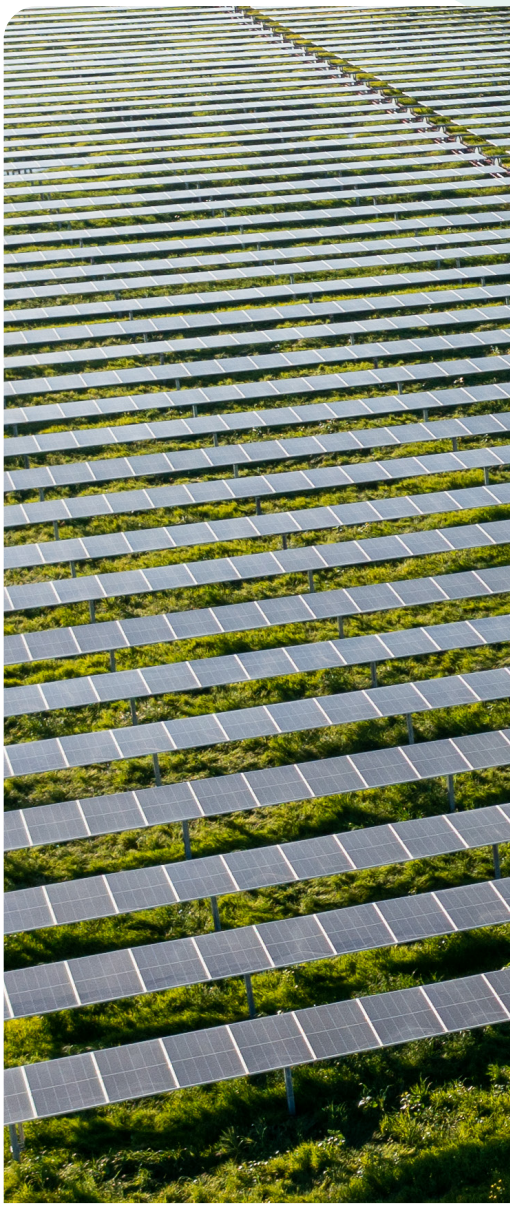
We realize that you may have questions on what this all means or wish to provide other feedback. We welcome the opportunity to hear from you.

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Financial Statements







Years ended March 31, 2026 & 2025
with Report of Independent Auditors

mceCleanEnergy.org

MARIN CLEAN ENERGY
YEARS ENDED MARCH 31, 2026 AND 2025
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Independent Auditors' Report

To the Board of Directors of
Marin Clean Energy

Opinion

We have audited the accompanying financial statements of Marin Clean Energy (MCE), as of and for the years ended March 31, 2026 and 2025, and the related notes to the financial statements, which collectively comprise the MCE's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the financial position of MCE as of March 31, 2026 and 2025, and the changes in financial position and cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the MCE and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America; and for the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the MCE's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

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In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the MCE's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the MCE's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the required supplementary information, as listed in the table of contents, be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Baker Tilly US, LLP

Madison, Wisconsin
August 20, 2026

The purpose of management's discussion and analysis (MD&A) is to help stakeholders and other readers understand what the financial statements and notes in this report say about Marin Clean Energy's (MCE) financial health and why it has changed since last year. It contains information drawn from other parts of the report, accompanied by explanations informed by the finance staff's knowledge of MCE's finances. MCE's fiscal year runs from April 1 through March 31.

If you have questions about this report or require further information, please contact MCE at finance@mceCleanEnergy.org.

Overview of the Financial Statements

MCE's financial report contains basic financial statements:

- The *Statements of Net Position* include all of MCE's assets, liabilities, deferred inflows of resources, and net position and provide information about the nature and amounts of resources and obligations at a specific point in time.

- The *Statements of Revenues, Expenses, and Changes in Net Position* report all of MCE's revenue and expenses for the years shown.

- The *Statements of Cash Flows* report the cash provided and used by operating activities, as well as other sources and uses, such as capital and investing activities.

- The notes to the Basic Financial Statements provide additional details and information related to the basic financial statements.

Financial Summary

MCE's Net Position

	2026	2025	2024
Current assets	$ 479,004,853	$ 512,168,716	$ 426,376,427
Noncurrent assets			
Capital assets, net	6,189,785	555,816	863,432
Other noncurrent assets	174,819,822	166,328,849	164,792,317
Total noncurrent assets	181,009,607	166,884,665	165,655,749
Total assets	660,014,460	679,053,381	592,032,176
Current liabilities	91,705,235	192,190,329	118,346,661
Deferred inflows of resources	150,000,000	70,000,000	70,000,000
Net position:			
Net investment in capital assets	6,189,785	555,816	326,788
Restricted	17,581,784	15,000,000	15,000,000
Unrestricted	394,537,656	401,307,236	388,358,727
Total net position	$ 418,309,225	$ 416,863,052	$ 403,685,515

As of March 31, 2026, MCE's total net position was approximately $418 million, an increase of $1.446 million compared to March 31, 2025. See the discussion in the following section for the changes in the various components.

MCE's Changes in Net Position

	2026	2025	2024
Operating revenues	$ 701,422,195	$ 816,224,799	$ 767,779,391
Nonoperating revenues	21,369,348	25,354,208	15,420,160
Total income	722,791,543	841,579,007	783,199,551
Operating expenses	721,345,370	828,392,314	623,657,258
Nonoperating expenses	-	9,156	28,624
Total expenses	721,345,370	828,401,470	623,685,882
Change in net position	$ 1,446,173	$ 13,177,537	$ 159,513,669

For the year ended March 31, 2026, MCE's change in net position was an increase of approximately $1 million, a decrease of $12 million from the prior year. See the discussion in the following section for the changes in the various components.

Detailed Analysis

MCE continued to maintain a strong financial position during fiscal year 2026 while advancing its long-term objectives of rate stability, customer affordability, and prudent risk management. During the year, MCE increased its Operating Reserve Fund from $70 million to $150 million, remained debt-free, maintained investment-grade credit ratings, and strengthened its liquidity position. Although operating results were affected by the deferral of a portion of current-year revenues into reserves and by changes in energy market conditions, these actions reflect MCE's ongoing commitment to financial resilience and its ability to support customers through future market volatility. The following discussion highlights the key factors affecting MCE's financial performance and financial position during fiscal year 2026.

MCE's Operating Reserve Fund increased from $70,000,000 at the end of fiscal year 2025 to $150,000,000 at the end of fiscal year 2026. The Operating Reserve Fund allows MCE to defer revenues in years of strong financial performance for potential recognition in future periods when financial results may decline. The fiscal year 2026 deferral reduced the increase in net position but provides additional rate stabilization capacity to help MCE manage future energy market volatility and other financial risks.

Operating revenues decreased by $115,000,00 in fiscal year 2026 compared with fiscal year 2025. The decrease was primarily attributable to the $80,000,000 contribution to the Operating Reserve Fund, which is reported as a reduction of operating revenues. Retail electricity sales also declined by $36,000,000, reflecting slightly lower year over year electricity consumption. Mild weather during the summer of 2025 contributed to lower air-conditioning demand and, consequently, lower electricity load. MCE also receives revenue from sources other than retail customer sales, including grant revenue and liquidated damages resulting from electricity suppliers' noncompliance with contract provisions. Grant revenue increased modestly during the year, partially offsetting the decline in retail electricity sales.

Operating expenses decreased by $107,000,000 in fiscal year 2026 compared with fiscal year 2025. The decrease was primarily attributable to a $116,000,000 reduction in the cost of electricity. Several factors contributed to the lower cost of electricity. Renewable energy deliveries under a short-term contract occurred earlier than anticipated, shifting a significant portion of the related costs to fiscal year 2025. The contract allowed the seller discretion over the timing of deliveries within the applicable calendar year, and energy delivered under the contract was priced during a period of elevated renewable energy prices. As a result, fiscal year 2025 included a greater concentration of these higher-cost deliveries than fiscal year 2026.

Detailed Analysis (Continued)

Fiscal year 2026 costs also benefitted from lower electricity demand due to unusually cool weather, which contributed to lower California Independent System Operator (CAISO) market and settlement costs. Costs associated with renewable energy, resource adequacy, and contracts used to manage exposure to market price volatility were also lower than in the prior year. These decreases were partially offset by higher costs for certain carbon-free energy resources. Overall, the year over year decrease reflects the timing and pricing of contracted energy deliveries, lower customer demand, and more favorable energy market conditions during fiscal year 2026.

The table below summarizes the year-over-year change in MCE's main cost of energy categories.

	2026	2025	2024	$ change from 2026 to 2025	% change from 2026 to 2025
Energy contracts	$ 522,072,000	$ 626,255,000	$ 468,797,000	$ (104,183,000)	-17%
Resource adequacy	130,444,000	142,264,000	102,607,000	(11,820,000)	-8%
Total	$ 652,516,000	$ 768,519,000	$ 571,404,000	$ (116,003,000)	-15%

Energy contracts include PCC1 renewable energy agreements, non-renewable energy agreements, carbon free energy agreements, large hydro or asset-controlling supplier deals, and CAISO settlement costs.

Energy costs fluctuate based on retail load, market prices, renewable energy and resource adequacy requirements, contract terms, hydroelectric and renewable generation, CAISO settlements, congestion, and the timing and mix of procurement. The decrease in the cost of electricity was partially offset by increases in contract services, staff compensation, and other operating expenses necessary to support MCE's operations, regulatory requirements, customer programs, and expanded service area.

Current assets decreased from $512,000,000 at the end of fiscal year 2025 to $479,000,000 at the end of fiscal year 2026. The decrease primarily reflects a shift in the maturity composition of MCE's investment portfolio, including a $60,000,000 decrease in investments classified as current, partially offset by a $53,000,000 increase in unrestricted cash and cash equivalents. Current assets at the end of fiscal year 2026 were primarily comprised of cash and investments of $354,000,000, accounts receivable of $68,000,000, and accrued revenue of $29,000,000.

Capital assets are reported net of depreciation and amortization. Each year, the change is mostly due to capital asset acquisitions, less depreciation and amortization expenses. Capital assets include leasehold improvements, furniture and equipment, and real estate related to MCE's office premises. Capital assets, net of accumulated depreciation and amortization, increased from $600,000 at the end of fiscal 2025 to $6,000,000 at the end of fiscal year 2026. The increase primarily resulted from MCE's acquisition of land and an office building during fiscal year 2026.

(Continued)

Currently Known Facts, Decisions, or Conditions (continued)

Other noncurrent assets include investments of $175,000,000 and $166,000,000 at the end of fiscal years 2026 and 2025, respectively. MCE manages its investment portfolio in accordance with its adopted investment policy, with consideration given to safety, liquidity, maturity, diversification, and anticipated cash-flow requirements.

Current liabilities decreased from $192,000,000 at the end of fiscal year 2025 to $92,000,000 at the end of fiscal year 2026. The largest component of current liabilities is the cost of electricity delivered to customers that was not yet paid by MCE at the end of the fiscal year. Accrued cost of electricity was approximately $59,000,000 and $158,000,000 at the end of fiscal years 2026 and 2025, respectively. The fiscal 2025 balance was comparatively high because it included substantial uninvoiced deliveries under a renewable energy contract executed during a period of elevated renewable energy prices. The fiscal 2026 balance included a lower amount of delivered energy for which invoices had not yet been received at year-end. Accordingly, the decrease primarily reflects differences in the amount and cost of delivered, but uninvoiced energy included in the accrual at each fiscal year-end. Accrued cost of electricity may fluctuate from year to year based on the timing and volume of energy deliveries, supplier invoicing and settlement activity, contractual payment terms, and the prices applicable to the products delivered.

Significant Capital Asset and Long-Term Financing Activity

MCE does not own assets used for electric generation or distribution. Included in capital assets are office equipment, such as computers, furniture, leasehold improvements and real estate. In July 2025, MCE purchased an office building and land for $5,400,000.

MCE does not have any outstanding financing debt. MCE has a revolving credit agreement with Royal Bank of Canada with a credit line of $60 million that was effective until May 2026 and subsequently amended as described in Currently Known Facts, Decisions, or Conditions.

MCE signs renewable energy agreements, procures electricity and electrical capacity and signs other power purchase agreements to comply with state law and elevated voluntary targets for renewable and greenhouse gas-free products as described in its Integrated Resource Plan. California law established a Renewable Portfolio Standard (RPS) that requires load-serving entities ("LSEs"), such as MCE, to gradually increase the amount of renewable energy they procure for their customers.

Currently Known Facts, Decisions, or Conditions (continued)

As of March 31, 2026, MCE had executed RPS contracts of ten years or more in duration that are projected to meet MCE's Senate Bill 350 long-term contracting requirements. Additionally, MCE is planning to continue its long-term RPS procurement as opportunities arise. Expected obligations under power purchase agreements totaled approximately $6.0 billion as of March 31, 2026 and $5.9 billion as of March 31, 2025. Actual future costs under these agreements may vary based on the timing and volume of energy deliveries, contract performance, and curtailment. MCE manages these risks by aligning procurement with forecast customer demand, diversifying its portfolio by technology, project location, contract term, delivery profile, and supplier. MCE also maintains counterparty credit, collateral, liquidity, and energy-risk-management practices.

Effective April 1, 2026, MCE implemented a 14% reduction in customer generation rates. MCE also implemented a temporary bill credit of $0.0062 per kilowatt-hour through December 2026 and approved an additional $10.0 million for the MCE Cares Credit program, which provides bill assistance to qualifying residential and small-business customers. These rate actions were adopted in consideration of declining forecasted energy costs, MCE's revenue requirements, rate competitiveness, and increases in the Power Charge Indifference Adjustment, or PCIA, charged by PG&E to MCE customers. The rate reduction, temporary bill credit, and expanded customer assistance are expected to reduce fiscal year 2027 operating revenues compared with the amounts that would have been generated under the prior rates schedule. To partially offset this reduction, MCE's Board approved the recognition of $62.0 million of previously deferred Operating Reserve Fund revenue during fiscal year 2027. Actual operating results may vary based on customer electricity usage, weather, market conditions, and future rate actions.

The PCIA is a state-authorized charge assessed and collected by PG&E from customers receiving generation service from community choice aggregators, including MCE. Changes in the PCIA do not directly affect MCE's reported revenues or expenses; however, they affect customers' total electricity bills and may influence MCE's rate competitiveness, customer participation, and future rate-setting decisions. The 2026 increase in the PCIA was one of the factors considered by MCE when approving the generation-rate reduction, temporary bill credit, and expansion of customer bill assistance. MCE will continue to monitor regulatory proceedings and changes in PG&E charges when evaluating future rates and customer programs.

In May 2026, S&P Global Ratings affirmed MCE's A issuer credit rating with a stable outlook. The rating assessment cited MCE's liquidity, diversified renewable energy portfolio, broad customer base, customer retention, and absence of outstanding debt. Fitch Ratings also maintained MCE's A- issuer default rating following its December 2025 review. MCE's investment-grade ratings support its ability to negotiate energy supply agreements and access financing and liquidity facilities on favorable terms.

(Continued)

Currently Known Facts, Decisions, or Conditions (continued)

In July 2026, following a 45-day extension, MCE finalized an amendment to its revolving credit agreement with Royal Bank of Canada. The amendment extended the facility through May 2027 and increased the available commitment from $60 million to $80 million. As of the date of this report, MCE had no outstanding borrowings or standby letters of credit under the facility. The facility provides an additional source of liquidity for operating and energy procurement requirements.

MCE continues to evaluate a Remedial Action Scheme, or RAS, in coordination with CAISO and PG&E to reduce curtailment affecting a contracted solar project in California's Central Valley. If implemented, the software-based solution may improve project deliverability and reduce curtailment-related energy costs. MCE budgeted approximately $10.2 million of capital outlay for the project in fiscal year 2027. The project's timing, ownership structure, implementation costs, regulatory approvals, and ultimate financial effects remain subject to technical evaluation and negotiations.

BASIC FINANCIAL STATEMENTS

MARIN CLEAN ENERGY

STATEMENTS OF NET POSITION

MARCH 31, 2026 AND 2025

	2026	2025
ASSETS		
Current assets		
Cash and cash equivalents - unrestricted	$ 242,125,512	$ 189,331,563
Cash equivalents - restricted for grant purposes	16,270,080	22,294,426
Cash equivalents - restricted for security reserve	17,581,784	15,000,000
Accounts receivable, net of allowance	67,953,267	63,716,419
Accrued revenue	29,032,067	32,246,942
Other receivables	18,803,237	22,849,094
Prepaid expenses	1,071,840	2,372,584
Investments	78,048,161	138,291,067
Deposits	8,118,905	26,066,621
Total current assets	479,004,853	512,168,716
Noncurrent assets		
Investments	174,622,647	166,170,227
Capital assets, net of depreciation and amortization	6,189,785	555,816
Deposits	197,175	158,622
Total noncurrent assets	181,009,607	166,884,665
Total assets	660,014,460	679,053,381
LIABILITIES		
Current liabilities		
Accrued cost of electricity	58,642,896	158,422,801
Accounts payable	4,433,294	3,980,165
Other accrued liabilities	10,160,357	5,353,759
User taxes and energy surcharges due to other governments	1,341,808	1,282,378
Security deposits - energy suppliers	856,800	856,800
Advances from grantors	16,270,080	22,294,426
Total current liabilities	91,705,235	192,190,329
DEFERRED INFLOWS OF RESOURCES		
Operating Reserve Fund	150,000,000	70,000,000
NET POSITION		
Net position		
Net investment in capital assets	6,189,785	555,816
Restricted	17,581,784	15,000,000
Unrestricted	394,537,656	401,307,236
Total net position	$ 418,309,225	$ 416,863,052

The accompanying notes are an integral part of these financial statements

MARIN CLEAN ENERGY

STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

YEARS ENDED MARCH 31, 2026 AND 2025

	2026	2025
OPERATING REVENUES		
Electricity sales, net	$ 768,857,882	$ 801,542,634
Rate stabilization	(80,000,000)	-
Grant revenue	11,829,585	14,393,254
Other revenue	734,728	288,911
Total operating revenues	701,422,195	816,224,799
OPERATING EXPENSES		
Cost of electricity	652,516,462	768,519,084
Contract services	23,707,524	22,184,759
Staff compensation	28,475,316	24,719,274
Other operating expenses	16,417,632	12,336,595
Depreciation and amortization	228,436	632,602
Total operating expenses	721,345,370	828,392,314
Operating loss	(19,923,175)	(12,167,515)
NONOPERATING REVENUES (EXPENSES)		
Investment income	21,369,348	25,354,208
Finance costs	-	(9,156)
Nonoperating revenues (expenses), net	21,369,348	25,345,052
CHANGE IN NET POSITION	1,446,173	13,177,537
Net position at beginning of year	416,863,052	403,685,515
Net position at end of year	$ 418,309,225	$ 416,863,052

The accompanying notes are an integral part of these financial statements

MARIN CLEAN ENERGY

STATEMENTS OF CASH FLOWS

YEARS ENDED MARCH 31, 2026 AND 2025

	2026	2025
CASH FLOWS FROM OPERATING ACTIVITIES		
Receipts from customers	$ 782,441,917	$ 811,751,482
Receipts from grantors	6,228,908	12,584,238
Receipts of security deposits	18,988,991	4,118,400
Receipts from wholesale sales and other operating activities	23,803,994	61,191
Payments to suppliers for electricity and collateral	(769,518,931)	(705,397,207)
Payments for other goods and services	(39,785,558)	(35,595,730)
Payments for deposits and collateral	(449,563)	(21,226,265)
Payments for staff compensation	(27,094,705)	(22,614,450)
Payments of taxes and surcharges to other governments	(13,249,249)	(12,818,095)
Net cash provided (used) by operating activities	(18,634,196)	30,863,564
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES		
Payments of lease liabilities	-	(545,801)
Payments to acquire capital assets	(5,612,405)	(324,986)
Net cash used by capital and related financing activities	(5,612,405)	(870,787)
CASH FLOWS FROM INVESTING ACTIVITIES		
Investment income received	23,355,477	16,641,296
Proceeds from sales and maturities of investments	115,447,674	47,017,973
Purchase of investments	(65,205,163)	(78,375,562)
Net cash provided (used) by investing activities	73,597,988	(14,716,293)
NET INCREASE IN CASH AND CASH EQUIVALENTS	49,351,387	15,276,484
Cash and cash equivalents at beginning of year	226,625,989	211,349,505
Cash and cash equivalents at end of year	$ 275,977,376	$ 226,625,989
Reconciliation to the Statement of Net Position		
Cash and cash equivalents - unrestricted	$ 242,125,512	$ 189,331,563
Cash equivalents - restricted for grant purposes	16,270,080	22,294,426
Cash equivalents - restricted for security reserve	17,581,784	15,000,000
Cash and cash equivalents	$ 275,977,376	$ 226,625,989
NONCASH INVESTING ACTIVITIES:		
Change in fair value of investments	$ (667,708)	$ 8,712,912
Change in interest receivable	$ (1,318,421)	$ 81,606

The accompanying notes are an integral part of these financial statements

MARIN CLEAN ENERGY

STATEMENTS OF CASH FLOWS

YEARS ENDED MARCH 31, 2026 AND 2025
(Continued)

RECONCILIATION OF OPERATING LOSS TO NET CASH PROVIDED (USED) BY OPERATING ACTIVITIES

	2026	2025
Operating loss	$ (19,923,175)	$ (12,167,515)
Adjustments to reconcile operating income (loss) to net cash provided (used) by operating activities		
Depreciation and amortization expense	228,436	632,602
(Increase) decrease in:		
Accounts receivable, net	(4,236,848)	(2,268,779)
Accrued revenue	3,214,875	(334,474)
Other receivables	2,727,436	(16,944,778)
Prepaid expenses	1,300,744	(1,400,381)
Deposits	18,539,430	(11,033,423)
Increase (decrease) in:		
Accrued cost of electricity	(99,779,905)	90,472,512
Accounts payable	453,129	(572,277)
Other accrued liabilities	4,806,598	2,640,346
User taxes and energy surcharges due to other governments	59,430	(5,994)
Security deposits - energy suppliers	-	(126,600)
Operating Reserve Fund contribution	80,000,000	-
Advances from grantors	(6,024,346)	(18,027,675)
Net cash provided (used) by operating activities	$ (18,634,196)	$ 30,863,564

The accompanying notes are an integral part of these financial statements

MARIN CLEAN ENERGY

NOTES TO THE BASIC FINANCIAL STATEMENTS

YEARS ENDED MARCH 31, 2026 AND 2025

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

REPORTING ENTITY

Marin Clean Energy (MCE) is a California joint powers authority created on December 19, 2008. As of March 31, 2026, the parties to its Joint Powers Agreement consist of the following local governments:

Contra Costa	Marin	Napa	Solano
Concord	Belvedere	American Canyon	Benicia
Danville	Corte Madera	Calistoga	Fairfield
El Cerrito	Fairfax	Napa	Vallejo
Hercules	Larkspur	St. Helena	Unincorporated area
Lafayette	Mill Valley	Yountville	
Martinez	Novato	Unincorporated area	
Moraga	Ross		
Oakley	San Anselmo		
Pinole	San Rafael		
Pittsburg	Sausalito		
Pleasant Hill	Tiburon		
Richmond	Unincorporated area		
San Pablo			
San Ramon			
Walnut Creek			
Unincorporated area			

MCE is separate from and derives no financial support from its members. MCE is governed by a Board of Directors whose membership is composed of elected officials representing one or more of the parties.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

REPORTING ENTITY (Continued)

MCE's mission is to confront the climate crisis by eliminating fossil fuel greenhouse gas emissions, producing renewable energy, and creating an equitable community. MCE provides electricity to retail customers as a Community Choice Aggregation Program (CCA) under the California Public Utilities Code Section 366.2.

Electricity is acquired from commercial suppliers and delivered through existing physical infrastructure and equipment managed by Pacific Gas and Electric Company. MCE administers energy efficiency programs that support the development, coordination, and implementation of energy efficiency projects in and around MCE's service area. The funding for energy efficiency programs is provided by ratepayers and regulated by the California Public Utilities Commission.

BASIS OF ACCOUNTING

MCE's financial statements are prepared in accordance with generally accepted accounting principles (GAAP). The Governmental Accounting Standards Board (GASB) is responsible for establishing GAAP for state and local governments through its pronouncements.

MCE's operations are accounted for as a governmental enterprise fund and are reported using the economic resources measurement focus and the accrual basis of accounting – similar to business enterprises. Accordingly, revenues are recognized when they are earned, and expenses are recognized at the time liabilities are incurred. Enterprise fund-type operating statements present increases (revenues) and decreases (expenses) in total net position. Reported net position is segregated into three categories – net investment in capital assets, restricted, and unrestricted.

When both restricted and unrestricted resources are available for use, it is MCE's policy to use restricted resources first, then unrestricted resources as they are needed.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

CASH AND CASH EQUIVALENTS

For purposes of the Statements of Cash Flows, MCE defines cash and cash equivalents to include cash on hand, demand deposits, and short-term investments with an original maturity of three months or less. The Statement of Net Position presents restricted cash balances separately. Restricted cash reported on the Statements of Net Position includes funding advanced from grantors and reserves required by MCE's line of credit agreement.

INVESTMENTS

Investments are stated at fair value based on prices listed on a national exchange for debt securities except for certificates of deposit which are stated at cost. MCE intends to hold its securities to maturity. Investments with a maturity of less than one year are shown as current assets in the Statement of Net Position. Investments with a maturity of one year or more are shown as noncurrent assets in the Statement of Net Position.

MCE's Investment Policy permits the following types of investments:

Local Agency Investment Fund (LAIF)
United States Treasury obligations
Federal agency securities
Commercial paper
Certificates of deposits
Money market funds
Municipal securities
Corporate bonds
Collateralized mortgage obligations
Supranationals

OTHER RECEIVABLES

At March 31, 2026 and 2025, the balance of other receivables totaled approximately $18,803,000 and $22,849,000, respectively. These amounts primarily consist of receivables related to the resale of excess energy purchased, anticipated refunds from suppliers due to overpayments, and accrued investment income. These receivables are expected to be collected within the next fiscal year and are considered fully collectible.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

PREPAID EXPENSES

Payments made to vendors that will benefit periods beyond the end of the current fiscal year are recorded as prepaid expenses.

DEPOSITS

Contracts to purchase energy may require MCE to provide the supplier with advanced payments or security deposits. Deposits are generally held for the term of the contract and are classified as current or noncurrent assets depending on the length of time the deposits will be outstanding.

LEASE ASSETS AND LEASE LIABILITIES

MCE recognizes an asset and liability when it enters into certain leasing arrangements. The cost of the leased asset is amortized over the term of the leases. The lease liability is the present value of payments expected to be paid to the lessor during the lease term. MCE's leased asset and liability are related to its office lease that expired in March 2025.

CAPITAL ASSETS AND DEPRECIATION

MCE's policy is to capitalize furniture and equipment costing over $5,000 that are expected to be in service for over one year. Depreciation is computed according to the straight-line method over estimated useful lives of three years for electronic equipment, seven years for furniture, ten years for leasehold improvements, and 30 years for buildings. MCE does not own any electric generation, transmission, or distribution assets.

SECURITY DEPOSITS FROM ENERGY SUPPLIERS

Various energy contracts require the supplier to provide MCE with a security deposit. These deposits are generally held for the term of the contract or until the completion of certain benchmarks. Deposits are classified as current or noncurrent, depending on the length of the time the deposits will be held.

ADVANCES FROM GRANTORS

MCE received grant funding from various grantors. The amount in this category represents funds received by MCE but not yet expended to carry out specific goals. See Note 7 for additional information related to grants administered by MCE.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

OPERATING RESERVE FUND

In March 2020, MCE created an Operating Reserve Fund (ORF) to allow MCE to defer revenue in years when financial results are strong for use in future years when financial results may decline. MCE's ORF Policy allows a deferral of revenues into the ORF when the increase in net position is projected to exceed 5% of total revenues in a fiscal year. The ORF Policy has a targeted maximum balance of 10% of the total revenues in the current fiscal year. In accordance with GASB Statement No. 62, the amount deposited into the fund is shown as a reduction in operating revenues and reported on the statements of net position as a deferred inflow of resources. Although the ORF Policy establishes a targeted maximum balance of 10% of current-year revenues, the Board approved a one-time waiver of the policy in fiscal year 2026 to permit a balance beyond this limit. Transfers to this fund were $80,000,000 and $0 in fiscal years 2026 and 2025, respectively.

NET POSITION

Net position is presented in the following components:

Net Investment in capital assets: This component of net position consists of capital assets, net of accumulated depreciation and amortization, and reduced by outstanding borrowings that are attributable to the acquisition, construction, or improvement of those assets.

Restricted: This component of net position consists of restraints placed on net asset use through external constraints imposed by creditors (such as through debt covenants), grantors, contributors, or laws or regulations of other governments or constraints imposed by law through constitutional provisions or enabling legislation.

Unrestricted: This component of net position consists of net position that does not meet the definitions of "net investment in capital assets" or "restricted."

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

OPERATING AND NONOPERATING REVENUE

Operating revenues include energy sales to retail and wholesale customers, grant revenue earned from the delivery of program activities, and liquidated damages from suppliers that fail to meet delivery commitments. Operating revenues also include contributions to and distributions from the Operating Reserve Fund.

Investment income and grants that are not earned from the delivery of program activities are considered "nonoperating revenues."

REVENUE RECOGNITION

MCE recognizes revenue according to the accrual basis. This includes invoices issued to customers during the reporting period and electricity estimated to have been delivered but not yet billed. Management estimates that a portion of the billed amounts will be uncollectible. Accordingly, an allowance for uncollectible accounts has been recorded. Revenue is presented net of estimated uncollectible amounts.

OPERATING AND NONOPERATING EXPENSES

Operating expenses include the costs of electricity, services, administrative expenses, and amortization and depreciation of capital assets. Nonoperating expenses include expenses relating to financing.

COST OF ELECTRICITY

During the normal course of business MCE purchases electrical power from numerous suppliers. Electricity costs include the cost of electricity and generation capacity arising from bilateral contracts with energy suppliers and for generation credits, load and other charges arising from MCE's participation in the California Independent System Operator's (CAISO) centralized market. The cost of electricity and capacity is recognized as "Cost of Electricity" in the Statements of Revenues, Expenses and Changes in Net Position.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

COST OF ELECTRICITY (Continued)

To comply with the State of California's Renewable Portfolio Standards (RPS) and self-imposed benchmarks, MCE acquires RPS eligible renewable energy evidenced by Renewable Energy Certificates (Certificates) recognized by the Western Renewable Energy Generation Information System. MCE obtains Certificates with the intent to retire them and does not sell or build surpluses of Certificates with a profit motive. An expense is recognized at the point that the cost of the Certificate is due and payable to the supplier. MCE purchases capacity commitments from qualifying generators to comply with the California Energy Commission's Resource Adequacy Program.

MCE purchases capacity commitments from qualifying electricity generators to comply with the California Energy Commission's Resource Adequacy Program. The goals of the Resource Adequacy Program are to provide sufficient resources to CAISO to ensure the safe and reliable operation of the electricity grid in real-time and to provide appropriate incentives for the siting and construction of new resources needed for reliability in the future.

STAFFING COSTS

MCE pays employees semi-monthly and fully satisfies its obligation for health benefits and contributions to its defined contribution retirement plan. MCE does not provide post-employment healthcare or other fringe benefits and accordingly, no related liability is recorded in these financial statements.

MCE provides compensated absences, including paid time off, which are accrued when earned and recorded as part of accrued liabilities. The liability includes leave that is attributable to services already rendered, accumulates, and is more likely than not to be used or paid. The liability is measured using the employee's pay rate as of the financial statement date.

INCOME TAXES

MCE is a joint powers authority under the provision of the California Government Code and is not subject to federal or state income or franchise taxes.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

ESTIMATES

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

RECLASSIFICATIONS

Certain amounts reported in the prior year's financial statements have been reclassified for comparative purposes to conform to the presentation of the current year financial statements. These reclassifications did not result in any changes to previously reported net position or change in net position.

2. CASH AND CASH EQUIVALENTS

MCE maintains its cash in both interest-bearing and non-interest-bearing accounts. MCE's deposits are subject to California Government Code Section 16521 which requires banks to provide 110% collateralization on public funds in excess of the Federal Deposit Insurance Corporation (FDIC) limit of $250,000. Certain short-term investments with original maturities of less than three months are classified as cash and cash equivalents, which are not subject to the collateral requirement or FDIC coverage previously mentioned. Accordingly, the amount of risk is not disclosed. MCE monitors its risk on an ongoing basis.

3. ACCOUNTS RECEIVABLE

The balances of accounts receivable were as follows as of March 31:

	2026	2025
Accounts receivable from customers	$ 112,934,268	$ 98,746,419
Allowance for uncollectible accounts	(44,981,001)	(35,030,000)
Net accounts receivable	$ 67,953,267	$ 63,716,419

The majority of accounts receivable are collected within a few months after billing. MCE records and allowance for uncollectible accounts based on historical collection experience, customer aging, and other relevant factors. MCE continues collection efforts on accounts in excess of *de minimis* balances regardless of the age of the account. Although collection success generally decreases with the age of the receivable, MCE continues to be successful in collecting older accounts.

4. INVESTMENTS

During the years ended March 31, 2026 and 2025, MCE held investments with original maturities of three months or more. As of March 31, the fair value of investments, except for certificates of deposit which are stated at cost, was as follows:

	2026	2025	Level
Current Investments:			
U.S. Treasury securities	$ 16,481,262	$ 11,423,887	1
U.S. agency obligations	5,517,068	1,509,316	2
Asset backed securities	-	1,720,609	2
Collateralized mortgage obligations	-	743,359	2
Mutual Funds 457(f) plan	1,046,879	-	2
Certificates of deposit	55,002,952	122,893,896	NA
Total current investments	$ 78,048,161	$ 138,291,067	

	2026	2025	Level
Noncurrent Investments:			
U.S. Treasury securities	$ 59,903,669	$ 52,915,296	1
U.S. agency obligations	6,555,936	13,082,124	2
Asset backed securities	17,685,499	19,432,656	2
Collateralized mortgage obligations	24,256,597	21,333,952	2
Corporate bonds	55,666,130	48,919,999	2
Municipal bonds	1,785,935	1,771,864	2
Supranational	8,768,881	8,714,336	2
Total noncurrent investments	$ 174,622,647	$ 166,170,227	

FAIR VALUE MEASUREMENT

GASB Statement No. 72, *Fair Value Measurement and Application*, sets forth the framework for measuring fair value. That framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. Level 1 inputs are quoted prices in active markets for identical assets, Level 2 inputs are significant other observable inputs, and Level 3 inputs are significant unobservable inputs.

U.S. Treasury securities are classified as Level 1 inputs because they rely on unadjusted, quoted prices in active markets for identical assets.

Other investments, other than certificates of deposits, are classified as Level 2 inputs as they were valued using institutional bond quotes or valuations based on various market inputs.

4. INVESTMENTS (Continued)

FAIR VALUE MEASUREMENT (CONTINUED

Certificates of deposits are based on nominal value which is materially consistent with fair value.

In instances where inputs used to measure fair value fall into more than one level in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. MCE's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability.

CREDIT RISK

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Certain investments, such as obligations of the U.S. government or obligations explicitly guaranteed by the U.S. government are not considered to have credit risk. As of March 31, 2026 and 2025, MCE's investments were rated as follows:

	Standard & Poor's	
	2026	2025
Asset backed securities	NR- to AAA	NR- to AAA
Corporate bonds	BBB+ to AA+	A- to AAA
Municipal bonds	AA-	AA
Supranational	AAA	AAA
Certificates of deposit	NR	NR

MCE's investment policy addresses this risk. MCE's investment policy limits investments to those allowed by Section 53601 of the California Government Code that addresses the risk allowable for each investment.

CUSTODIAL CREDIT RISK

Cash and cash equivalents

Custodial credit risk is the risk that in the event of a financial institution failure, MCE's deposits may not be returned to MCE. MCE's deposits are subject to California Government Code Section 16521, which requires banks to collateralize public funds in excess of the FDIC limit of $250,000 by 110%.

4. INVESTMENTS (Continued)

CUSTODIAL CREDIT RISK (CONTINUED)

As of March 31, 2026 and 2025, none of MCE's bank balances are known to be individually exposed to credit risk.

CUSTODIAL CREDIT RISK – INVESTMENTS

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, MCE would not be able to recover the value of the investment or collateral securities that are in the possession of an outside party. All of MCE's investments are exposed to custodial credit risk.

MCE's investment policy addresses this risk. All investments owned by MCE are to be held in safekeeping by a third-party custodian, acting as an agent for MCE under the terms of a custody agreement.

INTEREST RATE RISK

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Duration is a measure of the price sensitivity of a fixed income portfolio to changes in interest rates. Duration is calculated as the weighted average time to receive a bond's coupon and principal payments. The longer the duration of a portfolio, the greater its price sensitivity to changes in interest rates. MCE manages its exposure to declines in fair values by limiting the weighted average maturity of its investments.

Following is a summary of investment maturities as of March 31, 2026:

		Investment Maturities	
Investment Type	**Fair Value**	**Under 1 Year**	**1-5 Years**
U.S. Treasury securities	$ 76,384,931	$ 16,481,262	$ 59,903,669
U.S. agency obligations	12,073,004	5,517,068	6,555,936
Asset backed securities	17,685,499	-	17,685,499
Collateralized mortgage obligations	24,256,597	-	24,256,597
Corporate bonds	55,666,130	-	55,666,130
Municipal bonds	1,785,935	-	1,785,935
Supranational	8,768,881	-	8,768,881
Mutual Funds 457f deposits	1,046,879	1,046,879	-
Certificates of deposit	55,002,952	55,002,952	-
	$252,670,808	$ 78,048,161	$ 174,622,647

4. INVESTMENTS (Continued)

INTEREST RATE RISK (Continued)

Following is a summary of investment maturities as of March 31, 2025:

		Investment Maturities	
Investment Type	**Fair Value**	**Under 1 Year**	**1-5 Years**
U.S. Treasury securities	$ 64,339,183	$ 11,423,887	$ 52,915,296
U.S. agency obligations	14,591,440	1,509,316	13,082,124
Asset backed securities	21,153,265	1,720,609	19,432,656
Collateralized mortgage obligations	22,077,311	743,359	21,333,952
Corporate bonds	48,919,999	-	48,919,999
Municipal bonds	1,771,864	-	1,771,864
Supranational	8,714,336	-	8,714,336
Certificates of deposit	122,893,896	122,893,896	-
	$304,461,294	$138,291,067	$ 166,170,227

CONCENTRATION OF CREDIT RISK

Concentration of credit risk is the risk of loss to the magnitude of MCE's investment in a single issuer. MCE manages the concentration of credit risk by diversifying its portfolio so that reliance on any one issuer will not place an undue burden on MCE.

As of March 31, 2026 and 2025, MCE's investment portfolio was concentrated as follows:

		Percentage of Portfolio	
Issuer	**Investment Type**	**2026**	**2025**
Federal Home Loan Mortgage Corporation (Freddie Mac)	U.S. agency implicitly guaranteed	9.6%	7.3%

5. CAPITAL ASSETS

Capital asset activity for the year ended March 31, 2026, was as follows:

	Beginning balance	Increases	Decreases	Ending balance
Capital assets not being depreciated:				
Land	$ -	$ 2,025,000	$ -	$ 2,025,000
Capital assets being depreciated and amortized:				
Furniture and equipment	783,928	80,239	(184,982)	679,185
Leasehold improvements	1,089,769	202,221	(1,072,028)	219,962
Software	307,245	180,000	-	487,245
Building	-	3,591,751	-	3,591,751
Total capital assets being depreciated and amortized:	2,180,942	4,054,211	(1,257,010)	4,978,143
Less accumulated depreciation and amortization	(1,625,126)	(228,436)	1,040,204	(813,358)
Total capital assets, net of depreciation and amortization	$ 555,816	$ 5,850,775	$ (216,806)	$ 6,189,785

Capital asset activity for the year ended March 31 2025, was as follows:

	Beginning balance	Increases	Decreases	Ending balance
Capital assets being depreciated and amortized:				
Furniture and equipment	$ 799,573	$ -	$ (15,645)	$ 783,928
Leasehold improvements	1,072,028	17,741	-	1,089,769
Software	-	307,245	-	307,245
Intangible assets-buildings	2,878,560	-	(2,878,560)	-
Total capital assets being depreciated and amortized:	4,750,161	324,986	(2,894,205)	2,180,942
Less accumulated depreciation and amortization	(3,886,729)	(632,602)	2,894,205	(1,625,126)
Total capital assets, net of depreciation and amortization	$ 863,432	$ (307,616)	$ -	$ 555,816

6. DEBT

LINE OF CREDIT AND LETTERS OF CREDIT

MCE has a $60 million revolving credit agreement with Royal Bank of Canada (RBC) that matures in May 2026. The agreement enhances MCE's overall liquidity for potential working capital needs, collateral requirements, and enhances MCE's investment credit rating. The agreement requires MCE to hold $15 million in an operating reserve account. See the subsequent event note for further details.

MCE had no standby Letters of Credit or amounts outstanding under its lines of credit agreement as of March 31, 2026, and 2025. Any unused balance is subject to a 0.33% fee per annum.

7. GRANTS

MCE administers various grants from the California Public Utilities Commission (CPUC), California Energy Commission, and other sources. MCE's primary source of grant funding is through its CPUC-funded Energy Efficiency (EE) programs. MCE administers several programs under this funding source. Grant revenues are recognized when corresponding eligible expenses are incurred.

The following is a summary of grant revenue for the years ended March 31:

	2026	2025
Operating grants:		
EE	$ 11,009,121	$ 10,160,223
Other	820,464	4,233,031
	$ 11,829,585	$ 14,393,254

8. DEFINED CONTRIBUTION RETIREMENT PLAN

The Marin Clean Energy Plan (Plan) is a defined contribution retirement plan established by MCE to provide benefits at retirement to its employees. The Plan is administered by Nationwide Retirement Solutions. On March 31, 2026 and 2025, MCE had 108 and 102 plan participants, respectively. MCE is required to contribute 10% of covered payroll to the Plan and contributed approximately $2,035,000 and $1,679,000 during the years ended March 31, 2026 and 2025, respectively. The Plan includes vesting provisions intended to encourage employee retention. Plan provisions and contribution requirements are established and may be amended by the Board of Directors.

9. NONQUALIFIED DEFERRED COMPENSATION PLAN

Marin Clean Energy sponsors a nonqualified deferred compensation plan under Section 457(f) of the Internal Revenue Code for certain eligible employees. The plan is structured as a retention incentive to qualified personnel still employed and is not subject to the contribution limits applicable to qualified plans.

Under the terms of the plan, eligible employees may receive deferred compensation benefits upon meeting specified vesting conditions. The benefits are subject to a substantial risk of forfeiture until the vesting date, at which point the deferred amounts become taxable to the employee.

As of March 31, 2026 and 2025, the total liability recognized in the statement of net position for the 457(f) plan was $1,157,000 and $498,000, respectively.

10. RISK MANAGEMENT

MCE is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; and errors and omissions. During the year, MCE purchased insurance policies from commercial carriers to mitigate risks that include those associated with earthquakes, theft, general liability, errors and omissions, and property damage. There were no significant reductions in coverage compared to the prior year. There were no settled claims that exceeded coverage in any of the last three years.

From time to time, MCE may be a party to various pending claims and legal proceedings. Although the outcome of such matters cannot be forecasted with certainty, it is the opinion of management and MCE's legal counsel that the likelihood is remote that any such claims or proceedings will have a material adverse effect on MCE's financial position or results of operations.

10. RISK MANAGEMENT (Continued)

MCE maintains risk management policies, procedures and systems that help mitigate credit, liquidity, market, operating, regulatory and other risks that arise from participation in the California energy market. Credit guidelines include a preference for transacting with highly rated counterparties, evaluating counterparties' financial condition and assigning credit limits as applicable. These credit limits are established based on risk and return considerations under terms customarily available in the industry. In addition, MCE enters into netting arrangements whenever possible and where appropriate obtains collateral and other performance assurances from counterparties. Further information about MCE's energy risk management policy can be found online at MCE's website.

11. PURCHASE COMMITMENTS

POWER AND ELECTRIC CAPACITY

In the ordinary course of business, MCE enters into various power purchase agreements to acquire renewable and other energy and electric capacity. The price and volume of purchased power may be fixed or variable. Variable pricing is generally based on the market price of either natural gas or electricity at the date of delivery. Variable volume is generally associated with contracts to purchase energy from as-available resources such as solar, wind and hydro-electric facilities.

MCE enters into power purchase agreements to comply with state law and voluntary targets for renewable and greenhouse gas (GHG) free products and to ensure stable and competitive electric rates for its customers.

The following table details the obligations to purchase existing energy, renewable, and RA contracts as of March 31, 2026:

Year ended March 31,	
2027	$ 520,000,000
2028	460,000,000
2029	380,000,000
2030	370,000,000
2031	370,000,000
2032-51	3,900,000,000
Total	$ 6,000,000,000

12. LEASES

PROPERTY LEASE

On March 9, 2015, MCE entered into a ten-year non-cancelable lease for its San Rafael, California office premise. The rental agreement includes an option to renew the lease for five additional years. On December 12, 2017, MCE entered into a 68-month non-cancelable lease for its Concord, California office location. This lease was amended with a new expiration date of December 31, 2024. The leases have expired and there are no future minimum lease payments as of March 31,2025.

STORAGE CONTRACT ARRANGEMENTS

Related to providing electricity to its customers, MCE entered into energy storage agreements. Through these agreements, MCE obtains the right to control certain aspects of the nature and manner and use of the underlying facilities. The monthly payments made by MCE are variable and based on the performance of the underlying assets including the plant's available capacity, operating charging efficiency, and the seller's responsiveness to MCE's charging and discharge instructions. The variable payments under energy storage agreements are recognized as part of the cost of electricity on the Statement of Revenues, Expenses, and Changes in Net Position. Variable payments for the energy storage agreements totaled approximately $12,986,000 and $4,260,000 in fiscal years 2026 and 2025, respectively.

13. JOINT VENTURE

MCE participates in a joint powers agreement (JPA) through the California Community Choice Financing Authority (CCCFA). CCCFA was formed to assist its members by undertaking the financing or refinancing of energy prepayments through tax-advantaged bonds on behalf of one or more of the members by issuing or incurring bonds and entering into related contracts with its members. Any debt or liability incurred by CCCFA on behalf of a member to prepay for renewable energy is not a debt or liability of that member. Furthermore, the assets of CCCFA in the form of prepaid energy or reserves held by the respective bond trustees for any prepayment transaction undertaken on behalf of a member do not constitute an asset or reserve of that member.

13. JOINT VENTURE (Continued)

CCCFA issued the following bonds, excluding original issue premiums, which are to be used to finance energy purchases that will be delivered to MCE. No debt, liability, obligation of CCCFA is a debt, liability, or obligation of MCE.

Deal	Date issued	Amount Issued	Outstanding as of March 31, 2026	Outstanding as of March 31, 2025
2021A	November 2021	$ 602,655,000	$ 596,830,000	$ 598,715,000
2023G	December 2023	1,038,285,000	1,038,285,000	1,038,285,000
2025B	June 2025	1,062,605,000	1,062,605,000	-
		$ 2,703,545,000	$ 2,697,720,000	$ 1,637,000,000

MCE purchases energy from CCCFA in the same manner as it purchases energy from other suppliers. MCE purchased approximately $99,800,000 and $69,680,000 from CCCFA during the fiscal years ended March 31, 2026 and 2025, respectively. The outstanding commitments to purchase from CCCFA are included in Note 11. This amount represents executed energy contracts assigned to CCCFA as of March 31, 2026. Additional contracts may be assigned while the bond is outstanding.

The financial statements of CCCFA are available online at http://www.cccfa.org/key-documents.html.

14. CONTINGENCY

MCE is involved in pending contract related litigation. The complaint seeks damages of approximately $35 million, including attorney fees. MCE, after consultation with legal counsel, believes it has meritorious and complete defenses to the claims asserted. However, no assurance can be given as to the ultimate outcome of the litigation. Accordingly, no liability has been recorded in the accompanying financial statements.

15. SUBSEQUENT EVENT

In July 2026, MCE extended their revolving credit agreement with Royal Bank of Canada. The credit line is $80 million until May 2027.

16. RECENTLY ADOPTED AND FUTURE ACCOUNTING PRONOUNCEMENTS

MCE implemented GASB Statement No. 102, *Certain Risk Disclosures*, which requires additional disclosures regarding concentrations and constraints that could impact MCE's financial position or results of operations. Implementation of this statement did not have a material effect on the financial statements.

GASB Statements No. 103, *Financial Reporting Model Improvements* and No .104, *Disclosure of Certain Capital Assets* are effective for fiscal years beginning after June 15, 2025. Management is evaluating the effect of implementation of this statement.

GASB Statements No. 105, *Subsequent Events*, is effective for fiscal years beginning after June 15, 2026. Management is evaluating the effect of implementation of this statement.