



MARIN COUNTY | NAPA COUNTY | UNINCORPORATED CONTRA COSTA COUNTY | UNINCORPORATED SOLANO COUNTY
BENICIA | CONCORD | DANVILLE | EL CERRITO | LAFAYETTE | MARTINEZ | MORAGA | OAKLEY | PINOLE
PITTSBURG | RICHMOND | SAN PABLO | SAN RAMON | WALNUT CREEK

Technical Committee Meeting
Thursday, October 1, 2020
8:30 A.M.

The Technical Committee Meeting will be conducted pursuant to the provisions of the Governor's [Executive Order](#) N-29-20 (March 17, 2020) which suspends certain requirements of the Ralph M. Brown Act. Technical Committee Members will be teleconferencing into the Technical Committee Meeting.

Members of the public who wish to observe the meeting may do so telephonically via the following teleconference call-in number and meeting ID:

Dial: 1-669-900-9128
Meeting ID: 823 2854 5953
Meeting Password: 951247

For Viewing Access Join Zoom Meeting:

<https://us02web.zoom.us/j/82328545953?pwd=cnhiMEc0SHNDZ3MzamNOKzJaNUFudz09>

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 9.3.20 Meeting Minutes
 - C.2 First Amendment to the First Agreement by and between MCE and Pioneer Solutions
6. MCE 2021 Operational Integrated Resource Plan (Discussion/Action)
7. Committee Matters & Staff Matters (Discussion)
8. Adjourn

DISABLED ACCOMMODATION: If you have a disability which requires an accommodation, or an alternative format, please contact the Clerk of the Board at (925) 378-6732 as soon as possible to ensure arrangements for accommodation.

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MCE TECHNICAL COMMITTEE MEETING MINUTES
Thursday, September 3, 2020
8:30 A.M.

The Technical Committee Meeting was conducted pursuant to the provisions of the Governor's [Executive Order N-29-20](#) (March 17, 2020) which suspends certain requirements of the Ralph M. Brown Act. Committee Members, staff and members of the public were able to participate in the Committee Meeting via teleconference.

Present: John Gioia, County of Contra Costa
Ford Greene, Town of San Anselmo
David Kunhardt, Town of Corte Madera
Greg Lyman, City of El Cerrito
Scott Perkins, City of San Ramon
Kate Sears, Committee Chair, County of Marin
Justin Wedel, City of Walnut Creek
Ray Withy, City of Sausalito and the City of Mill Valley

Absent: Rob Schroder, City of Martinez

**Staff
& Others:** Jessica Brooks, Assistant Board Clerk
John Dalessi, Pacific Energy Advisors
Kirby Dusel, Pacific Energy Advisors
David Potovsky, Senior Power Procurement Manager
Darlene Jackson, Board Clerk
Vicken Kasarjian, Chief Operating Officer
Evelyn Reyes, Administrative Services Assistant
Enyonam Senyo-Mensah, Administrative Services Associate
Dawn Weisz, Chief Executive Officer

1. Roll Call

Chair Kate Sears called the regular Technical Committee meeting to order at 8:31 a.m. with quorum established by roll call.

2. Board Announcements (Discussion)

There were none.

3. Public Open Time (Discussion)

There were no speakers.

4. Report from Chief Executive Officer (Discussion)

CEO, Dawn Weisz, reported the following:

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- Our newest Board member from the City of Pleasant Hill, Mayor Matt Rinn, will be sworn in during the onboarding process on Monday, September 14th. Council member Michael Harris will serve as Alternate.
- MCE has submitted over 90 applications for SGIP funding as part of our Energy Storage Program, and we have given away over 100 portable batteries to medically vulnerable customers across our service area. These resiliency activities will help folks get through emergency outages and PSPS events, and our Energy Storage program will control our integrated batteries to shift regular load to day-time, away from costly and fossil-heavy evening hours.
- \$51 Million in funding for the CaleVIP program was approved by the California Legislature on Monday. This will help us serve Napa and Solano with EV outreach and installations.
- MCE will be conducting two power supply purchases in the coming weeks;
 - Brookfield Energy Marketing, for Large Hydroelectric energy for 2021-2024
 - Morgan Stanley, for Large Hydroelectric energy for 2021-2024
- MCE's credit rating with Fitch Ratings has been upgraded from BBB to BBB+
- MCE's Virtual Board Retreat is scheduled for Friday, September 18, 2020. The meeting packet will be coming out next week.
- CASIO and CPUC reached out, requesting that all CCAs repeat the outreach efforts of two weeks ago, for this Sunday and Monday, a call for voluntary electricity conservation, beginning Saturday and extending through Monday, from 3:00 p.m. to 9 p.m.

5. Consent Calendar (Discussion/Action)**C.1 Approval of 7.2.20 Meeting Minutes**

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

Action: It was M/S/C (Greene/Lyman) **to approve Consent Calendar**. Motion carried by unanimous vote. (Absent: Director Schroder).

6. Pittsburg Power Company Overview and Update (Discussion)

Director, Shanelle Scales-Preston, presented this item and addressed questions from Committee members.

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

Action: No action was required.

7. 2019 Power Portfolio Statistics Update and Power Source Disclosure Attestation (Discussion/Action)

Kirby Dusel, Pacific Energy Advisors, presented this item and addressed questions from Committee members.

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Chair Sears opened the public comment period and there were comments from member of the public Howdy Goudey.

Action: It was M/S/C (Haroff/Greene) **to endorse the accuracy of information presented in MCE's 2019 PSD reports for Light Green, Deep Green and Local Sol service and approve the use of statistics reflected in MCE's 2019 PSD reports for purposes of preparing MCE's 2019 Power Content Label.** Motion carried by unanimous roll call vote. (Absent: Directors, Gioia and Schroder).

8. CPUC Integrated Resource Plan (Discussion/Action)

John Dalessi, Pacific Energy Advisors, presented this item and addressed questions from Committee members.

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

Action: It was M/S/C (Greene/Withy) **to approve MCE's 2020 CPUC Compliance Integrated Resource Plan.** Motion carried by unanimous roll call vote. (Absent: Directors, Gioia, Lyman, and Schroder).

9. Power Purchase Agreement with Daggett Solar Power 3, LLC (Discussion/Action)

David Potovsky, Senior Power Procurement Manager, presented this item and addressed questions from Committee members.

Chair Sears opened the public comment period and there were comments from member of the public Dan Segedin.

Action: It was M/S/C (Perkins/Kunhardt) **to authorize execution of the Power Purchase Agreement with Daggett Solar Power 3 LLC for renewable energy supply and BESS capacity.** Motion carried by unanimous roll call vote. (Absent: Directors, Gioia, Lyman, and Schroder).

10. Committee & Staff Matters (Discussion)

11. Adjournment

Chair Sears adjourned the meeting at 10:50 a.m. to the next scheduled Technical Committee Meeting on October, 1, 2020.

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Kathrin Sears, Chair

Attest:

Dawn Weisz, Secretary



October 1, 2020

TO: MCE Technical Committee

FROM: Lindsay Saxby, Manager of Power Resources

RE: First Amendment to the First Agreement by and between MCE and Pioneer Solutions (Agenda Item #05 C.2)

ATTACHMENTS: A. First Agreement with Pioneer Solutions

B. Draft First Amendment to the First Agreement with Pioneer Solutions

Dear Technical Committee:

As the number of contracts and the complexity of MCE's portfolio have increased, tracking and administering contracts' critical milestones, energy deliveries, associated invoice validations, and managing MCE's portfolio position for energy and related products has become more complex. In addition, the number of regulatory filings and portfolio data requests and analysis have increased with additional regulatory and reporting requirements. In order to answer questions regarding MCE's portfolio or specific contract information, numerous spreadsheets must be maintained and consulted, resulting in more staff time required to manage the data. MCE's Power Resources team now spends a significant amount of time manually tracking, analyzing and reporting relevant information from multiple spreadsheets for internal team needs, as well as supporting data needs for other MCE teams such as legal, regulatory and marketing to respond to public records act requests, analysis for regulatory filings, marketing material requests, and compliance filings. Therefore, the Power Resources team identified a need for a software platform that would store necessary contract information in a single repository and facilitate efficient and streamlined access to contract data.

In response to this identified need, MCE worked with an outside consultant (Mojo Associates) to identify the appropriate software solution that would allow MCE to capture all of the necessary contract data points and perform the requisite analysis. This resulted in MCE conducting a Request for Offer (RFO) for a cloud-based Commodity Trading and Risk Management (CTRM) platform. MCE received seven responses to the RFO, which were evaluated by MCE staff and ranked according to six evaluation criteria. Four providers were then selected for a shortlist, and each subsequently provided in-depth demonstrations of the software functionality. MCE refined the scope of the software requirements and selected Pioneer Solutions to conduct a pilot to build a proof of

concept CTRM platform under the First Agreement with Pioneer Solutions (shown as Attachment A). MCE and Pioneer successfully completed this pilot in August, 2020.

Through conducting a competitive RFO and completing the pilot with Pioneer Solutions, MCE concluded that moving to a cloud-based software platform would have several benefits across the organization. It would allow staff to run reports that would quickly show contract details and provide business insights essential for informing energy contracting needs. Dashboards and reports would allow workflows to be created that would provide better oversight of our energy contracts and reduce the risk of administrative error. Staff would be able to produce automated reports that capture data required for compliance reporting to the CPUC, State Legislature, CEC and other regulatory bodies, rather than managing manually. These data management improvements would allow the Power Resources staff to scale efficiently and mitigate risk associated with unsecure spreadsheets, hard to find information, inconsistencies, and errors from manual manipulation of multiple large data sets.

The full cloud-based software platform could be provided to MCE as an Amendment to the First Agreement with Pioneer Solutions (shown as Attachment B) with some investment of time and funds. The initial build out of the software is anticipated to take 4-6 months and cost approximately \$153,600. The maximum license fee for year one is \$158,750 and escalates at 3% per year. The total expected year-one expenditure is \$312,350. After year one, there are no additional build out costs. The initial term of the Agreement is two years and will renew on an annual basis thereafter, unless MCE elects to terminate the agreement 60-days prior to the Effective Date following the initial 2-year term. Staff is seeking approval to move forward with full implementation of the Pioneer Solutions CTRM software and the associated annual license fees.

Fiscal Impacts:

Costs arising from the proposed Agreement are included in the FY 2020/21 Operating Fund Budget. Costs arising from the proposed Agreement that would occur beyond FY 2020/21 would be included in subsequent MCE budgets.

Recommendation:

Approve the Draft First Amendment to the First Agreement with Pioneer Solutions and authorize the CEO to approve any order forms related to auto renewals of the software license following the initial 2-year term.

MARIN CLEAN ENERGY
ENERGY EFFICIENCY PROGRAMS STANDARD SHORT FORM CONTRACT

FIRST AGREEMENT
BY AND BETWEEN
MARIN CLEAN ENERGY AND PIONEER SOLUTIONS

THIS FIRST AGREEMENT ("Agreement") is made and entered into this day **June 3, 2020** by and between MARIN CLEAN ENERGY, hereinafter referred to as "Customer" and "MCE" and Pioneer Solutions, hereinafter referred to as "Pioneer Solutions" or "Implementer."

RECITALS:

WHEREAS, MCE desires to retain a person or firm to provide the services described in **Exhibit A**;

WHEREAS, Implementer is a third-party software program implementer that will implement the contract and portfolio management software ("Program");

WHEREAS, Implementer warrants that it is qualified and competent to render the aforesaid Services;

NOW, THEREFORE, for and in consideration of the agreement made, and the payments to be made by MCE, the parties agree to the following:

1. SCOPE OF SERVICES:

Implementer agrees to provide all of the services described in **Exhibit A** attached hereto and by this reference made a part hereof. "Services" shall mean all of the services described in **Exhibit A**, and any other work performed by Implementer pursuant to the Agreement and any related purchase orders.

2. FURNISHED SERVICES:

MCE agrees to make available all pertinent data and records for review, subject to MCE Policy 001 - Confidentiality.

3. 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. Implementer shall provide MCE with his/her/its 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 120 days will not be reimbursable. The final invoice must be submitted within 30 days of completion of the stated scope of services or termination of this Agreement. MCE will process payment for undisputed invoiced amounts within 30 days.

4. MAXIMUM COST TO MCE:

In no event will the cost to MCE for the services to be provided herein exceed the maximum sum of **\$49,000** as defined in each Statement of Work unless agreed upon in a change order.

5. TERM OF AGREEMENT:

This Agreement shall commence on **June 1, 2020**, and shall continue, unless terminated earlier in accordance with the terms of this Agreement, until **December 31, 2020**. Certificate(s) of Insurance must be current on the day the Agreement commences and if scheduled to lapse prior to termination date, must be automatically updated before final payment may be made to Implementer.

6. INSURANCE AND SAFETY:

All required insurance coverages 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 work. Each certificate 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 6.4 which may be provided on a claims-made basis consistent with the criteria noted therein.

Nothing herein shall be construed as a limitation on Implementer's obligations under paragraph 17 of this Agreement to indemnify, defend and hold MCE harmless from any and all liabilities arising from the Implementer's negligence, recklessness or willful misconduct in the performance of this Agreement. MCE agrees to timely notify the Implementer of any negligence claim.

Failure to provide and maintain the insurance required by this Agreement will constitute a material breach of the agreement. In addition to any other available remedies, 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

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 work.

6.4 PROFESSIONAL LIABILITY INSURANCE (REQUIRED IF CHECKED ☐)

Coverages required by this paragraph may be provided on a claims-made basis with a "Retroactive Date" either prior to the date of the Agreement or the beginning of the contract work. If the policy is on a claims-made basis, coverage must extend to a minimum of twelve (12) months beyond completion of contract work. If coverage is cancelled or non-renewed, and not replaced with another claims made policy form with a "retroactive date" prior to the Agreement effective date, the Implementer must purchase "extended reporting" coverage for a minimum of twelve (12) months after completion of contract work. Implementer shall maintain 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.

6.5 PRIVACY AND CYBERSECURITY LIABILITY. 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.

Implementer shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Agreement. Implementer shall monitor the safety of the job site(s) during the project to comply with all applicable federal, state, and local laws, and to follow safe work practices.

7. NONDISCRIMINATORY EMPLOYMENT:

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

8. SUBCONTRACTING:

The 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 herein. If Implementer hires a subcontractor under this Agreement, Implementer shall require subcontractor to provide and maintain insurance coverage(s) identical to what is required of Implementer under this Agreement and shall require subcontractor to name Implementer as additional insured under this Agreement. It shall be Implementer's responsibility to collect and maintain current evidence of insurance provided by its subcontractors and shall 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 shall be solely responsible for ensuring its subcontractors' compliance with the terms and conditions of 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 moneys to any subcontractor.

9. 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. However, the merger, reorganization or sale of all or substantially all of the assets of either Party shall not be deemed an assignment or transfer.

10. RETENTION OF RECORDS AND AUDIT PROVISION:

Implementer and any subcontractors authorized by the terms of this Agreement shall keep and maintain on a current basis full and complete documentation and accounting records, employees' time sheets, and correspondence pertaining to this Agreement. Such records shall include, but not be limited to, documents supporting all income and all expenditures. MCE shall have the right, during regular business hours, to review and audit all records relating to this Agreement during the Contract period and for at least three (3) years from the date of the completion or termination of this Agreement. Any review or audit may be conducted on Implementer's premises or, at MCE's option, Implementer shall provide all records within a maximum of thirty (30) 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.

11. WORK PRODUCT:

All right, title and interest in and to all Pioneer Software licensed to Customer ("Licensed Software") and any accompanying documentation, manuals or other materials supplied under this Agreement, and any reproductions made thereof, remains with Pioneer Solutions and/or its licensors. CUSTOMER shall not remove any product identification or notices of such proprietary rights from the Licensed Software. CUSTOMER has no right, title or interest in the Licensed Software other than those granted pursuant to this Agreement and Pioneer Solutions' license agreement. Except as otherwise stated in a writing executed by both parties to this Agreement, it is expressly understood and agreed by PIONEER SOLUTIONS and CUSTOMER that all materials and work created or developed by PIONEER SOLUTIONS in the course of performing any services under this Agreement ("Work Product"), including but not limited to data, drawings, designs, software code, working papers, reports, and proposals, and excluding any software owned or licensed by CUSTOMER or confidential information of CUSTOMER, shall be owned by PIONEER SOLUTIONS and PIONEER SOLUTIONS shall have all rights, title, and interest therein, including the right to intellectual property protection for such Work Product or any portion thereof, whether patent, copyright, trademark, or trade secret protection. Notwithstanding any assistance provided by CUSTOMER in PIONEER SOLUTIONS' development of Work Product, CUSTOMER shall not be considered or deemed a co-owner of any Work Product.

12. TERMINATION:

- A. 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 ordinance, regulation or other law which applies to its performance herein, MCE may terminate this Agreement by giving fifteen (15) business days' written notice to the party involved.
- B. Implementer shall be excused for failure to perform services herein if such services are prevented by acts of God, strikes, labor disputes or other forces over which Implementer has no control.
- C. 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 20 Invoices; Notices.
- D. 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 cancellation 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 cancellation or termination.
- E. 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. MCE may also terminate this Agreement if funding for this Agreement is reduced or eliminated by a third-party funding source.

- F. Upon MCE's termination of this Agreement for any reason, Implementer shall, and shall cause each 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.

13. AMENDMENT:

This Agreement may be amended or modified only by written agreement of all parties.

14. ASSIGNMENT OF PERSONNEL:

The Implementer shall not substitute any personnel for those specifically named in its proposal unless personnel with substantially equal or better qualifications and experience are provided.

15. GOVERNING LAW AND VENUE:

This Agreement shall be governed by the internal laws of the State of California, with reference to its conflict of laws principles. In the event of any litigation to enforce or interpret any terms of this Agreement, such action shall be brought in a Superior Court of the State of California located in Marin County (or if the federal courts have exclusive jurisdiction over the subject matter of the dispute, in the U.S. District Court for the Northern District of California), and the parties hereby submit to the exclusive jurisdiction of such courts.

16. 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.

17. REPRESENTATIONS; WARRANTIES; INDEMNIFICATION:

17.1 LICENSING. At all times during the performance of the Services, Implementer represents, warrants and covenants that it has and shall, and shall cause each Implementer Party to obtain and maintain, at its sole cost and expense, all required licenses 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.

17.2 Omitted.

17.3 Omitted.

17.4 SAFETY. During the term of this Agreement, Implementer continuously represents, warrants and covenants that it shall, and shall cause each Implementer Party to:

- (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 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; and
- (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.

17.5 Omitted.

17.6 FITNESS FOR DUTY. 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 their work properly and safely. Implementer shall, and shall cause its subcontractors to, have policies in place that require their employees 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.

17.7 INDEMNIFICATION.

17.7.1. Mutual Intellectual Property Indemnification. Each party ("Provider") will defend and indemnify the other party ("Recipient") against a claim that any information, design, specification, instruction, software, work product, data or material furnished by the Provider ("Materials") and used by the Recipient for the Professional Services constitutes a misappropriation of a trade secret or infringement of a United States copyright, provided that: (a) the Recipient promptly notifies the Provider in writing of the claim; (b) the Provider has sole control of the defense and all related settlement negotiations and (c) the Recipient provides the Provider with the assistance, information and authority required for the defense and settlement of the claim.

17.7.2. Exclusions. The Provider shall have no liability for any infringement claim of any kind to the extent it results from: (a) modification of the Materials other than by Provider; (b) the combination, operation or use of the Materials with materials not supplied by Provider to the extent such claim would have been avoided if the Materials were not used in such combination; (c) failure of Recipient to use updated or modified Materials offered by Provider to avoid infringement; or (d) any information, design, specification, instruction, software, work product, data, or material not furnished by Provider. The foregoing indemnity on the part of Pioneer Solutions shall not apply to the Pioneer Software, which indemnity is set forth in the Pioneer Solutions license agreement.

17.7.3. Remedies. In the event that some or all of the Materials is held or is believed by Provider to infringe, the Provider shall have the option in its sole discretion, at its expense to: (a) replace the Materials with compatible, functionally equivalent and non-infringing Materials (b) modify the Materials to be non-infringing; (c) obtain for Recipient a license to continue using the Materials; or if options (a)-(c) above cannot be accomplished despite Provider's reasonable efforts, then (d) require return of the infringing Materials and all rights thereto from the Recipient. If Pioneer Solutions is the Provider and option (d) applies, Pioneer Solutions shall refund the fees paid by Client for that portion of the Materials that infringes or is believed by the Provider to infringe. If Client is the Provider and such return materially affects Pioneer Solutions' ability to meet its obligations under the relevant SOW, then Client agrees that Pioneer Solutions shall not be liable for any such adverse effect and Pioneer Solutions may, at its option and upon thirty (30) days prior written notice to Client, terminate the SOW and Client shall pay Pioneer Solutions for the Professional Services rendered through the date of termination. This section states the parties' entire liability and exclusive remedy for infringement under this Agreement.

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 the Joint Powers Agreement and 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. COMPLIANCE WITH APPLICABLE LAWS:

The Implementer shall comply with any and all applicable federal, state and local laws, regulations and resolutions (including, but not limited to all CPUC policies and guidance for energy efficiency programs, the County of Marin Nuclear Free Zone, Living Wage Ordinance, and Resolution #2005-97 of the Marin County Board of Supervisors prohibiting the off-shoring of professional services involving employee/retiree medical and financial data) affecting services covered by this Agreement.

20. 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: President, Pioneer Solutions

Address: 7400 E. Orchard Rd., Suite 170S

Greenwood Village, CO 80111 USA.

Email Address: ubaral@PioneerSolutionsGlobal.com

Telephone No.: (303) 883-2513

21. 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.

	<input checked="" type="checkbox"/>	<u>Check applicable Exhibits</u>	<u>IMPLEMENTER'S INITIALS</u>
<u>EXHIBIT A.</u>	<input checked="" type="checkbox"/>	Scope of Services	^{DS} UB
<u>EXHIBIT B.</u>	<input checked="" type="checkbox"/>	Fees and Payment	^{DS} UB
<u>EXHIBIT C.</u>	<input checked="" type="checkbox"/>	SaaS Order Form for Setup Fees & Addendum to Terms of Service	^{DS} UB

22. DATA COLLECTION AND OWNERSHIP REQUIREMENTS:

22.1. 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, manual's, 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.

22.2. 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.

22.3. 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 the Confidentiality provisions in this Agreement. 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.

22.4. 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.

22.5. 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 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.

22.6. 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. MCE grants the limited rights and permissions in or relating to MCE Data to Pioneer Solutions and the Pioneer Solutions Personnel that are strictly necessary or useful to perform the Services.

Omitted.

23. ACCESS TO CUSTOMER SITES:

Implementer shall be responsible for obtaining any and all access rights 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, designees and contractors to inspect the Services.

24. MEASUREMENT AND VERIFICATION REQUIREMENTS, INCLUDING GUIDELINES ABOUT NORMALIZED METERED ENERGY CONSUMPTION ("NMEC") DESIGN REQUIREMENTS:

Implementer 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. Implementer shall use modified values upon MCE's request, provided MCE modifies Implementer's Program budget and/or overall Program net lifecycle Energy Savings consistent with the requested change. MCE will determine any budget increases or decreases in its sole discretion.

For Programs claiming to-code savings: Implementer 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.

25. 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.

26. COMPLETE AGREEMENT:

This Agreement along with any attached Exhibits 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.

27. 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.

28. LIMITED WARRANTY/DISCLAIMER:

28.1. PROFESSIONAL SERVICES LIMITED WARRANTY. Pioneer Solutions warrants that any Professional Services provided hereunder shall be performed consistent with generally accepted industry standards. For any breach of this warranty, CUSTOMER's exclusive remedy, and Pioneer Solutions' entire liability, shall be the re-performance of such service or services; provided, however, that CUSTOMER must report any deficiencies in services provided by Pioneer Solutions to Pioneer Solutions in writing within thirty (30) days of Pioneer Solutions' performance of the services in order to receive this warranty remedy.

28.2. WORK PRODUCT LIMITED WARRANTY. Pioneer Solutions warrants to CUSTOMER that, for a period of thirty (30) days from the date of initial installation of Work Product, Work Product shall perform in substantial conformity with any specifications or performance criteria set forth in the SOW (the "Specifications"). Pioneer Solutions does not warrant that the use of the Work Product will be uninterrupted or error-free. CUSTOMER shall have no rights with respect to the foregoing warranties and the warranties shall be deemed not to apply to CUSTOMER unless: (i) the Work Product is used on the computer system or work station(s) designated for the Work Product's installation a) in a proper manner, b) in compliance with this Agreement and with all operating instructions, documentation, specifications, interfaces and requirements, and c) solely for use as required to operate the Work Product as set forth in the documentation; (ii) no modifications or alterations to the Work Product have been made other than by Pioneer Solutions or other than with Pioneer Solutions' prior written consent (provided, however, that no warranties shall extend to CUSTOMER's designs, specifications, or instructions); and (iii) no act or cause beyond the reasonable control of Pioneer Solutions has occurred that was a substantial factor causing the failure of the Work Product to meet the warranty terms. This warranty does not extend to third-party components. In the event of a breach of such limited warranty, CUSTOMER's sole and exclusive remedy shall be that Pioneer Solutions will, at its option, either repair or replace any defective Work Product so that the Work Product performs in accordance with the warranties set forth above. CUSTOMER and Pioneer Solutions agree that in the event that Pioneer Solutions determines that this exclusive remedy is unable to bring the Licensed Work Product into conformity with the warranty, CUSTOMER's exclusive remedy shall be to terminate this Agreement and receive a refund from Pioneer Solutions of the fee for the Work Product previously paid to Pioneer Solutions for the nonconforming portion. **The foregoing warranty shall not apply to the Pioneer Software, which warranty is set forth in the Pioneer Solutions license agreement.**

28.3. DISCLAIMER. APART FROM THE FOREGOING LIMITED WARRANTIES AND INTELLECTUAL PROPERTY INDEMNITY (UNDER SECTION 17.77), THE PROFESSIONAL SERVICES, WORK PRODUCT AND ANY OTHER MATTERS OR MATERIALS RELATED TO THE PROFESSIONAL SERVICES ARE PROVIDED ON AN "AS IS" BASIS. ALL OTHER WARRANTIES AND CONDITIONS, WHETHER EXPRESS, IMPLIED OR COLLATERAL, ARE DISCLAIMED BY PIONEER SOLUTIONS, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, COMPATIBILITY OR NON-INFRINGEMENT OF THIRD-PARTY RIGHTS. Some jurisdictions, states or provinces may not allow limitations on implied warranties, so CUSTOMER may have additional remedies under law. If any warranty is implied (notwithstanding the foregoing provisions), such implied warranty shall be limited to the term of the above express warranty or the applicable term under law.

29. LIMITATION OF LIABILITY:

IN NO EVENT SHALL EITHER PARTY'S TOTAL LIABILITY TO THE OTHER UNDER THIS AGREEMENT EXCEED THE FEES PAID BY THE CUSTOMER FOR SERVICES FOR ISSUES RELATED TO SERVICES OR THE FEES PAID BY THE CUSTOMER FOR WORK PRODUCT FOR ISSUES RELATED TO WORK PRODUCT. THIS LIMITATION APPLIES TO ALL CAUSES OF ACTION IN THE AGGREGATE, INCLUDING, WITHOUT LIMITATION, BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, MISREPRESENTATION AND OTHER TORTS.

30. CONSEQUENTIAL DAMAGES WAIVER:

IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER OR ANY THIRD PARTY FOR ANY INCIDENTAL, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES SUFFERED BY THE OTHER OR SUCH THIRD PARTY CAUSED DIRECTLY OR INDIRECTLY BY ANY BREACH OF THIS AGREEMENT OR THE PROVISION OF ANY SOFTWARE, WORK PRODUCT, MATERIALS OR SERVICES PURSUANT TO THIS AGREEMENT, INCLUDING ANY COSTS OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, OR FOR ANY LOSS OF OR INJURY TO EARNINGS, PROFITS OR GOODWILL, WHETHER LIABILITY IS ASSERTED IN CONTRACT OR TORT (INCLUDING NEGLIGENCE OR STRICT PRODUCT LIABILITY). THIS LIMITATION SHALL APPLY EVEN IF THE OTHER OR ITS AGENT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THIS SECTION DOES NOT APPLY TO A PARTY'S INDEMNIFICATION OBLIGATIONS OR LIABILITY FOR GROSS NEGLIGENCE, WILLFUL MISCONDUCT; OR A BREACH OF CONFIDENTIALITY.

31. CUSTOMER RESPONSIBILITIES:

31.1. ACKNOWLEDGEMENT. As part of this Agreement with respect to Pioneer Solutions' provision of Professional Services, CUSTOMER shall have certain responsibilities, some of which may be critical to the successful delivery of such services. CUSTOMER acknowledges that CUSTOMER's failure to provide Pioneer Solutions with accurate information, data and other requested materials, including timely access to CUSTOMER's personnel, equipment, software, and facilities, may negatively affect both the ability of Pioneer Solutions to deliver the Professional Services and the quality and timeliness of services rendered. Pioneer Solutions shall not be responsible for deficiencies, errors, or delays in Professional Services resulting from CUSTOMER's failure, or the failure of third parties, to provide Pioneer Solutions with accurate and timely information, data, materials and timely access to appropriate CUSTOMER personnel, equipment, software, and facilities.

31.2. GENERAL RESPONSIBILITIES. Some of CUSTOMER's general responsibilities are as follows: (i) CUSTOMER shall provide Pioneer Solutions, in a timely fashion, with all information, data and other requested materials (including any new or revised information, data and materials), reasonably required for Pioneer Solutions' rendering of the Professional Services; (ii) CUSTOMER shall appoint one or more representatives responsible for facilitating Pioneer Solutions' rendering of the Professional Services and assisting Pioneer Solutions in gathering information, interviewing personnel, observing CUSTOMER's systems and processes, and other related activities. CUSTOMER shall ensure that these representatives, or their designated replacements, continue to work with and be available to Pioneer Solutions for the duration of Pioneer Solutions' rendering of the Professional Services or substitutes acceptable to Pioneer Solutions are secured; (iii) CUSTOMER shall provide reasonable access to CUSTOMER premises necessary for Pioneer Solutions' rendering of the Professional Services, including adequate office facilities, work space, phone, printer and building access at no cost to Pioneer Solutions; (iv) CUSTOMER shall participate in meetings convened for the purpose of Pioneer Solutions' rendering of the Professional Services; (v) CUSTOMER shall cooperate fully with Pioneer Solutions in all aspects of Pioneer Solutions' providing of Professional Services; and (vi) CUSTOMER agrees to provide Pioneer Solutions with legal, licensed copies of third-party software for the provision of Professional Services hereunder, if applicable.

32. CONFIDENTIAL INFORMATION:

32.1. DEFINITION OF CONFIDENTIAL INFORMATION. Pioneer Solutions and CUSTOMER (each a "Party") may disclose to one another certain information including but not limited to technical or business knowledge, know-how, discoveries, inventions, flow charts, source code, algorithms, libraries, processes, software programs, hardware schematics, drawings, databases, specifications, trade secrets, customer lists, or other customer information, information relating to released or unreleased software products, the marketing or promotion of any product, financial information, business policies or practices, information received from others that either Party is obligated to treat as confidential, all of which shall be considered "Confidential Information" under this Agreement. Confidential Information shall also include the terms contained in this Agreement. Confidential Information shall not include any information that (i) was lawfully in a recipient Party's possession before receipt from the other Party; (ii) is or becomes available to the public through no fault of a recipient Party; (iii) is lawfully disclosed to the recipient Party by a third party without restriction on disclosure; (iv) is independently developed by a recipient Party without using Confidential Information; (v) has been approved for release by written consent of an officer of the disclosing Party; or (vi) is required to be disclosed under legal process, provided the other Party is given prior notice, and the Party compelled to make the disclosure takes all reasonable steps available to protect the Confidential Information in the context of the proceeding.

32.2. NON-DISCLOSURE/NON-USE OF CONFIDENTIAL INFORMATION. Pioneer Solutions and CUSTOMER agree to take reasonable steps to prevent the disclosure and availability of Confidential Information of the other Party to third parties and not to use Confidential Information except for the purposes set forth in this Agreement. Pioneer Solutions and CUSTOMER agree to take reasonable steps to ensure that their respective employees, agents, and contractors do not use, disclose or make available to third parties Confidential Information of the other Party. Pioneer Solutions and CUSTOMER shall return to one

another all tangible Confidential Information upon written request by the other Party or upon termination or expiration of this Agreement, except that each Party may retain a copy of any such Confidential Information in written form with such Party's legal representative for record purposes.

32.3. TERM/DURATION OF OBLIGATIONS WITH RESPECT TO CONFIDENTIAL INFORMATION. The confidentiality obligations imposed by this Agreement shall survive expiration or termination of this Agreement, and remain in effect for a period of three (3) years thereafter; except that for Confidential Information constituting a trade secret, including but not limited to source code, algorithms and libraries, the period shall be the later of such three (3) year period or the period during which such Confidential Information is entitled to trade secret protection under applicable law. This provision shall survive termination of this Agreement. Neither party will receive a right, license or authorization to use the Confidential Information of the other, unless expressly authorized under this Agreement.

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

APPROVED BY

Marin Clean Energy:

DocuSigned by:
By: Picken Kasmjian
ACC4B8FA2E834F3...
- COO
Date: 6/3/2020

IMPLEMENTER:

DocuSigned by:
By: Uday Baral
6CABABF7C7034BD...
Name: Uday Baral
Date: 6/3/2020

MODIFICATIONS TO ENERGY EFFICIENCY STANDARD SHORT FORM

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

List sections affected: Sections 3, 4, 5, 9, 10, 11, 12 A, 14, 17.2, 17.2 (omitted), 17.3 (omitted), 17.7 (added 17.7.1, 17.7.2, and 17.7.3), 22.1, 22.3, 22.6 (omitted b-d), 22.7 (omitted), 23-26 (omitted), added sections 28-32.

DocuSigned by:
Approved by MCE Counsel: Catalina Murphy
UCC3FD724F79482...

Date: 6/3/2020

EXHIBIT A

SCOPE OF SERVICES (required)

Implementer will provide the following services related to Contract and Portfolio Management implementation as requested and directed by MCE staff, up to the maximum time/fees allowed under this Agreement.

PILOT CONTRACT AND PORTFOLIO MANAGEMENT IMPLEMENTATION SCOPE

MCE desires to conduct a pilot to test TRMTracker SaaS software with a limited scope to manage energy contracts and portfolio. The scope of professional services will be the following:

- Conduct a Pilot
- Review Pilot Results
- Provide basic user training for purpose of meeting the Pilot objectives
- Provide necessary project management

The following tasks are in scope:

- Provide necessary project management for Pilot
- Copy PEA database and purge non-MCE data with supervision from PEA
- Enable existing reporting views PEA is using
- Enable a position report for Energy and Capacity on yearly, quarterly, monthly and hourly granularity including hedged percentage
- Configure PPA contract and enter up to 10 PPA contracts manually
- Configure one expiration date Alert
- Create reporting views for PPA contract
- Provide basic user training
- Assist users in verifying the Pilot results

The following assumptions are made:

- This is not a full project execution. Upon completion of this Pilot and MCE's satisfaction that the software meets its needs, a separate SOW will be prepared for full project execution.
- Pilot efforts will be capped to 240 hours for Pilot. The objective of the Pilot is for MCE to validate that TRMTracker software will meet its needs. MCE will have two (2) weeks after pilot execution efforts by Pioneer to evaluate the TRMTracker software to see if it meets MCE's needs.

PROJECT APPROACH, DELIVERABLES, TIMELINE AND COST

Pioneer will meet the project objectives by providing experienced business and system analysts. These analysts bring hands-on experience in TRMTracker software modules, energy trading, and risk management. All work will be done remotely. Pioneer staff will provide regular project status. Pilot will take approximately 6 to 8 weeks.

6-8 Weeks



- Configure SaaS instance
- Manage Project
- Load static data for Pilot
- Configure one PPA contract template
- Enter 10 PPA contracts
- Contract Expiration Alert
- Create 2 reports on contracts
- Initial training

Deliverables

- SaaS installation
- Pilot deliverables
- Basic Training

Responsibility Matrix

The following matrix identifies responsibilities between Pioneer and MCE during the project.

Activity	High Level Activity Details	Pioneer Primary	MCE Primary
MCE Project Coordination / Management	<ul style="list-style-type: none"> Overall Project coordination between MCE and Pioneer Issue resolution and risk mitigation Resource management 		X
Pioneer Project Coordination / Management	<ul style="list-style-type: none"> Overall Project coordination between MCE and Pioneer Issue resolution and risk mitigation Resource management 	X	
Build and Unit Test	<ul style="list-style-type: none"> Code /Configuration Review Complete Unit (Technical) testing 	X	O
Pilot Validation	<ul style="list-style-type: none"> Test Coordination / Prep for MCE Prepare Test Cases (Scripts) Scenarios Create and Sign off on Test Cases (Scripts) 	O	X
	<ul style="list-style-type: none"> Test coordination Pilot Testing 	X	O
Training	<ul style="list-style-type: none"> Provide Basic Training 	X	O

X = Primary responsibility for completion based on agreed schedule (Lead role)

O = Support / Assist Lead role with required task completion

MCE'S OBLIGATIONS

MCE will make the required personnel available in a timely manner. The personnel are primarily business users but also include management as needed. MCE will also provide answers to questions raised by Pioneer in a timely manner.

EXHIBIT B
FEES AND PAYMENT SCHEDULE

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

PROJECT COST

Pioneer will implement this project on a fixed price for \$39,000 for implementation of the Pilot program, subject to scope and assumptions listed in Exhibit A. The following milestone payments will apply:

- 50% payment billed to MCE upon execution of this Agreement
- 50% payment billed to MCE upon completion of Pilot
-

Pioneer shall bill MCE upon execution of this Agreement for \$10,000 SaaS initialization fee listed in Exhibit C for SaaS setup.

In no event shall the total cost to MCE for the services provided herein exceed the maximum sum of **\$49,000** for the term of the Agreement (\$39,000 pilot implementation fee and \$10,000 SaaS initialization fee outlined in Exhibit C).

EXHIBIT C
SAAS ORDER FORM FOR SETUP FEES & ADDENDUM TO TERMS OF SERVICE



Order Form For: Marin Clean Energy
Order Number: MCE1001P
Pricing Valid Through:
Prepared by: DC

Customer & Billing Details	
Sold To	Marin Clean Energy 1125 Tamalpais Avenue San Rafael, CA 94901
Billing Contact:	Efren Oxlaj
Billing Phone:	1-415-464-6010
Billing Email:	Invoices@MCECleanEnergy.com
Billing Language:	English

Professional Services					
Description: The Professional Services to be provided by Pioneer shall be pursuant to a mutually agreed upon Statement of Work (SOW). Pioneer retains exclusive ownership and intellectual property rights in and to all software changes developed pursuant to this Order Form.					
Type	Statement of Work (SOW) Reference	T&M Rate	UOM	T&M Estimate	Total Fee
Fixed	Standard SaaS Setup Fees (No SOW required)	N/A	N/A	N/A	\$ 10,000
T&M	Separate Professional Services Agreement Signed				\$ -

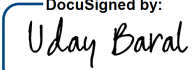
Payment Terms: Any Fixed Fees as defined in the SOW shall be due upon 'Contract Effective Date'
Any Time & Material fees as defined in the SOW (1st Agreement Exhibit A) shall be billed per the schedule in 1st Agreement Exhibit B.

Payment Type: Net 30

Subscription Service Terms & Conditions							
Contract Effective Date: Date of signature				Initial Commitment Term: 2 Months			
Payment Type: COD				Invoice Method: Email			
Billing Frequency: No charge for SaaS service during pilot.							
Licensed Project, Work Group or Entity: Marin Clean Energy							
Item	Years	Rate	Initial Term: Item Description	Start date	End Date	# Users	Annual Price
1	0	\$ -	TRMTracker Software SaaS - 2-MONTH PILOT*	1-Jun-20	31-Jul-20	5	\$0
Unless otherwise specified, prices do not include Travel Expenses							
Other Standard Terms - None							

Purchase Order Number:	
Order Form and Contractual Agreement	
BY EXECUTING THIS ORDER FORM, CUSTOMER AGREES TO THE PIONEER SOLUTIONS TERMS AND CONDITIONS (THE "TERMS OF SERVICE"). IF YOU ARE ENTERING INTO THIS ORDER FORM ON BEHALF OF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE AUTHORITY TO BIND SUCH ENTITY AND ITS AFFILIATES TO THESE TERMS, IN WHICH CASE THE TERM "CUSTOMER" SHALL REFER TO SUCH ENTITY AND ITS AFFILIATES. IF YOU DO NOT HAVE SUCH AUTHORITY, OR IF YOU DO NOT AGREE WITH THE TERMS OF SERVICE, YOU MUST NOT EXECUTE THIS ORDER FORM AND MAY NOT USE THE SERVICE.	
The Terms of this Order Form ("Order Form"), the Terms of Service located at Pioneer website, except as amended by the Parties by the Amendment attached hereto , and if a professional services Statement of Work is described in this Order Form, the Pioneer Statement of Work (collectively the "Agreement") govern your use of the Pioneer Service and Professional Services and supercede all prior and contemporaneous discussions, representations and agreements related to their subject matter. Any inconsistent terms in any purchase order, acknowledgement, or order form documents are void and with no legal effect. By Your electronic confirmation, or by signing and returning this Order Form, You acknowledge having read the Terms of Service and your agreement to be bound by this Agreement.	
Pioneer's fees are exclusive of all taxes, levies, or duties imposed by taxing authorities, and You shall be responsible for payment of all such taxes, levies, or duties, excluding only taxes based solely on Pioneer's income. If Pioneer has the legal obligation to pay or collect taxes for which You are responsible, the appropriate amount shall be invoiced to and paid by You unless You provide Pioneer with a valid tax exemption certificate authorized by the appropriate taxing authority.	

PioneerSolutions LLC

DocuSigned by:

Signature: 6CABABF7C7034BD...
Name: Uday Baral
Title: Managing Member
Date: 6/3/2020

You/Customer

DocuSigned by:

Signature: ACC4B8FA2E834F3...
Name: Vicken Kasarjian
Title: COO
Date: 6/3/2020

**AMENDMENT
To
SOFTWARE AS A SERVICE TERMS AND CONDITIONS**

This Amendment (the “**Amendment**”) to Software as a Service Terms and Conditions (the “**Agreement**”) is entered into as of June 3, 2020 (the “**Amendment Effective Date**”) between Marin Clean Energy (“Customer”) and Pioneer Solutions, LLC (“Pioneer Solutions”). All terms used in this Amendment and not otherwise defined herein shall have the meanings ascribed to such terms in the Agreement.

WHEREAS, this Amendment is attached to and part of the Order Form of even date herewith pursuant to which Customer has purchased a subscription to the Pioneer Solutions Software as a Service for the term specified therein; and

WHEREAS it is the Parties’ intention that, except as expressly set forth below, the terms and conditions of the Agreement shall remain unmodified and shall continue in full force and effect.

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

1. Notwithstanding anything in the Agreement to the contrary, Pioneer Solutions shall provide Customer with reasonable advance written notice of material changes to the Agreement.
2. Section 3.3 Audit Rights is hereby deleted in its entirety and replaced with the following: ”
3.3 Audit Rights. Customer agrees that Pioneer Solutions shall have the right to remotely audit Customer’s records relating to access and use of the Services in order to verify Customer’s compliance with the license rights in this Agreement; provided, however, that Pioneer Solutions will do so only to the extent necessary to accomplish said verification. If any such audit reveals use by Customer greater than the number approved in an order, Customer agrees to pay to Pioneer Solutions the cost of the additional use within thirty (30) days of written notice by Pioneer Solutions.
3. Section 6.1 is hereby deleted and replaced with the following:
“6.1 Pioneer Solutions Systems and Security Obligations. Pioneer Solutions will employ all commercially reasonable security measures in accordance with applicable industry practice.”
4. The first sentence of Section 6.2 is hereby deleted and replaced with the following:
“6.2 Customer Control and Responsibility. Without limiting Section 6.1, Customer has and will retain responsibility for:”

5. Section 8.3 is hereby deleted and replaced with the following:

“8.3 Consent to Use Customer Data. Customer hereby grants the limited rights and permissions in or relating to Customer Data to Pioneer Solutions and the Pioneer Solutions Personnel that are strictly necessary or useful to perform the Services.

6. The following sentence shall be inserted at the end of Section 9.1: “Neither party will receive a right, license or authorization to use the Confidential Information of the other, unless expressly authorized under this Agreement.”

7. Section 10.2(a) is hereby deleted in its entirety and replaced with the following:

10.2 ‘(a) Each party may terminate this Agreement immediately if either party breaches its obligations to the other under Section 9 (Confidentiality). Pioneer Solutions may terminate this Agreement, effective on written notice to Customer, if Customer: (i) fails to pay any amount when due hereunder, and such failure continues more than fifteen (15) days after Pioneer Solutions delivery of written notice thereof; or (ii) breaches any of its obligations under Section 3.4 (Use Limitations and Restrictions).’

8. Section 10.3(f) is hereby deleted in its entirety and replaced with the following:

10.3 ‘(f) If Customer terminates this Agreement pursuant to Section 10.2(a) or (b), Customer will be relieved of any obligation to pay any Fees attributable to the period after the effective date of such termination and Pioneer Solutions will refund to Customer Fees paid in advance for Services that Pioneer Solutions has not provided as of the effective date of termination.’

9. The second sentence of Section 11.2 (DISCLAIMER OF WARRANTIES) is deleted and replaced with the following:

“WITHOUT LIMITING THE FOREGOING AND WITHOUT LIMITING PIONEER’S COMMITMENTS IN THIS AGREEMENT, PIONEER SOLUTIONS MAKES NO WARRANTY OF ANY KIND THAT THE SERVICES, OR ANY PRODUCTS OR RESULTS OF THE USE THEREOF, WILL MEET CUSTOMER’S OR ANY OTHER PERSON’S REQUIREMENTS, OPERATE WITHOUT INTERRUPTION, ACHIEVE ANY INTENDED RESULT, BE COMPATIBLE OR WORK WITH ANY SOFTWARE, SYSTEM OR OTHER SERVICES, OR BE SECURE, ACCURATE, COMPLETE, FREE OF HARMFUL CODE OR ERROR FREE.”

10. Section 12.1 is hereby deleted in its entirety and replaced with the following:

12.1 EXCLUSION OF DAMAGES. EXCEPT AS OTHERWISE PROVIDED IN SECTION 13.3, IN NO EVENT WILL EITHER PARTY OR ANY OF ITS LICENSORS, SERVICE PROVIDERS OR SUPPLIERS BE LIABLE TO THE OTHER UNDER OR IN CONNECTION WITH THIS AGREEMENT OR ITS

SUBJECT MATTER UNDER ANY LEGAL OR EQUITABLE THEORY, INCLUDING BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY AND OTHERWISE, FOR ANY: (a) LOSS OF PRODUCTION, USE, BUSINESS, REVENUE OR PROFIT; (b) IMPAIRMENT, INABILITY TO USE OR LOSS, INTERRUPTION OR DELAY OF THE SERVICES, (c) LOSS, DAMAGE, CORRUPTION OR RECOVERY OF DATA, OR BREACH OF DATA OR SYSTEM SECURITY, OR (d) CONSEQUENTIAL, INCIDENTAL, INDIRECT, EXEMPLARY, SPECIAL, ENHANCED OR PUNITIVE DAMAGES, REGARDLESS OF WHETHER SUCH PERSONS WERE ADVISED OF THE POSSIBILITY OF SUCH LOSSES OR DAMAGES OR SUCH LOSSES OR DAMAGES WERE OTHERWISE FORESEEABLE, AND NOTWITHSTANDING THE FAILURE OF ANY AGREED OR OTHER REMEDY OF ITS ESSENTIAL PURPOSE.

11. Section 12.3 is hereby deleted and replaced with the following:
12.3 “Exceptions. The exclusions and limitations in Section 12.1 and Section 12.2 do not apply a party’s indemnification obligations or liability for gross negligence, willful misconduct; or a breach of confidentiality under Section 9.”
12. The following Section 12.4 shall be inserted after Section 12.3:

12.4 Indemnification. Each party ("Provider") will defend and indemnify the other party ("Recipient") against a third-party allegation or claim arising from breach of confidentiality and the warranties in Section 11. The Recipient must promptly notify the Provider in writing of the claim; (b) the Provider has sole control of the defense and all related settlement negotiations; (c) the Recipient must provide the Provider with the assistance, information and authority reasonably required for the defense and settlement of the claim and (d) the Recipient has the right, (but not the obligation) to employ separate counsel (at Recipient’s expense) in order to monitor or participate in the defense of such allegation or claim. The Provider shall not settle any claim that imposes upon the Recipient any liability, damages, restriction or obligation without Recipient’s prior written consent, which consent will not be unreasonably withheld, delayed or conditioned.”
13. In Section 14.11, Governing Law; Submission to Jurisdiction, California shall replace Colorado and Marin County shall replace the City and County of Denver.
14. Section 14.12, Waiver of Jury Trial, is hereby deleted in its entirety.
15. Except as specifically amended by this Amendment, the Agreement shall remain in full force and effect. In the event of any inconsistency or conflict between the Agreement and this Amendment, the terms and conditions and provisions of this Amendment shall govern and control.

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed by their duly authorised representatives as of the Amendment Effective Date.

MARIN CLEAN ENERGY

DocuSigned by:
Vicken Kasarjian
Signature: _____
ACC4B8FA2E834F3...
Name: Vicken Kasarjian
Title: COO

PIONEERSOLUTIONS LLC

DocuSigned by:
Uday Baral
Signature: _____
6CABABF7C7034BD...
Name: Uday Baral
Title: Managing Member

FIRST AMENDMENT TO FIRST AGREEMENT BY AND BETWEEN MARIN CLEAN ENERGY AND PIONEER SOLUTIONS

This FIRST AMENDMENT is made and entered into on October 1, 2020, by and between MARIN CLEAN ENERGY, (hereinafter referred to as "MCE") and PIONEER SOLUTIONS, (hereinafter referred to as "Implementer").

RECITALS

WHEREAS, MCE and Implementer entered into an agreement on June 3, 2020, to provide contract and portfolio management software implementation services for a pilot program ("Agreement"); and

WHEREAS, Section 4 to the Agreement provided for Implementer to be compensated in an amount not to exceed \$49,000 for the pilot software implementation services described within the scope therein; and

WHEREAS the parties desire to amend the Agreement to increase the contract amount by \$153,600 for total consideration not to exceed \$202,600 for full software implementation services; and

WHEREAS, Section 5 of the Agreement stated the Agreement shall terminate on December 31, 2020; and

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

WHEREAS, Section 21 to the Agreement acknowledged the exhibits to be included in the Agreement; and

WHEREAS, the parties desire to add two additional exhibits to the agreement; and

WHEREAS, Exhibit A to the Agreement specified the tasks Implementer will complete for the pilot software implementation services as described in the scope therein; and

WHEREAS, the parties desire to amend the Agreement to add to the scope of work of the Agreement for full implementation services; and

WHEREAS, Exhibit B to the Agreement specified the fee and payment schedule MCE will use to compensate Implementer for the pilot software implementation services as described in the scope therein; and

WHEREAS the parties desire to amend the Agreement to add to the fee and payment schedule of the Agreement for the full implementation services.

NOW, THEREFORE, the parties agree to modify Sections 4, 5, and 21 and Exhibits A and B as set forth below.

AGREEMENT

1. Section 4 is hereby deleted in its entirety and replaced to read as follows:

MAXIMUM COST TO MCE:

In no event will the cost to MCE for the Services to be provided herein exceed the maximum sum set forth in the applicable Exhibit attached hereto and that references this Agreement. For clarity, the maximum sum for the professional services in Exhibit A will be **\$192,600**, for the pilot and full implementation, as set forth in Exhibit B; the maximum amount in Exhibit C will be **\$10,000** for the pilot software; and the maximum amount in Exhibit D will be **\$322,263**.

2. Section 5 is hereby deleted in its entirety and replaced to read as follows:

TIME OF AGREEMENT:

This Agreement shall commence on **June 1, 2020**, and shall terminate on **June 30, 2021** ("Termination Date") unless the parties agree in writing to change the Termination Date, including in an Exhibit. For clarity, any professional services terms and condition will terminate on the Termination Date. The software license purchased in Exhibit D is for a 2-year license subscription with a renewal term that is separate from Termination Date for professional services. Certificate(s) of Insurance must be current on the day the Agreement commences and if scheduled to lapse prior to termination date, must be automatically updated before final payment may be made to Implementer.

3. Section 21 is hereby deleted in its entirety and replaced to read as follows:

	<input checked="" type="checkbox"/>	<u>Check applicable Exhibits</u>	<u>IMPLEMENTER'S INITIALS</u>
<u>EXHIBIT A.</u>	<input checked="" type="checkbox"/>	Scope of Services	
<u>EXHIBIT B.</u>	<input checked="" type="checkbox"/>	Fees and Payment	
<u>EXHIBIT C.</u>	<input checked="" type="checkbox"/>	SaaS Order Form for Pilot Setup Fees & Addendum to Terms of Service	
<u>EXHIBIT D.</u>	<input checked="" type="checkbox"/>	SaaS Order Form for Full Implementation Setup Fees (for up to 7 users for a 2-year subscription) & Addendum to Terms of Service	
<u>EXHIBIT E.</u>	<input checked="" type="checkbox"/>	Functional Requirements	

4. The following items are hereby added to the end of Exhibit A:

FULL CONTRACT AND PORTFOLIO MANAGEMENT IMPLEMENTATION OF TRMTracker

MCE has recently completed a Pilot phase to evaluate TRMTracker software and has acquired TRMTracker SaaS software to manage energy contracts and portfolio. The scope of professional services will be the following:

- Conduct Scoping phase
- Configure 3 contract templates
- Configure User Defined Fields/Tables
- Configure workflows and alerts
- Implement processes for portfolio management per MCE specification, utilizing PEA¹ best practices where applicable (e.g., curve management, position management, MTM process, forward P&L reporting)
- Create views required for user reporting
- Assist in data migration, which will be a manual process
- Import all MCE Data stored in PEA database (including existing processes and reports utilized by PEA for portfolio management)
- After all development activities have been completed and the fully developed product is ready to go live, the MCE database will be made current with data in the PEA database. The approach to accomplish this will be determined during the scoping phase.
- Integrate with PEA database to allow read/write between databases on all fields

¹ PEA refers to Pacific Energy Advisors which is a contractor to MCE. PEA also has a TRMTracker instance and is assisting on the functional requirements and processes that will work best with MCE's energy contract portfolio.

- Enable standard import for meter data, forecasts, and price curves
- Perform technical design, test, deploy, and train MCE Staff
- Assist users in testing
- Provide project management
- Training: Pioneer will provide functional training to MCE staff as functionality is built and implemented. Unlimited access to training materials and tutorials at the start of implementation and a virtual training site will be provided no later than when implementation is completed. This training access shall remain available to MCE staff as long as a valid Order Form (like Exhibit D) for the software license is in effect.

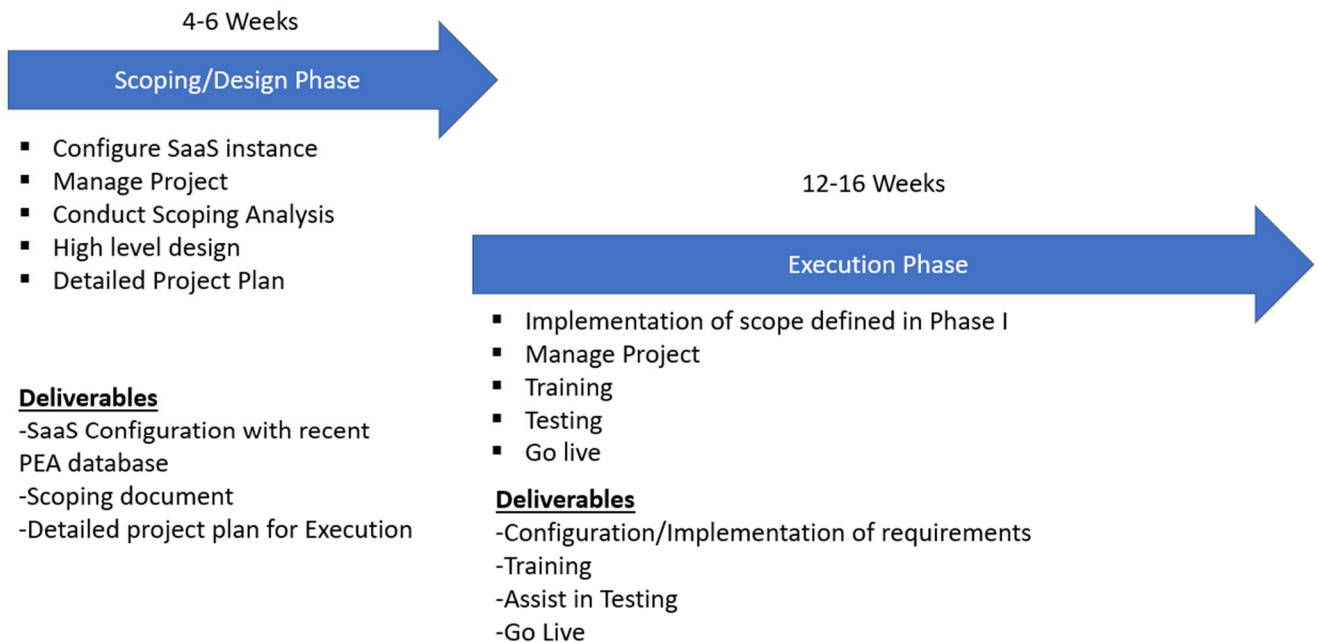
The requirements outlined in the CTRM Functional Requirements document, attached to this Agreement as Exhibit E, are the governing requirements that must be met for the successful implementation by Pioneer. Only high and medium requirements are in scope for full implementation.

PROJECT APPROACH, DELIVERABLES, TIMELINE

Pioneer will meet the project objectives by providing experienced business and system analysts. These analysts bring hands-on experience in TRMTracker software modules, energy trading, and risk management.

Work will be performed remotely, unless otherwise approved by MCE. Pioneer staff will provide regular project status updates on a weekly basis.

The following is a high-level timeline and deliverables. A more detailed plan will be created upon completion of the Scoping/Design phase.



PROJECT SPRINTS

Pioneer and MCE will work cooperatively on “project sprints” (sprints) over 1-4 week periods to complete key project deliverables throughout the scoping/design and execution phases. Sprints will be used to refine and detail the scope of key project deliverables and assign timeline, hours and costs specific to achieving deliverables that fall within the implementation specification document and ensure the functional requirements set forth in Exhibit E are met. The process for executing sprints over the course of the project will be as follows:

1. MCE and Pioneer will mutually agree upon detailed deliverables and estimated hours/spend to achieve explicit deliverable(s) over a 1-4 week timeline during the scoping phase.

2. Upon agreement of the sprint, Pioneer will complete the deliverables scoped into the sprint and deliver to MCE by the conclusion of the agreed upon timeline for that sprint.
3. MCE will review the deliverable based upon on the predetermined scope and related metrics. If the deliverable is acceptable, MCE and Pioneer will complete the sprint and move on to the next sprint. An acceptable deliverable must meet the predetermined scope and related metrics and further the functional requirements listed in Exhibit E. If the deliverable does not meet the predetermined criteria, Pioneer, with the assistance of MCE, shall revise the deliverable to meet the predetermined criteria. If it is determined that the deliverable cannot be completed to meet the predetermined criteria, MCE and Pioneer will work to revise criteria in the current sprint before moving forward with additional work and billable hours. Pioneer will invoice for actual hours performed since the previous invoice, and MCE will pay undisputed amounts listed on the invoice within the terms of this Agreement.

Responsibility Matrix

The following matrix identifies responsibilities between Pioneer and MCE during the project.

Activity	High Level Activity Details	Pioneer Primary	MCE Primary
MCE Project Coordination / Management	<ul style="list-style-type: none"> Overall Project coordination between MCE and Pioneer Issue resolution and risk mitigation Project schedule and budget Resource management Project closure 		X
Pioneer Project Coordination / Management	<ul style="list-style-type: none"> Overall Project coordination between MCE and Pioneer Issue resolution and risk mitigation Project schedule and budget Resource management Project closure 	X	
Change Management	<ul style="list-style-type: none"> Responsible for implementing process changes due to software implementation 	O	X
Solution (Functional) Design	<ul style="list-style-type: none"> Implementation Specification document Provide hand-off and support to development team 	X	O
	<ul style="list-style-type: none"> Sign off on Solution Design 	O	X
Test Planning	<ul style="list-style-type: none"> Determine test approach Prepare Test Strategy / Plan document Prepare Test Scripts (Cases) for Unit Testing - Based on test conditions in the Solution and Technical Design documents 	X	O
	<ul style="list-style-type: none"> Sign off on Test Strategy and Test Plan 	O	X
Build and Unit Test	<ul style="list-style-type: none"> Code / Configure based on the Technical Design document Code /Configuration Review Complete Unit (Technical) testing 	X	O
Prepare for Testing - System, Parallel and UAT	<ul style="list-style-type: none"> Test Coordination / Prep for MCE Prepare Test Cases (Scripts) Scenarios Create and Sign off on Test Cases (Scripts) 	O	X
	<ul style="list-style-type: none"> Test coordination 	X	O
User Acceptance Testing (UAT)	<ul style="list-style-type: none"> Test execution 	O	X
	<ul style="list-style-type: none"> Defect fix, tracking and reporting of fixes 	X	O
	<ul style="list-style-type: none"> UAT results and sign off 	O	X

Activity	High Level Activity Details	Pioneer Primary	MCE Primary
Technical Knowledge / Support Transition	<ul style="list-style-type: none"> Prepare knowledge transition documents, as appropriate Transition knowledge to MCE teams for support – Conduct knowledge transfer sessions 	X	O
Training	<ul style="list-style-type: none"> Prepare for Training Conduct functional, administrator and technical training 	X	O

X = Primary responsibility for completion based on agreed schedule (Lead role)

O = Support / Assist Lead role with required task completion

MCE'S OBLIGATIONS

MCE will make the required personnel available in a timely manner. The personnel are primarily business users but may also include management, as needed. MCE will also provide answers to questions raised by Pioneer in a timely manner.

5. Exhibit B is hereby amended and replaced in its entirety as follows:

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

PILOT PROJECT COST (Parties agree this has been completed and paid in full as of the date of the 1st Amendment)

Pioneer will implement this project on a fixed price for \$39,000 for implementation of the Pilot program, subject to scope and assumptions listed in Exhibit A. The following milestone payments will apply:

- 50% payment billed to MCE upon execution of this Agreement
- 50% payment billed to MCE upon completion of Pilot

Pioneer shall bill MCE upon execution of this Agreement for \$10,000 SaaS initialization fee listed in Exhibit C for SaaS setup.

In no event shall the total cost to MCE for the services provided herein for the Pilot Implementation exceed the maximum sum of **\$49,000** for the term of the Agreement (\$39,000 pilot implementation fee and \$10,000 SaaS initialization fee outlined in Exhibit C).

FULL IMPLEMENTATION PROJECT COST

Pioneer will implement this project on a time and materials basis. Estimated project cost is not to exceed \$153,600 as shown in the table below. Pioneer shall seek MCE approval before proceeding with additional efforts if the project is nearing the estimated total cost.

Tasks	Areas	Function	Previous	Assumptions
Project Management			160	
Scoping			160	
Static data Setup			40	
				No automated data migration. Pioneer will setup templates and MCE will manually setup all required data and verify.
Data Migration			40	
Training			24	
Integration				
		Inegration with PEA Database	n/a	Forecasts, deals
		Forecast Data	16	
		Meter Data	16	Meter data to be imported in standard format
		Price Curves	16	Price curves to be imported in standard format
Roles and Privileges			24	
Process Setup/Configuration				
	Contract Management			
		Configure User Defined Fields/Tables	40	
		Configure Contract Entry Templates	120	Up to 3 Contract Entry Template
		Configure Workflows	24	About 2 Workflows/Approval Process
		Configure Alerts	40	About 20 Alerts to be configured
	Portfolio Management			
		Curve Management	16	Same process as in PEA database
		Position Management	24	Same process as in PEA database
		MTM Process	24	Same process as in PEA database
		Forward PNL Reporting	16	
Additional Reporting		Create custom views per scope		MCE will be trained on creating required reports. Pioneer will create any required custom views.
Testing Support			80	MCE will create test scripts. Pioneer will assist.
Total Hours			960	
Blended Hourly Rate				
Discounted Rate	36%		\$160	
Implementation Services			\$153,600	

In no event shall the total cost to MCE for the services provided herein for the Full Implementation Contract and Portfolio TRMTracker exceed the maximum sum of **\$153,600** for the term of the Agreement. Pioneer shall bill MCE upon execution of this Agreement for year one of the SaaS software fee listed in the Order form attached as Exhibit D for SaaS fees, and annually thereafter unless the initial term is terminated per the SaaS terms and conditions as listed in the Order Form (Exhibit D).

In no event shall the total cost to MCE for the professional services provided herein for the Pilot and Full Implementation of the Contract and Portfolio TRMTracker exceed the maximum sum of **\$192,600** for the term of this Agreement.

6. The Order Form MCE1002 is hereby attached to this Agreement as Exhibit D.
7. The Functional Requirements spreadsheet is hereby attached to this Agreement as Exhibit E.
8. 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:

PIONEER SOLUTIONS:

By: _____

By: _____

Date: _____

Date: _____



7400 E. Orchard Rd., Suite 170 S
 Greenwood Village, CO 80111, USA

Order Form For: Marin Clean Energy

Order Number: MCE1002

Pricing Valid Through:

Prepared by: DC

Customer & Billing Details

Sold To Marin Clean Energy
 1125 Tamalpais Avenue
 San Rafael, CA 94901

Billing Contact: Efen Oxlaj
Billing Phone: 1-415-464-6010
Billing Email: Invoices@MCECleanEnergy.com
Billing Language: English

Professional Services

Description: The Professional Services to be provided by Pioneer shall be pursuant to a mutually agreed upon Statement of Work (SOW).

Pioneer retains exclusive ownership and intellectual property rights in and to all software changes developed pursuant to this Order Form.

Type	Statement of Work (SOW) Reference	T&M Rate	UOM	T&M Estimate	Total Fee
Fixed	Standard SaaS Setup Fees (No SOW required)	N/A	N/A	N/A	\$10,000 paid during pilot
T&M	Separate Professional Services Agreement Signed				\$ -

Payment Terms: Any Fixed Fees as defined in the SOW shall be due upon 'Contract Effective Date'

Any Time & Materials fees as defined in the SOW (1st Agreement Exhibit A) shall be billed per the schedule in 1st Agreement Exhibit B.

Payment Terms: Net 30

Subscription Service Terms & Conditions

Contract Effective Date: Date of signature

Initial Commitment Term: 2 Years

Payment Type: COD

Invoice Method: Email

Billing Frequency: Annual in Advance

Licensed Project, Work Group or Entity: Marin Clean Energy

Item	Years	Rate	Initial Term: Item Description	Start date	End Date	# Users	Annual Fee
1	2	\$ 25,500	TRMTracker Software SaaS - Named Users* Functionality per TRMTracker SaaS Specification for Contract Management & Portfolio Management	15-Oct-20	14-Oct-22	5	\$127,500
2	2	\$ 15,625	Additional Users* (optional): per Functionality described in Item 1	15-Oct-20	14-Oct-22	0	\$0
3	2	\$ 7,813	Read-Only Users* (optional): per Functionality described in Item 1	15-Oct-20	14-Oct-22	0	\$0

* annual escalation at 3% on prior-year fees

Unless otherwise specified, prices do not include Travel Expenses

Other Standard Terms

- Technical Support is provided based on the Pioneer Solutions SaaS Service Level Agreement.
- Additional users to be added on pro-rata basis for the remaining months in the year of subscription
- User change cost \$500 per each change (for swapping users, not additional users)
- User Acceptance Testing or any other sand box is available at \$200/day charge
- DB size 50GB production database size provided. Additional 50GB will incur \$100/user/month cost. If increase occurs during mid-period, charge will incur on pro-rata basis

Purchase Order Number: _____

Order Form and Contractual Agreement

BY EXECUTING THIS ORDER FORM, CUSTOMER AGREES TO THE PIONEER SOLUTIONS TERMS AND CONDITIONS (THE "TERMS OF SERVICE"). IF YOU ARE ENTERING INTO THIS ORDER FORM ON BEHALF OF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE AUTHORITY TO BIND SUCH ENTITY AND ITS AFFILIATES TO THESE TERMS, IN WHICH CASE THE TERM "CUSTOMER" SHALL REFER TO SUCH ENTITY AND ITS AFFILIATES. IF YOU DO NOT HAVE SUCH AUTHORITY, OR IF YOU DO NOT AGREE WITH THE TERMS OF SERVICE, YOU MUST NOT EXECUTE THIS ORDER FORM AND MAY NOT USE THE SERVICE.

The Terms of this Order Form ("Order Form"), the Terms of Service located at Pioneer website, **except as amended by the Parties by the Amendment attached hereto**, and if a professional services Statement of Work is described in this Order Form, the Pioneer Statement of Work (collectively the "Agreement") govern your use of the Pioneer Service and Professional Services and supercede all prior and contemporaneous discussions, representations and agreements related to their subject matter. Any inconsistent terms in any purchase order, acknowledgement, or order form documents are void and with no legal effect. By Your electronic confirmation, or by signing and returning this Order Form, You acknowledge having read the Terms of Service and your agreement to be bound by this Agreement.

Pioneer's fees are exclusive of all taxes, levies, or duties imposed by taxing authorities, and You shall be responsible for payment of all such taxes, levies, or duties, excluding only taxes based solely on Pioneer's income. If Pioneer has the legal obligation to pay or collect taxes for which You are responsible, the appropriate amount shall be invoiced to and paid by You unless You provide Pioneer with a valid tax exemption certificate authorized by the appropriate taxing authority.

PioneerSolutions LLC

You/Customer

Signature: _____
 Name: _____
 Title: _____
 Date: _____

Signature: _____
 Name: _____
 Title: _____
 Date: _____

Exhibit E

Requirement ID	Detail	MCE Notes	Priority
1	System shall be able to capture contract data points and associated characteristics (see list of Data Elements).		High
2	System shall determine necessary data elements based on contract type	We need to ensure data input consistency by requiring entry of certain fields based upon contract type. We want an easy to use UI for team members to enter all relevant fields that will mandate required fields.	High
3	System shall be able to track NERC holiday, weekend, weekday, account for daylight savings, time zones		High
4	System shall maintain historical audit trail of data element changes	We would like all fields to have audit tracking so we can see which user edited a field, when and what the values changed to.	High
5	System shall provide basic calculations between values in data elements in reports and dashboards.	Need to have user defined queries that meet user defined criteria. An example would be wanting to pull up any Letter of Credit that expires in the next 60 days.	High
6	System shall provide user defined dashboards, visualizations, reports, and notifications	We need an easy way to create dashboards and visualizations to manage workflow and upcoming deadlines and triggers for action. This would include being able to easily create reports with operators such as =,<,>, etc that can run on values in data elements. Also need to be able to create reports that will calculate based upon number of days from a date value. Examples include alerts users of overdue invoices, upcoming construction milestones and due dates. Longer term we would like notifications via email or other method.	High
7	System shall contain universal search by various system elements in context based on UI	MCE needs the ability to search and create reports on any data elements, without having stranded data that can not be incorporated into reports	High
8	System shall be able to provide a consolidated view of contract type (firm, as-available, unit-contingent) by year, month, and daily time period	This would include pulling the correct contracts and providing details such as count of contracts, sum of MWh, MW, and broken down by commodity type	High
9	System shall be able to provide consolidated list of resource supply by technology type by year, month, day, hour	This would include pulling the correct contracts and providing details such as count of contracts, sum of MWh, MW, and broken down by commodity type	High
10	System shall be able to export reports to excel		High
11	System shall be able to have a unique identifier for each contract		High
12	system shall have an explanation field on each data entry object		High
13	system shall be able to allow user to enter in all eligible units that can deliver on a contract		High
14	system shall be able to track amendments to agreements. Want to be able to enter user notes attached to an amendment to highlight key changes		High
15	system shall collect user information and create a unique ID used to track relevant contracts for that user		High
16	System shall be able to capture CAISO monthly counter party invoiced energy volumes, meter data of deliveries, and monthly invoice \$ amount associated with energy contracts. If direct link with the CAISO is not possible to pull data, upload templates to automate entry of meter data is required.	Ideally this would mean automatically linking with CAISO/Settlecore to pull data. Understand this may be done through upload templates that would be configured for each contract.	High
17	System shall be able to model dollar exposure for open positions using various risk scenarios with ability to tighten Value at Risk	System would determine cost of open position based upon user provided forwards for each commodity type	Low

18	System shall be able to calculate non delivery penalty by contract	Phase 2 depending upon complexity	Low
19	System shall be able to allow custom business process for invoice and billing approval	Phase 2 depending upon complexity	Low
20	System shall be able to send executable contract for electronic signature by internal and external parties	Phase 2	Low
21	System shall be able to define user permissions (read only, read/write)		Low
22	System shall be able to integrate with various 3rd party systems, data stores and applications (CAISO, WREGIS, etc)		Low
23	System shall be able to determine whether a contract is long-term or not based on field values entered in for delivery start and end; system shall flag such volumes and track as appropriate		Low
24	System shall be able to allow end user to define custom attributes by form	We would like the end user to be able to add new fields to the system and set characteristics such as field type, drop down options, help text etc. These fields would then need to be available for reports and dashboards.	Medium
25	System shall track expected delivery, actual delivery, and tolerance. This includes yearly, monthly, hourly deliveries and with ability for user to define additional time periods (eg annual, ATC, 8760, super peak, on/off peak, etc)	MCE needs to look at Position Management through two lenses. One is energy hedging coverage and the 2nd is attribute coverage.	Medium
26	System shall allow user to enter in load profile at annual, monthly, and hourly granularity. This needs to be able to capture both historical load data and forward estimates.	Need to be able to enter retail load by rate class and geographic region.	Medium
27	System shall be able to determine energy and REC open positions by hourly, daily, weekly, monthly, yearly. This includes positions on renewable, hydro, ACS, system energy & GHG Emissions.		Medium
28	System shall be able to report dollar exposure for open positions (energy, RPS, hydro, ACS with probabilities)		Medium
29	System shall be able to calculate the portfolio GHG intensity by technology by year, month, day, hour		Medium
30	System shall be able to report on settlement status including (delivered, invoiced, paid) and attributes (delivered/transferred, invoiced and paid)	We need a way of tracking details related to energy invoices. This would include volumes, dollar amounts, REC deliveries, payment dates, etc. We would also like this system to store associated invoice documents. This needs the flexibility to track multiple types of energy delivered for a month (or period) under one contract.	Medium
31	System shall have the ability to attach master agreements, confirms, and amendments as appropriate	We need the ability to use the software as a document repository with the correct contract attached to the deal in the system.	Medium
32	System shall have the ability to maintain the historical context of contracts and display most recent as appropriate	If there are multiple versions of the document, these are stored, but only the most recent and relevant version is pulled up by default. System should be able to allow user to enter in notes to describe relevant changes applicable to amendment	Medium
33	System shall maintain relationships between various contract types (master, etc.) for a given time period	We need the ability to relate Master with sub agreements and amendments	Medium
34	System shall be able to flag long-term contracts (ie those 10 years in length or longer)		Medium
35	system shall track remaining notional value of contract cumulatively and by year		Medium

Field Name	Field Content Description/Definition	Current Location	Is this field an attribute of a Contract, Counterparty, Resource, ...?	Field Type	Field Options	Actual Contract Values	Alert?	Possible relevant calculations	PPA/EEI Template	Notes
Resource Name		MCL	Contract	Text Field					Both	
AKA	List all previous project names that it was known as	Contract	Contract	Text Field					Both	May be multiple names in this field
Deal Origin	How did MCE originate the contract?	Contract Manager	Contract	Drop Down	RFO, Bi-lateral, Program				Both	
Buy/Sell	Is MCE buying or selling a product?	Contract	Contract	Drop Down	Buy/Sell				Both	
Energy Storage	Does the contract contain energy storage?	Contract	Contract	Yes/No	Yes/No				Both	
Full Buy/Sell or Excess Sale	Do we buy the gross generation from the unit? Or only excess generation after serving onsite load?	Contract 2018 RPS Static	Contract	Drop Down	Full Buy/Sell, Excess Sale				Both	
Resale Agreement	Can MCE resell power from the agreement?	Contract Information	Contract	Yes/No	Yes/No				Both	
Product Type	What product(s) is the contract providing in terms of the product it is providing to the portfolio. Multiple products may be selected.	Master Contract List	Contract	Multi Select Pick List	Clean Energy RA Carbon Allowance				Both	
Energy Type	What attributes are associated with the commodity being delivered?	Master Contract List	Contract	Multi Select Pick List	PCC1 PCC2 Large Hydro/ACS Hedge None				Both	Required field if "Energy" is selected as Commodity Type
Settlement Type	How is MCE paying for the product(s)?	Master Contract List	Contract	Multi Select Pick List	Fixed Price/MWh, Fixed Price/kw-month, Index Plus, Contract for Differences				Both	
MCE Entitled to CAISO Revenue?	Does MCE either receive CAISO revenue directly or receive credit for the CAISO revenue?	???	Contract	Drop Down	Yes/No Firm, Seller's Choice, Unit Contingent, Portfolio Contingent				Both	
Contract Volume Certainty		Master Contract List	Contract	Multi Select Pick List	Contingent				EEI	
FIT Facility	Is this resource part of our FIT program?		Contract	Drop Down	Yes/No				PPA	
PCC2 Delivery Source of Imported Power	Substitute energy that flows into CA	Contract	Contract	Drop Down	System, Specified Carbon (non coal), Specified GHG Free (non nuke), N/A				Both	
Is Seller or Buyer Importer of Record?	Who will be recognized as the Importer of Record into CA?	Contract	Contract	Drop Down	Seller, Buyer, N/A				Both	
A/S Products	If applicable list products it is capable of achieving	Contract	Contract	Multi Select Pick List	Regulation up, Regulation down, Spinning Reserve, Non-Spinning Reserve				Both	
Contract type	What form of contract is this?	MCL	Contract	Drop Down	EEI - Master EEI - Confirmation Purchase & Sale Agreement WSPP PPA Service Agreement				Both	

Modifying Document Type	If this contract modifies another contract, what type of modifying document is it?	MCL	Contract	Drop Down	Cover Letter Letter Agreement Amendment Amended and Restated Contract N/A		Both	Need a way of linking this to the contract that it modifies. EEI cover would be linked to all agreements under it. The other options would be linked to the agreement they are modifying.
Form of Security	What form of security has the counter party provided?	Contract	Counterparty	Drop Down	None, Parent Guarantee, Letter of Credit, Surety Bond, Cash		Both	
Development Security Due Date	Date the security must be posted by the Seller	Contract	Contract	Date		x	PPA	
Performance Security Due Date	Date the security must be posted by the Seller	Contract	Contract	Text Field		x	Both	
Total Performance Security Amount	Dollar Amount of Performance Secuirty during PPA operations provided by counterparty	Contract	Contract	Number			Both	
Performance Security Amount Drawn Down	Amount MCE has drawn from LC to pay for damages and other Seller costs	Contract	Contract	Number			Both	
Performance Security Remaining	Calculation	Contract	Contract	Number			"Total Performance Security Amount" - "Performance Security Amount Drawn Down"	Both
Total Development Security Amount	The dollar value of the security provided by the counter party	Contract	Contract	Number				PPA
Devlepmnt Security Amount Drawn Down	Amount MCE has drawn from LC to pay for damages and other Seller costs		Contract	Number				PPA
Development Security Remaining	Calculation		Contract	Number			"Total Deveopment Security Amount" - "Development Security Amount Drawn Down"	PPA
Permitted Delay Days	How many Commercial Operation Delay Days are allowed under the contract?	Contract	Contract	Number				PPA
Force Majeure Delay Days	How many Force Majeure delay days are contemplated in the contract		Contract	Number				PPA
Delay Days Exercised	How many Commercial Operation Delay Days have been used?	Contract	Contract	Number				PPA
Delay Days Remaining	How many delay days are remaining?	Contract	Contract	Number			Should be automatically calculated by Allowable Delay Days - Delay Days Exercised	PPA
Total Penalty Days	How many days is the developer allowed with penalty payments?		Contract	Number				PPA
Notes on Delay Days			Contract	Text Field				PPA
Energy Damage Payment	Amount per unit owed for shortfall	Contract	Contract	Number				Both
Is there a Capacity Damage Payment?	Does the contract contemplate a Capacity Damage Payment?	Contract	Contract	Drop Down	Yes/No			Both
REC Damage Payment	Amount per unit owed for shortfall	Contract	Contract	Text Field				Both
MCE Collateral Threshold	The level beyond which MCE may have to post collatoral	Contract	Counterparty	Number				Both
Counterparty Collateral Threshold	The level beyond which the counterparty may have to post collatoral	???	Counterparty	Number		x		Both
MCE Collateral Cap	Max amount of collatoral that MCE would have to post under the contract	???	Counterparty	Number				Both

% of generator nameplate under Contract	% of generator resource nameplate under contract	Contract	Contract	Number			Both	
Fixed or Variable Contract Price	Does the contract price change by period or over term of the contract?	Contract	Contract	Drop Down	Fixed, Variable		Both	
								contract price can be fixed, annual, monthly (ATC, on/off peak, maybe hourly in the future). This needs to be captured in a settlement table
Energy Contract Price per period	contract price paid to seller for product delivered	Contract	Contract	Number			Both	
Percent Escalator	Percentage the contract escalates annually	Contract	Contract	Number	%		Both	
Test Energy Rate	Price paid for test energy	Contract	Contract	Text Field			PPA	
Test Energy Notes				Text Field			PPA	
Does the contract have an excess energy provision?		Contract	Contract	Drop Down	Yes/No		Both	
Excess Energy Threshold	When does facility reach threshold for energy production to be considered "Excess" under the contract?	Contract	Contract	Text Field			PPA	
								field will calculate if the Actual deliveries have exceeded the Excess Energy Threshold in a contract year
Has Excess Energy Threshold been exceeded?								
Storage Contract Price	Capacity price paid for storage	Contract	Contract	Number	\$/kW-month Day Ahead, Real time, Fifteen Minute, Five minute market		Both	
LMP Settlement Period	Interval on which the project settles		Contract	Drop Down	pNode, SP-15, NP-15, ZP-26, Palo Verde, Mid-C, DLAP		Both	
Delivery Point	Where MCE takes delivery of the energy	Contract	Contract	Drop Down			Both	
Total Notional Value	Total amount to be paid to counterparty under contract	Calculation (MCE)	Contract	Number		Expected Quantity * Price	Both	
Remaining Commitment	Dollar amount of undelivered product under the contract	Contract	Contract	Number		Automatically calculated field by multiply remaining	Both	
Annual Allowed Curtailment Hrs	Total annual allowed curtailable hours in contract	Contract	Contract	Number			PPA	
Curtailment Price	Price at which we will economically curtail the project	??	Contract	Number			PPA	
					List of contract managers. Would need to be able to easily update this list			
MCE Contract Manager	Who is the MCE Contract Manager administering IMCL		Contract	Text Field			Both	
Date MCE Contract Manager Assigned to Contract	What was the initial date that this contract manager was assigned to this contract?	None	Contract	Date			Both	
NDA	Does the contract have an NDA?	Contract Manager	Counterparty	Yes/No			Both	Would like link to NDA if possible

Contract Status	Delivering - contract is currently providing capacity/energy to MCE's portfolio Complete - obligation has been fulfilled. Terminated - contract has been terminated and remaining scheduled volumes will not be filled Pending - contract has been signed but is not yet flowing but is scheduled to as defined by start flow date Inactive - (only applicable for Masters/Covers/Broker Agreements) - contract is dormant for now since there is no "delivering" contract associated with it. Active - (only applicable for Masters/Covers/Broker Agreements) - contract is active w/ delivering contracts associated with it Prospective - contract is not official and is entered for position management needs	Contract	Contract	Drop Down	Delivering Complete Terminated Pending Inactive Active Prospective Operational, Planned, Under Construction		Both	Status should automatically change to reflect if the delivery start date is in the future, currently delivering, or ended.
Project stage	For new build projects, what stage of construction is it in?	Contract	Contract	Drop Down			PPA	
Contract Execution Date	Date contract was fully executed. Should be the last date a contract was signed. If signatures not dated, then use effective date	MCL	Contract	Date		x	Both	
Contract Effective Date	Effective Date Listed on the Contract	Contract	Contract	Date			Both	
Invoice Due Date Terms	What are the due date terms	Contract	Contract	Text Field			Both	
Contract Renewal Notification Date	If MCE must provide notice to renew the contract, what date must notification be provided by?	Contract	Contract	Text Field		x	Both	This is often a yearly date that would repeat. Would love other options to be able to set annual calendar reminder.
Availability Forecast	List date that MCE received the Availability Forecasts	Contract	Contract	Date			Both	
Generation Forecasts	List date that MCE received the generation forecast for the following year	Contract	Contract	Date		x	Both	
Annual Guaranteed Energy Production (GEP) settlement true up	Date when last validation was performed to ensure that contract met the guaranteed energy production (GEP) deliveries under the contract.	Contract	Contract	Date		x	Both	
GEP Performance Measurement Period (PMP) Length	Number of months in performance measurement period for Guaranteed Energy Production Calculation	Contract	Contract	Number			PPA	
GEP % Threshold	% of Expected Energy that must be delivered over PMP in order to meet Guaranteed Energy Production defined in contract	Contract	Number	Number			PPA	
% of Expected Energy in current PMP	Calculated field that shows the % of Expected Energy that has been Delivered during the current PMP period	Contract	Number	Number			PPA	Would like this to be a calculated field if possible.
Progress Reports	Project development status report	Contract	Contract	Date		x	PPA	Would like this to be a running list of dates that progress reports were received, ideally with link to progress report document
Single Line Diagram Received	Have we received the Single Line Diagram?	Contract	Contract	Date			PPA	
Site Plan Received	Have we received the Site Plan?	Contract	Contract	Date			PPA	

Guaranteed Storage Availability	% of availability guaranteed by storage	Contract	Contract	Number	Percentage		x	PPA	
Expected Construction Start Date	Expected date of construction notice to proceed	Contract	Contract	Date				PPA	
Expected Commercial Operation Date	Expected future COD Date Means the date set forth in the deliverability Section of the Cover Sheet, which is the date the Facility is expected to achieve Full Capacity Deliverability Status.	Contract	Contract	Date				PPA	
Expected FCDS Date		Contract	Contract	Date				PPA	
Current Expected FCDS Date	If different than the Expected FCDS date in the PPA, please list the new expected date here.	Contract	Contract	Date				PPA	
Guaranteed Construction Start Date	Guaranteed Commercial Operation Date, as such date may be extended by the Development Cure Period	Contract	Contract	Date				PPA	
Guaranteed Commercial Operation Date		Contract	Contract	Date				PPA	
Guaranteed FCDS Date	Guaranteed FCDS Date, as such date may be extended by the Development Cure Period	Contract	Contract	Date				PPA	
Actual Construction Start Date	Actual date of construction notice to proceed	Contract	Contract	Date				PPA	
Actual Commercial Operation Date	Actual COD date once it has been achieved	Contract	Contract	Date				PPA	
Actual FCDS Date	Actual date FCDS Achieved. Usually noted in CAISO COD documentation	Contract	Contract	Date		PPA			
Actual Expiration Date	The expiration date of the contract if it varies from	Contract	Contract	Date		PPA			
Actual Interconnection COD	Actual date project receives PTO from the utility	Contract	Contract	Date		PPA			
Delivery Start Date	What is the first date that product can be delivered?	MCL	Contract	Date		x	EEI		
Guaranteed Expiration Date	What is the last date that product can be delivered?	MCL	Contract	Date		x	Both		
Counterparty	Legal counterparty name that executes the contract	MCL	Counterparty	Text Field			Both		
Counterparty Parent Company Associated with Credit Rating	Name of parent company if applicable (usually developer)	Contract	Counterparty	Text Field			Both		
			Contract	Text Field	Aaa Aa1 Aa2 Aa3 A1 A2 A3 Baa1 Baa2 Baa3 AAA AA+ AA AA- A+ A A- BBB+ BBB BBB-			Phase 2: Ability to determine collateral requirements as a function of credit rating by counterparty for existing and prospective deals	
Moody's Credit Rating	Credit rating of counter party, or parent (if parental guarantee)	???	Counterparty	Drop Down			Both		
S&P Credit Rating	Credit rating of counter party, or parent (if parental guarantee)	???	Counterparty	Drop Down			Both		

Fitch Credit Rating	Credit rating of counter party, or parent (if parental guarantee)	???	Counterparty	Drop Down	AAA AA+ AA AA- A+ A A- BBB+ BBB BBB-		Both	
Counterparty Contact Manager	Who is MCE's main counterparty contact for this contract?	Contract	Contract	Short Text			Both	Need to capture First and Last Name, Title, Email Address, Phone Number
Counterparty Settlement Contact	Who is MCE's main point of contact for settlement and billing issues for this contract?	Contract	Contract	Text Field			Both	Need to capture First and Last Name, Title, Email Address, Phone Number
Counterparty Notices Contact	Where does MCE need to send official notices for this contract?	Contract	Contract	Text Field			Both	Need to capture First and Last Name, Title, Email Address, Phone Number, and mailing address
Counterparty Scheduling Contact	Who does MCE contact regarding scheduling issues?	Contract	Contract	Text Field			Both	Need to capture First and Last Name, Title, Email Address, Phone Number, and mailing address
Counterparty Credit and Collections Contact	Where does MCE need to send official notices for this contract?	Contract	Contract	Text Field			Both	Need to capture First and Last Name, Title, Email Address, Phone Number, and mailing address
How Must Notices be Sent?	Note all methods that notices can be sent by?	Contract	Contract	Multi Pick List	Email, Fax, Mail		Both	
Generation or Storage Facility	Is this Facility an energy generator or storage facility? Or both?	Contract	Resource	Multi Select Pick List	Generator, Storage		Both	General note that we need the ability to nadd numerous resources under one contract
Net Dependable Capacity (Pmax)	what is the Net Dependable Capacity of generator resource as listed by CAISO	Contract	Resource	Number			Both	
Nameplate Rating	Nameplate Rating of the Generator	Contract	Resource	Number			Both	
Resource Street Address	Location of generating resource	Contract	Resource	Address			Both	
Resource City	Location of generating resource	Contract	Resource	Address			Both	
Resource County	Location of generating resource	Contract	Resource	Address			Both	
Resource State	Location of generating resource	Contract	Resource	Address			Both	
Resource Zip Code	Location of generating resource	Contract	Resource	Address			Both	
Latitude	What is latitude of the resource?	???	Resource	Number			Both	
Longitude	What is longitude of the resource?	???	Resource	Number			Both	
CAISO Electric Region	What CAISO Electric Region is this resource located in?	???	Resource	Drop Down	NP-15, ZP-26, SP-15, Non-CAISO Area		Both	

							Is it possible to pull list of options from CAISO database? Ideal for data consistency and to link to database so always have up to date list.
CAISO Resource ID	What is the CAISO Resource ID assigned to this generator?	???	Resource	Text Field		Both	
CEC RPS ID	RPS facility ID assigned by CEC	???	Resource	Text Field		Both	
CEC Resource Name	What is the CEC Resource Name for this resource?	???	Resource	Text Field		Both	
WREGIS ID	What is the WREGIS ID for this resource?	???	Resource	Text Field		Both	
CARB ID	What is the CARB ID for the resource?	???	Resource	Text Field		Both	
EIA-923 Name	US Energy Information Administration resource name	???	Resource	Text Field		Both	
EIA Plant ID#	US Energy Information Administration resource ID	???	Resource	Text Field		Both	
Generator Pnode	What is the pricing node assigned to this resource (if specified source)	???	Resource	Text Field		Both	
POI Substation/Switchyard	Where is the POI substation for the project?	Contract	Resource	Text Field		PPA	
Emission Factor	emission intensity of the resource providing the energy for the contract of interest units will be in MT CO2/MWh	???	Resource	Number		Both	
NQC Value by month	varies by month	CAISO (publishes each year)	Resource	Number		Both	Need table to break out by resource and month
Who Schedules the Resource?	Does MCE or the counterparty schedule the resources with the CAISO?	Contract	Resource	Drop Down		Both	
Contractual Deliverability Status	Deliverability of the Resource as required under the contract	Counterparty	Resource	Drop Down		PPA	
Current Deliverability Status	Current status of deliverability of resource		Resource	Drop Down		PPA	

Interconnecting Utility	What is the interconnecting utility for the resource?	Contract	Resource	Drop Down		PPA	Would like list of CA utilities with ability to easily add new utilities if out of state
Interconnection Level	What level of the transmission grid is the project interconnecting into?	Contract	Resource	Drop down	transmission/distri bution	PPA	
Highest Level of Interconnection Achieved	What is the highest level of interconnection progress achieved by the project?	Contract	Resource	Drop Down	Interconnection Application Filed, Phase I Study, Phase II Study, LGIA executed	PPA	
Interconnection Queue Position	What is the interconnection queue position? Please itentify which entity the queue positoin is with (CAISO, PG&E, SCE)	Contract Manager	Resource	Text Field		PPA	
Site Control	What type of site control does the developer have?	Contract	Contract	Drop Down	Lease/Own/Option	PPA	
Zoning Has project obtained Conditional User Permit?	What is the AHJ zoning for the proposed generatic	Contract	Contract	Drop Down	Brownfield, Greenfield, Other	PPA	
			Resource	Drop Down	Yes/No	PPA	
Resource Status	Is this resource a New Build, Existing, or a Re-Power	Contract	Resource	Drop Down	New Build, Existing Resource, Re-power	PPA	
MCE Service Territory	is this located inside MCE service territory	Contract	Resource	Drop Down	TRUE FALSE	Both	ideally this is done on an automated basis based on project location
Storage Technology	What technology is the battery storage?	Contract	Resource	Text Field		Both	Would like drop down with available options and ability to easily add new type as they come up
ACS Supplier	Name of Asset Controlling Supplier	Contract	Resource	Drop Down	Bonneville Power Administration (BPA), Powerex, Tacoma Power	Both	
ACS CARB Emission Factor	CARB emission factor associated with ACS supplier	???	Resource			Both	Should Auto populate as attribute of ACS Supplier. Do we want to combine this with other "Emmission Factor" field?

					AESO, AVA, AZPS, BANC, BCHA, BPAT, CFE, CHPD, CISO,DEAA, DOPD, EPE, GCPD, GRID, GRIF, GRMA, GWA, HGMA, IID, IPCO, LDWP, NEVP, NWMT, PACE, PACW, PGE, PNM, PSCO, PSEI, SCL, SRP, TEPC, TIDC, TPWR, WACM, WALC, WAUW, WWA		
Balancing Authority	What balancing authority is project inteconnected into?	Contract	Resource	Drop Down			Both
Energy Storage Duration	Hours of storage per MW	Contract	Resource	Number	Number of hours		PPA
Energy Storage Max Level	Max capacity (MWh)	Contract	Resource	Number	MWh		PPA
Energy Storage Min Level	Min capacity (MWh)	Contract	Resource	Number	MWh		PPA
Energy Storage Max RTE	Max RTE	Contract	Resource	Number	Percentage		PPA
Energy Storage Min RTE	Min RTE	Contract	Resource	Number	Percentage		PPA
Energy Storage Cycling Limit	Cycles allowed per year	Contract	Contract	Number	Cycles/day		PPA
					Biogas: Digester gas Biogas: Landfill gas Biodiesel Muni Solid Waste Geothermal Small Hydro Conduit Hydro Water supply and conveyance Solar PV Solar Thermal Wind Ocean wave Ocean thermal Tidal current Fuel Cells Asset Controlling Supplier (ACS) Large Hydro Nuclear NG CT NG CCGT Coal		
Generation Technology	for the commodity being delivered, what deal type is it	Master Contract List	Resource	Multi Select Pick List			Both
Pollinator Habitat	Has the developer committed to a pollinator friendly project?	Contract Manager	Counterparty	Yes/No	Yes/No		PPA
VER Forecast Used?	What VER forecast is used to schedule this resource?	Contract	Contract	Pick List	Seller, CAISO		Both
Estimated Labor Hours	Estimated number of labor hours associated with the development of this project	Labor Hours Tracker	Contract	Number			PPA
Actual Labor Hours	Actual number of labor hours to date.	Labor Hours Tracker	Contract	Number			PPA
6 Month Jobs (Total Hr/1040)	Actual labor hours divided by 1040	Labor Hours Tracker	Contract	Number		Actual labor hours divided by 1040	PPA
Actual Union Hours	Actual Union Hours to Date	Labor Hours Tracker	Contract	Number			PPA

Labor Hour Notes	General notes on Labor Hours	Labor Hours Tracker	Contract	Text Field		PPA	
Is this seller certified under GO 156?		Labor Hours Tracker	Counterparty	Drop Down		PPA	
Percent Local Hire	% of labor that will be locally hired	Contract / Contract Manager	Counterparty / Contract	Percentage		PPA	
Prevailing Wage Commitment	Does the project have a prevailing wage commitment?	Contract / Contract Manager	Counterparty / Contract	Yes/No	Yes/No	PPA	
Diversity Reporting Completed	Has the developer completed their diversity report?	Contract Manager	Counterparty	Date	Date Field	PPA	
Job Training or other programs	Has the developer committed to job training for the project? If yes, please note training commitment in Labor Notes	Contract Manager	Counterparty	Yes/No	Yes/No	PPA	Should be automatically calculated off of the Delivery Start and End dates
Delivery Term	Length of contracted deliveries in years		Contract	Number			
Date Last Generation Profile Received	Date MCE received the most recent generation profile from counterparty. Updated delivery profile should be received around every October.	Invoice Tracker	Contract	Date		Both	
Contract Shape	What is the delivery shape?	Contract	Contract	Drop Down	Fixed shape, unit contingent, block - on-peak, block-off peak, block- super peak	Both	We need a table format
Guaranteed Energy Production	This field shows the % of guaranteed energy production over PMP. If it is above the GEP threshold for the PMP, then not damages are owed.	Contract	Contract	Number	NP15 SP15 DLAP Mid-C Mead Palo Malin	Both	Calculated Field GEP Calculation Formula: (Delivered Energy) / (Guaranteed Energy) >= PMP Length Performance Measurement Period (PMP)= The rolling most recent XXX month consecutive calendar period during the PPA term
Forward Curve LMP Node Name	Assigned forward curve to estimate expected value of contract on a going-forward basis	???	Contract	Drop Down		Both	
Contracted MWh by month/year	Expected Annual Deliveries under a PPA and Firm deliveries under an EEI.	Invoice Tracker	Contract	Number		Both	Need a table that shows contracted volumes of deliveries. Need ability to categorize volumes as Firm, Unit Contingent, or Sellers Choice Need a table that shows actual monthly deliveries for the term of the contract as well as annual sum of deliveries
Actual MWh by month/year	Actual Delivered Month MWh of Energy	Invoice Tracker	Contract	Number		Both	

Forecasted MWh by month/year	Forecast of energy deliveries by month/year		Contract	Number				Both	
Expected Delivery Shortfall?			Contract	Drop Down	Yes, No			Both	Should automatically be marked as yes/no if the actual + forecasted deliveries for the year fall below the contracted volumes for the year
Delivery shortfall amount			Contract	Number				Both	Should be calculated as the Contracted Annual Deliveries - (Forecasted / Actual annual deliveries)
WREGIS REC Deliveries by month/year	RECs delivered into MCEs account	None	Contract	Number				Both	We need to track REC deliveries in WREGIS by month, year
Annual Delivery Notes	To comment on annual deliveries of energy and RECs	Contract	Contract	Text Field				Both	
Percent of Expected Energy Over Contract Year			Contract	Number	%			Both	
Energy Delivery Profile	8760, 12 x 24 delivery profile		Contract	Number				Both	Need table that shows expected delivery profile of the contract
% of Forecasted Volume that has been delivered	On a portfolio level, how much of forecasted volume has been delivered for calendar year?		Contract	Number					This would likely need to be a report that is created.



October 1, 2020

TO: MCE Technical Committee

FROM: CB Hall, Sr. Power Procurement Manager
Jenna Famular, Marketing and Communications Manager

RE: MCE 2021 Operational Integrated Resource Plan (Agenda Item #06)

ATTACHMENT: MCE 2021 Operational Integrated Resource Plan

Dear Technical Committee Members:

MCE's Operational Integrated Resource Plan ("OIRP") is intended to articulate the energy procurement targets adopted by MCE's Board of Directors ("Board") and serves as a guideline to MCE staff regarding day-to-day operations and long-term portfolio planning and procurement activities. Your Board first approved MCE's ten-year resource plan in Chapter 6 ("Load Forecast and Resource Plan") of the Community Choice Aggregation Implementation Plan and Statement of Intent ("Implementation Plan"), dated January 2010. Regular updates to MCE's resource plans have been approved by your Board via subsequent revisions of the Implementation Plan and, since November 2012, annual OIRP updates. In May 2016, your Board delegated authority to approve OIRP updates to the Technical Committee via approval of the "Technical Committee Overview."

The OIRP has four primary purposes:

1. Quantify resource needs, in conjunction with load expectations, over the Planning Period;
2. Prioritize resource preferences and articulate energy procurement policies;
3. Provide guidance to the energy procurement processes undertaken by MCE staff;
4. Communicate MCE's resource planning objectives and framework to the public and key stakeholders.

MCE's 2021 OIRP has a planning period of 2021 through 2030, and takes into account numerous dimensions including the following:

- Load forecasts based on the number and types of customers, potential service territory expansions, opt-out rates, electrification trends, demand-side resources, and weather;
- Renewables and emissions targets;

- Agency-wide budgetary considerations and customer rate implications;
- Long-term contracting requirements and goals for new steel in the ground;
- Grid reliability needs and capacity requirements;
- Market price hedging needs;
- Goals for local resources, local resiliency and local workforce development; and
- Goals for more equitable communities.

The OIRP translates these broad policy objectives into more specific planning elements focused on the use of various resource types, taking into consideration MCE's projected customer needs and MCE's existing resource commitments. The OIRP identifies:

1. Projected customer demand and energy needs, specifically those for renewable and large hydroelectric/Asset Controlling Supply ("ACS") energy, as well as needs for fixed-price forward contracts and Resource Adequacy, over the Planning Period;
2. Estimated deliveries from contracted resources that will fill portions of these needs;
3. Subsequent "open positions" that result from the difference between future needs and commitments from currently contracted resources; these open positions dictate the timing and magnitude of additional procurement that may be required to meet specified resource goals; and
4. To the extent that open positions exist, the OIRP describes the procurement methods and guidelines that MCE will utilize to meet them.

MCE's OIRP is well-aligned with the biennial Integrated Resource Plan submitted to the California Public Utilities Commission for certification pursuant to Cal. Pub. Util. Code Section 454.52(b)(3) ("Compliance IRP"). These two IRPs are developed concurrently, in even years, and reflect consistent long-term procurement planning strategies and goals. Consistent with California law (more specifically, Sections 366.2(a)(5) and 454.52 (b)(3)), MCE's procurement is governed by MCE's board and must be consistent with the board-adopted mandates in MCE's OIRP.

MCE's OIRP is updated annually, typically in the fall – after summer's procurement activities have concluded and in anticipation of the following year's procurement.

Brief Summary of Changes:

The 2021 OIRP is provided as an attachment to this report. It includes a refreshed Executive Summary that is more user-friendly and readable for a broader audience, it introduces a new Chapter that explains MCE's Integrated Resource Planning processes, and it moves regulatory detail and other background information to three new appendices. The OIRP is based on an updated customer load forecast that takes into account increasing activity behind the meter as well as a refreshed snapshot of MCE's power supply portfolio. It highlights MCE's work to reinvest in community programs and services, including our new Energy Storage Program, Workforce, Education & Training Program, and increased focus on vulnerable customer populations including those in disadvantaged communities.

The 2021 OIRP affirms MCE's goal of providing 100% of its Light Green portfolio with renewables, large hydroelectric and ACS energy by 2022, and 85% of its Light Green portfolio with renewables by 2029. It also affirms MCE's goal for such renewables to be comprised entirely of Portfolio Content Category 1 ("PCC 1") products by 2022, in order to mitigate the GHG impacts of Assembly Bill 1110 on PCC 2 product. However, the 2021 OIRP clarifies that MCE's 2022 goal for the Light Green portfolio equates to a 95% GHG-Free metric, not a 99% GHG-Free metric. This adjustment has been made to provide MCE with more flexibility to procure geothermal, biogas and ACS energy, all of which come with a relatively small amount of emissions.

MCE's 2021 OIRP highlights MCE's plan to procure 585 MW of wholesale (i.e., front of the meter) storage over the next ten years, with 300 MW of this storage coupled directly with solar and the remaining 285 MW configured as stand-alone (i.e., grid-charged). Of the stand-alone storage, MCE expects to procure 45 MW of long-duration resources that can discharge at full capacity for at least eight hours. On a related note, the OIRP also highlights MCE's plan to structure a Resource Adequacy portfolio by 2030 with non-fossil resources comprising 50% of the Net Qualifying Capacity.

Recommendation:

Approve MCE's 2021 Operational Integrated Resource Plan.



Operational Integrated Resource Plan 2021- 2030

Published October 2, 2020

A DECADE OF CHOICE AND COMMUNITY POWER



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I. Executive Summary

As California's first Community Choice Aggregation (CCA) program, MCE is a groundbreaking, not-for-profit, public agency that has been setting the standard for energy innovation in its communities since 2010. MCE offers clean energy at stable rates, significantly reducing energy-related greenhouse gas (GHG) emissions and enabling millions of dollars of reinvestment in local energy programs. MCE is a load-serving entity that provides for more than 1,200 MW of peak load. MCE provides electricity service to more than 480,000 customer accounts and more than one million residents and businesses in 34 member communities across four Bay Area counties: Contra Costa, Napa, Marin and Solano. For more information about MCE, visit mceCleanEnergy.org.

MCE's mission is to address climate change by reducing energy-related GHG emissions with clean energy and energy efficiency at cost-competitive rates while offering economic and workforce benefits, and creating more equitable communities.

MCE provides service to approximately 86% of eligible electricity customers within its service area and is the default electric generation provider for any new or relocated customers therein.

Figure 1: MCE Service Area, including new communities receiving MCE service in 2021

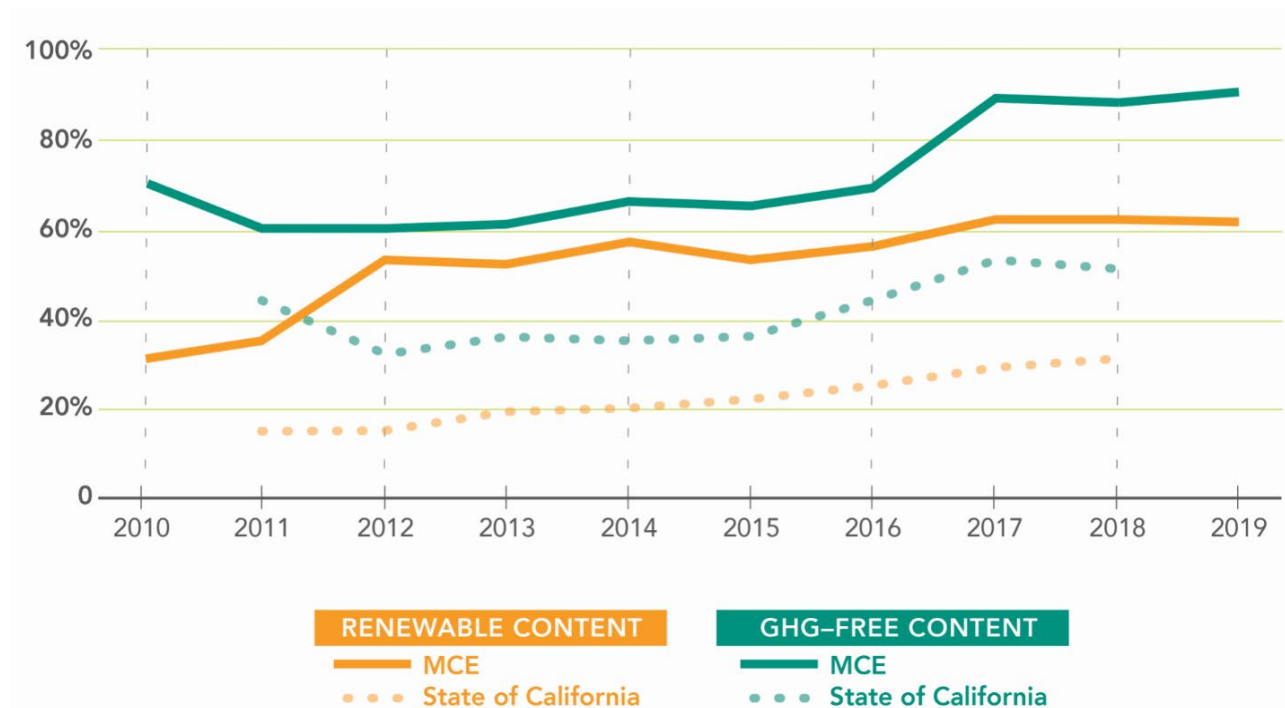


MCE Energy Services

MCE's standard service, [Light Green](#), currently represents 97.6% of MCE customer accounts and has been comprised of at least 60% renewable energy since 2017, meeting state goals 13 years ahead of schedule (see Figure 2). Light Green will ramp up to 85% renewable energy by 2029 and is on track to become 95% GHG-free by 2022 (see Table 1).

MCE offers two 100% renewable service options: [Deep Green](#), sourced solely from California wind and solar energy and representing 2.4% of MCE accounts; and [Local Sol](#), sourced exclusively from local solar energy produced from within MCE's service area and representing 0.04% of MCE accounts.

Figure 2: MCE Trendline for Renewable and GHG-Free Content¹



MCE Programs

MCE offers a suite of customer programs to incentivize local renewable energy development, grow the clean energy economy, and support energy equity across its communities. These programs include the energy storage program, electric vehicle charging and income-qualified electric vehicle rebates, income-qualified solar rebates, and energy efficiency services. These programs have:

- Created a \$6 million [resiliency](#) fund to help mitigate the impacts of grid outages threatening the community's safety, health, and welfare, and disproportionately affecting vulnerable populations;
- Offered \$2.44 million in [energy efficiency](#) rebates;

¹ As reported to the California Energy Commission via the Power Source Disclosure Program

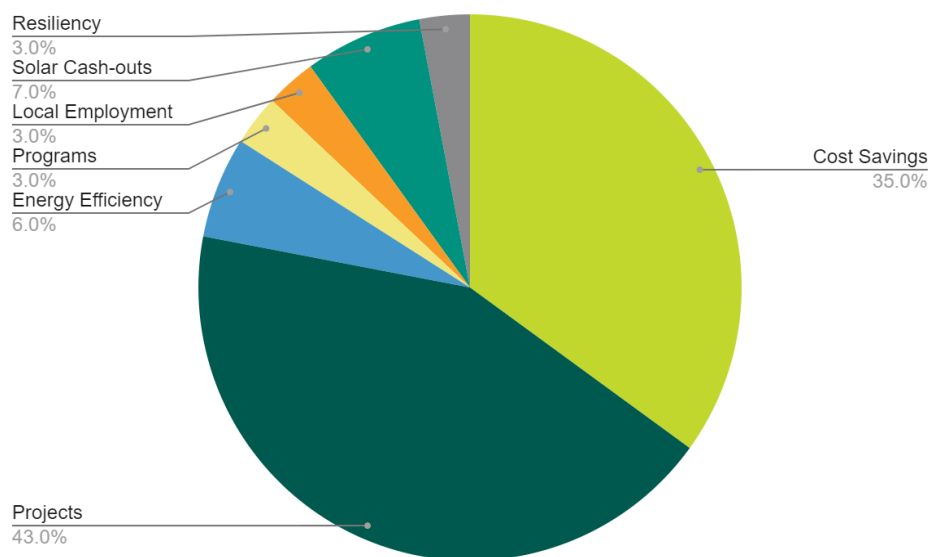
- Procured 35 MW of new renewable projects in MCE's service area including [MCE Solar Charge](#), an 80-kilowatt solar carport system at MCE's San Rafael office with ten Level 2 electric vehicle charging ports available to MCE staff and the public;
- Allocated \$725,000 for [solar rebates](#) since 2012 toward 287 income-qualified solar installations equal to 800 kW;
- [Distributed 100 portable, off-grid batteries](#) in partnership with regional Centers for Independent Living at no cost to recipients;
- Provided funding for [more than 1,000 electric vehicle charging ports](#) throughout MCE's service area; and
- Provided [rebates](#) for homeowners of properties destroyed in the 2017 and 2018 Napa County fires to include energy efficiency and electrification measures in their new homes.

MCE has been [committed to environmental justice](#) since its founding in 2010, and continues to work with member communities to advance equity through tailored programs and services. [MCE's Sustainable Workforce and Diversity Policy](#) focuses on creating equitable clean energy jobs and builds on [MCE's Feed-In Tariff \(FIT\) and FIT Plus program](#) requirements for 50% local hire and prevailing wages. These programs have:

- Contributed \$81 million in local renewable energy development;
- Invested more than \$440,000 directly into [workforce development](#) in MCE's service area;
- Supported more than 2,250 work hours and trained 60 individuals; and
- Generated [strong community partnerships](#) with workforce development agencies such as RichmondBUILD, Marin City Community Development Corporation, Rising Sun Energy Center, Future Build, and North Bay Workforce Alliance.

Overall, MCE has contributed more than \$180 million in community reinvestment through local renewable energy projects (\$81.6 million), cost savings (\$68 million), solar cash-outs (\$12.8 million), energy efficiency (\$11.7 million), energy resiliency (\$6.75 million), customer programs (\$5.3 million), and local employment and vendor contracts (\$5.3 million).

Figure 3: MCE Local Reinvestment by Category



MCE Energy Procurement

In 2019, MCE procured approximately 5.4 million MWh of electricity for its customers.² MCE is projecting that its 2030 loss-adjusted load will be approximately 5.7 million MWh. MCE anticipates that 98% of its total 2021 retail sales will be sourced from renewables, large hydroelectric,³ and Asset Controlling Supplier (ACS) energy.⁴ As mentioned above and as shown in Table 1, MCE's Light Green service option is expected to be 95% GHG-free by 2022, and will also ramp up to 85% renewable energy by 2029. MCE's procurement strategy through 2030 includes:

- Procuring 2.8 million MWh of new California renewables on an annual basis by 2030, via contracts with terms of 10 years or more. This 2.8 million MWh will be in addition to the 1.9 million MWh of annual generation from 677 MW of new California renewables that MCE has already procured;
- Helping develop 585 MW of wholesale storage capacity to complement MCE's renewable energy procurement with;
 - 300 MW of storage paired directly with renewables;
 - 285 MW of stand-alone storage, including 45 MW of long-duration resources that can discharge at full capacity for at least eight hours; and
- Targeting a 2030 Resource Adequacy portfolio with non-fossil resources comprising 50% of the Net Qualifying Capacity.

Table 1: MCE Light Green Portfolio Targets⁵

10-Year Light Green Portfolio Targets (%)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
PCC1 Renewable	56%	60%	60%	60%	65%	70%	75%	80%	85%	85%
PCC2 Renewable	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Large Hydro + ACS	38%	40%	40%	40%	35%	30%	25%	20%	15%	15%
Total Renewable	60%	60%	60%	60%	65%	70%	75%	80%	85%	85%
Total Renewable + Large Hydro + ACS	98%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GHG-Free Equivalent	90%	95%	95%	95%	95%	95%	95%	95%	95%	95%

MCE's Equity Commitment

MCE is dedicated to reducing pollution impacts and encouraging the development, health, and prosperity of disadvantaged communities (DACs) within and outside our service area. This commitment is reflected in:

² In 2019, MCE provided its customers with 5,136,159 MWh of retail electricity, as measured at the customer meters, but MCE is also responsible for procuring the electricity that is lost to the distribution system. For this reason, MCE must procure towards its "loss-adjusted load," which is approximately 106% of its retail sales.

³ Large hydroelectric resources are greater than 30 MW. While such resources provide GHG-free power, they do not qualify as renewable power that can be used to meet California's Renewables Portfolio Standard (RPS) requirements, per the California Energy Commission's RPS Eligibility Guidebook.

⁴ Asset Controlling Supplier (ACS) energy is primarily large hydroelectric energy from the Pacific Northwest, but it also contains relatively small amounts of nuclear energy and unspecified system energy.

⁵ With respect to Table 1 overall: actual content percentages may differ from projections if resource availability or market conditions preclude cost-effective procurement or if annual load comes in higher or lower than expected. With respect to MCE's Light Green "GHG-Free Equivalent" metric, beginning with MCE's 2020 results, this percentage will be derived as follows: [MCE Light Green MT CO₂e, per CEC Power Content Label] / [(MWh of MCE Light Green Retail Sales) x (0.428 MT CO₂e/MWh)]. For reference, 0.428 MT CO₂e/MWh is the emissions factor for unspecified electricity, per the California Air Resources Board.

- Strategic recruiting and hiring practices such as targeted job postings, partnerships with community-based organizations (CBOs), education and employment organizations, physical attendance at job recruitment fairs, and blind résumé reviews;
- Partnerships with CBOs including schools and programs in support of underserved and vulnerable individuals; and
- MCE's programs described in Chapters III and IV including:
 - [Behind the meter energy storage and resilience](#);
 - [Disadvantaged Community Solar Program](#);
 - [Community Power Coalition](#);
 - [Sustainable Workforce and Diversity Policy](#);
 - [Workforce Education & Training Program](#); and
 - [Supplier Diversity](#).

II. Introduction to Integrated Resource Planning

MCE was formed for the express purpose of empowering its member communities to choose the resources (supply-side and demand-side) that reflect their specific values and needs. Member community values and needs are reflected in a number of procurement principles, goals, targets, and directives reviewed and adopted by MCE's governing Board via MCE's Operational Integrated Resource Plan (OIRP). Since 2014, MCE has prepared an annual OIRP that documents MCE's load and resource objectives over the upcoming ten-year planning period. MCE's 2021 OIRP (this specific document) has a planning period of 2021 through 2030, and takes into account numerous dimensions including the following:

- Load forecasts based on the number and types of customers, potential service territory expansions, opt-out rates, electrification trends, demand-side resources, and weather;
- Renewables and emissions targets;
- Agency-wide budgetary considerations and customer rate implications;
- Long-term contracting requirements and goals for new steel in the ground;
- Grid reliability needs and capacity requirements;
- Market price hedging needs;
- Goals for local resources, local resiliency and local workforce development; and
- Goals for more equitable communities.

MCE's OIRP is updated by staff annually and submitted for approval to MCE's Technical Committee, which includes a subset of MCE Board members. Approval is made in consideration of applicable regulatory requirements, MCE's resource planning policies, energy market conditions, anticipated changes in electricity consumption, planned inclusion of new member communities, ongoing procurement activities, and any other considerations that may affect the manner in which MCE carries out its resource planning activities.

MCE's OIRP has four primary purposes:

- To quantify resource needs,⁶ in conjunction with load expectations, over the Planning Period;
- To prioritize resource preferences and articulate relevant energy procurement policies;
- To provide guidance to the energy procurement processes undertaken by MCE staff;
- To communicate MCE's resource planning objectives and framework to the public and key stakeholders.

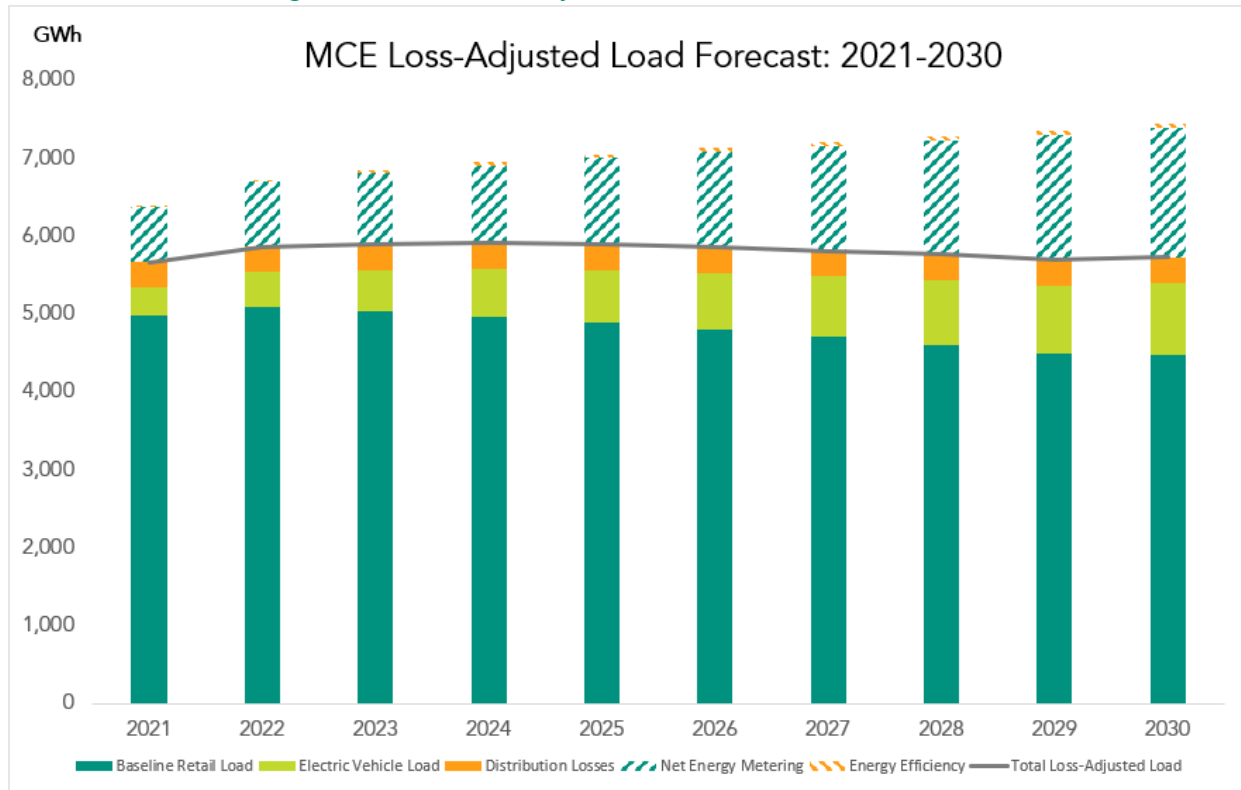
MCE's OIRP is well-aligned with the biennial Integrated Resource Plan submitted to the California Public Utilities Commission for certification pursuant to Cal. Pub. Util. Code Section 454.52(b)(3) ("Compliance IRP"). These two IRPs are developed concurrently, in even years, and reflect consistent long-term procurement planning strategies and goals. Consistent with California law (more specifically, Sections 366.2(a)(5) and 454.52 (b)(3)), MCE's procurement is governed by MCE's Board and must be consistent with the Board-adopted mandates in MCE's OIRP.

⁶ Within this OIRP, resources include renewable energy, large hydroelectric energy, Asset Controlling Supplier energy, energy storage, Resource Adequacy, hedges against CAISO load payments, behind-the-meter generation and/or storage, demand response, and energy efficiency.

III. MCE Customers and Load Forecast

MCE's long-term load forecast is a 10-year projection of the energy (reflected in MWh) that its customers will annually consume. MCE's long-term load forecast is driven primarily by the number and types of customers that MCE expects to serve, in conjunction with weather projections. MCE's long-term load forecast also incorporates the load-modifying effects of electric vehicles, behind the meter solar and/or storage (via net energy metering), and energy efficiency. The forecast is also adjusted to incorporate the power that MCE expects to lose to the distribution system. Figure 4 shows MCE's loss-adjusted load forecast for the planning period, with net energy metering and energy efficiency shown above the line to represent what MCE's load would have been without these important demand-side resources.

Figure 4: MCE Loss-Adjusted Load Forecast, 2021-2030⁷



Enrolled Customers

MCE has been serving customers since 2010, and now supports a peak load of approximately 1,200 MW. MCE provides electricity service to more than 480,000 customer accounts and more than one million residents and businesses in 34 member communities across four Bay Area counties: Contra Costa, Napa, Marin, and Solano. MCE has an average customer participation rate of 86.2% across its service area and a Deep Green participation rate of 2.4%. For additional information on MCE's customer enrollment by customer account and load, please see Figure 5. Figures 6 and 7 provide a breakdown of customer enrollment rates by community.

⁷ MCE is responsible for procuring the electricity that is lost to the distribution system. For this reason, MCE must procure towards its "loss-adjusted load," which is approximately 106% of its retail sales.

The scope of this IRP is limited to MCE's Board-approved service area. In accordance with Policy No. 007 - New Customer Communities, MCE may include additional communities that request service during the Planning Period. Any specific resource planning impacts related to future inclusion of additional member communities would be addressed by MCE's Board of Directors prior to the completion of such processes and incorporated into future IRPs. For a list of MCE's enrollment phases please refer to [Appendix B](#) at the end of this document.

Figure 5: MCE Customer Accounts and Load

MCE Customers at a Glance – Accounts
As of July 1, 2020



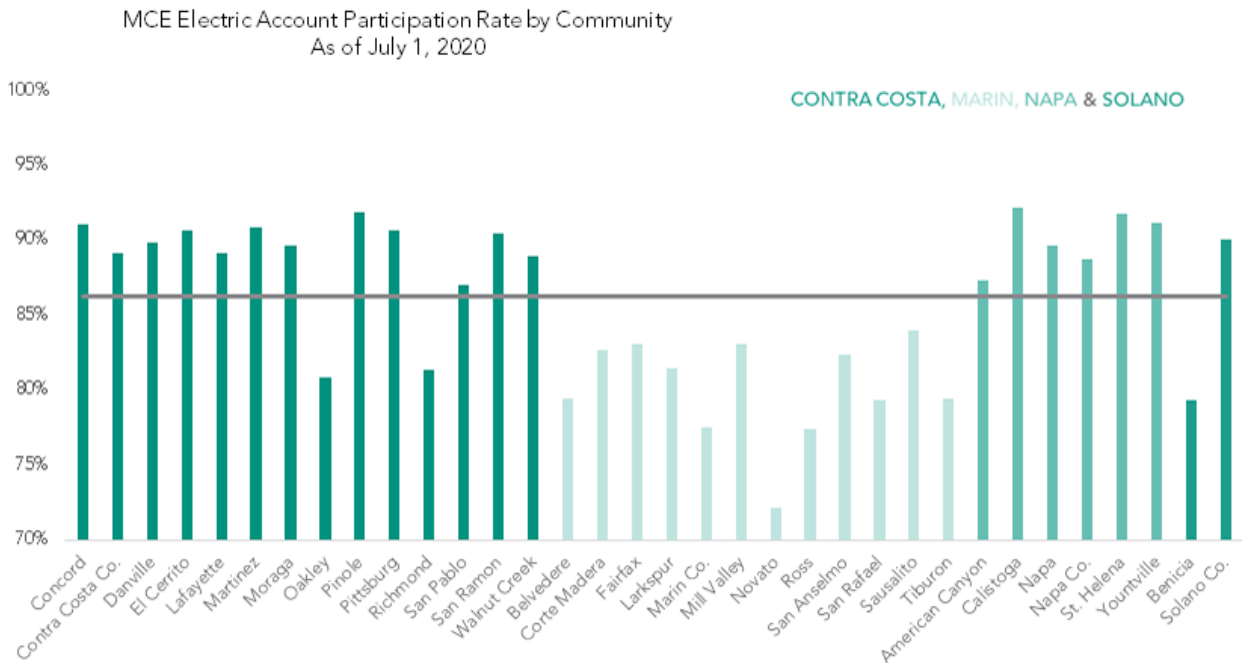
MCE Customers at a Glance – Load
As of July 1, 2020



Figure 6: MCE Deep Green Participation Rates



Figure 7: MCE Overall Participation Rates



Baseline Customer and Consumption Forecast

MCE’s electricity demand forecast starts with a forecast of customers by end-use classification (residential, commercial, etc.). Monthly energy consumption estimates, derived from historical data, are applied to yield a monthly energy forecast by customer class. Hourly class-specific load profiles are then used to break down the monthly energy forecast into more granular time-of-use and peak demand values. As mentioned above, MCE makes adjustments to the forecast to account for the load impacts of electric vehicle (EV) charging, net energy metering, and energy efficiency.

Customer Energy Choices

MCE offers customers three energy choices (described in Table 2 below). Light Green is MCE’s standard service, offering a minimum of 60% renewable electricity to the bulk of MCE’s customers. Deep Green offers customers 100% California renewable energy, half from wind resources and half from solar resources. Local Sol offers a second 100% renewable energy option (all solar) for those who would prefer to purchase power from within MCE’s service area.

Table 2: MCE Customer Energy Choices

LIGHT GREEN SERVICE	
Default Option 97.6% of MCE accounts, 96.4% of load	<ul style="list-style-type: none">Minimum 60% RPS-qualifying renewable energyAlso contains large hydroelectric energy, ACS energy, and CAISO system power
DEEP GREEN SERVICE	
Opt Up Option 2.4% of MCE accounts, 3.6% of load	<ul style="list-style-type: none">100% RPS-qualifying renewable energy (California solar and wind only)Half of the premium charged to customers is allocated to MCE’s Local Renewable Energy and Program Development Fund
25 of MCE’s member municipalities have chosen to enroll in MCE Deep Green	

LOCAL SOL SERVICE

Opt Up Option
0.04% of MCE accounts, 0.02% of load

- Established in 2014, began serving customers in 2017
- 100% locally sourced solar from the Cooley Quarry project in Novato, CA
- ~300 customer capacity of 2,885 MWH/year

Figure 8: MCE's 2019 Electric Power Generation Mix⁸

2019 Electric Power Generation Mix*

Specific Purchases	Percent of Total Retail Sales (kWh)		
	MCE Light Green	MCE Deep Green	MCE Local Sol
Renewable	60%	100%	100%
Biomass & Biowaste	2%	0%	0%
Geothermal	3%	0%	0%
Eligible Hydroelectric	6%	0%	0%
Solar	20%	50%	100%
Wind	29%	50%	0%
Coal	0%	0%	0%
Large Hydroelectric	29%	0%	0%
Natural Gas	0%	0%	0%
Nuclear	1%	0%	0%
Other	0%	0%	0%
Unspecified Sources of Power**	10%	0%	0%
Total	100%	100%	100%

*As reported to the California Energy Commission's Power Source Disclosure Program. MCE and PG&E data is subject to an independent audit and verification that will not be completed until October 1, 2020. The figures above may not sum up to 100 percent due to rounding.

**Unspecified sources of power refers to electricity that is not traceable to a specific generating facility, such as electricity traded through open market transactions. Unspecified sources of power are typically a mix of all resource types, and may include renewables.

⁸ Figure 8 provides a breakdown of the power resource types for each of MCE's retail electricity products. It does not include a breakdown of the power resource types for the overall California grid, as MCE is waiting for the California Energy Commission's 2019 Power Content Label (PCL) template, which has been delayed.

Distributed Energy Resources

MCE will continue utilizing distributed energy resources (DERs) to increase use of renewable energy, reduce GHG emissions, increase local workforce opportunities, and help customers save money. MCE defines DERs to include behind-the-meter generation and storage, demand response, load shifting, electric vehicles, and energy efficiency.

This OIRP builds on existing tools and pilot programs to usher in wider-scale DER deployment in MCE's service area and statewide, while creating opportunities for new programs and technologies. These efforts include:

- Development of local energy projects;
- Exploration of market designs;
- Creation of analytical tools to quickly analyze and evaluate the suitability of specific DER solutions;
- Emphasis on DER pilots that reduce MCE's exposure to wholesale market volatility; and
- Shifting energy use away from peak evening hours when solar energy production is low and market prices are typically high.

Building Energy Optimization

In 2017, the California Energy Commission (CEC) awarded MCE a \$1.75 million Local Government Challenge Grant to pursue an innovative Building Energy Optimization pilot (BEO). The goal of the BEO pilot is to develop a tool that will facilitate scalability of DERs and will be available for use by CCAs across the state by the fourth quarter of 2020. This project will examine the role CCAs can play in reducing the barriers that prevent broad and rapid deployment of targeted DERs. It will deliver an innovative and replicable CCA program design that enables targeted DER portfolios to be coordinated, integrated, optimized, and dispatched rapidly across service areas with the ultimate goal of accelerating state and local climate action toward GHG reduction goals.

Demand Response

In the summer of 2020, MCE launched an innovative battery energy storage program (BESS). The program will reduce customer costs and associated GHG emissions with a goal of providing 6 MW of Resource Adequacy capacity by the end of the Planning Period. Under this program, an aggregated fleet of BESS will be monitored and automatically dispatched as a virtual power plant to reduce MCE's peak demands and shift loads out of the midday hours to alleviate solar overgeneration. MCE plans to expand this program to monitor and control other customer-owned DERs.

MCE continues to explore opportunities for demand response in its service area while facilitating third-party demand response programs. MCE customers are eligible for many of the demand response programs administered by PG&E, and MCE receives allocations from PG&E administered programs. Depending on the results of this analysis, MCE may launch new programs and possibly seek funding from other sources for more robust programs in this sector.

Advanced Energy Rebuild Napa

In 2018, MCE partnered with the Bay Area Air Quality Management District, Napa County, BayREN, and PG&E to administer up to \$1 million for electrification and solar rebates for single

family homes affected by the 2017 and 2018 wildfires in Napa County. Homeowners can access up to \$17,500 in incentives for measures that include high performance insulation in attics and walls, efficient windows, heat-pump water and space heating, smart thermostats, electric vehicle charging, and solar plus storage. This process braids multiple funding sources through one application and MCE offers start-to-finish technical assistance. There is an additional 20% incentive provided to income-qualified households. As of July 2020, four [Advanced Energy Rebuild Napa](#) customers have completed their projects, and an additional 19 customers are enrolled and on track to receive their incentives once their rebuilds are finished.

Transportation Electrification

As part of its broader strategy to reduce GHG emissions through buildings and transportation electrification, MCE has been working on several electric vehicle (EV) related initiatives since 2017. These include demand response-enabled charging devices, equity-centered incentives for electric vehicles, and [funding for charging stations](#). These efforts include a strategic plan and infrastructure analysis in partnership with the U.S. EPA to analyze local EV market trends and their impact on MCE's customer demand.

MCE has identified workplace EV charging as an opportunity to shift the demand of the 32,215 (and growing) EV drivers in its service area to hours of the day when energy is frequently cheaper and cleaner. [MCE Solar Charge](#), a public electric-vehicle charging station that opened in 2019 at MCE's San Rafael office, demonstrates that vision to MCE's staff and customers.

Since 2018, MCE has supported or funded 1,008 Level 2 charging ports for workplaces or multifamily properties, [representing 40% of service area charging needs](#). More than 500 ports have been installed, with more than 480 ports being planned. MCE is coordinating with PG&E on their EV Charge Network program and providing a supplemental rebate to customers who participate in that program. More than 50% of the MCE stations already deployed are enrolled in MCE's Deep Green service. In addition to incentives for EV charging stations, MCE provides free technical assistance and helps coordinate with other funding sources for commercial and multifamily customers interested in EV charging infrastructure.

MCE also has developed a [rebate program for income-qualified customers](#) interested in purchasing a new EV with the goal of increasing access.

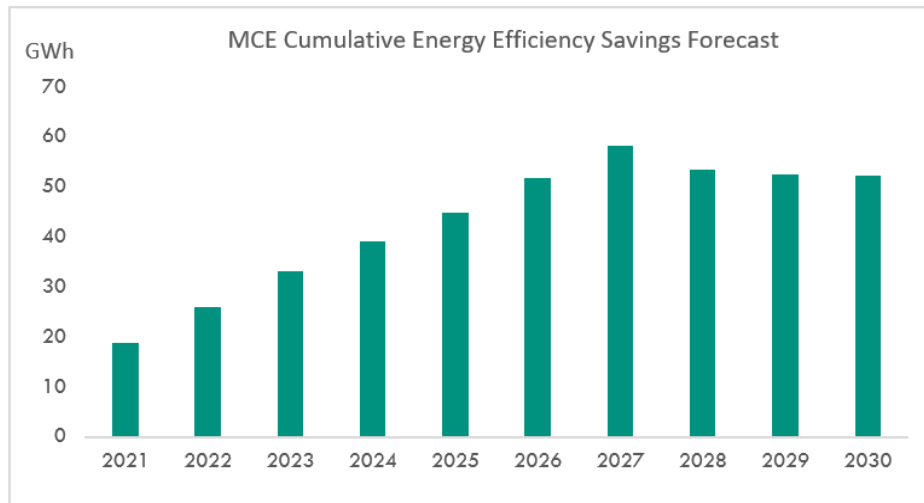
Energy Efficiency

MCE is an administrator of California's ratepayer-funded, energy efficiency (EE) programs alongside Investor Owned Utilities (IOUs) and Regional Energy Networks. Ratepayer funding is derived through collection of the Public Purpose Program Charge from all electric service customers, and administered by the CPUC. MCE has received CPUC funding approval for EE programs to be administered through 2025 and currently administers programs in [multifamily, single family, commercial, agriculture, and industrial sectors](#). Furthermore, MCE administers the [Low-Income Families and Tenants \(LIFT\) program](#), which serves income-qualified, multifamily properties and includes a fuel switching component to incentivize property owners to replace gas-fired space and water heaters. The forecasted cumulative savings of MCE administered EE programs are based on average lifecycle savings (Figure 9).

MCE also invests in multiple workforce development initiatives to encourage the growth of green-collar jobs. Through the approval of its [Energy Efficiency Business Plan](#), MCE has been able to allocate non-resource dollars to fund workforce development initiatives beyond the Multifamily

Energy Savings Direct Install service. MCE is also coordinating closely with PG&E to maximize community benefits.

Figure 9: MCE Cumulative Energy Efficiency Impacts (GWh)



Behind the Meter Energy Storage and Resilience

To mitigate the impact of grid outages, Public Safety Power Shutoff events (PSPS) and to improve overall grid reliability, MCE's Board of Directors approved a \$6 million Resiliency Fund in 2019.

In 2020, MCE launched its [Energy Storage Program](#) to deploy 15 MWh of customer-sited battery storage systems capable of providing both backup power and behind-the-meter dispatch, driving decarbonization, lowering utility costs for program participants, and enabling local grid management through load shaping. This program prioritizes vulnerable customers and populations that are disproportionately affected by grid outages.

The Energy Storage Program benefits MCE by providing smart, demand-side management opportunities through a network of flexible, energy storage plus solar systems with real-time monitoring and controlling. These resources can be aggregated and dispatched by MCE to manage critical peak loads, minimize procurement costs, and as market opportunities evolve, may be used to generate value in wholesale markets. This will help MCE minimize costs for all customers, and benefit California's electric grid through clean, reliable, and smart demand-side management (DSM) strategies enabled by energy storage technologies. During later phases, this program may help MCE expand its role as a CAISO market participant by aggregating resources that can be dispatched into the CAISO market.

The Energy Storage Program is designed to minimize or eliminate the upfront costs of installing customer-owned batteries for the most vulnerable customers. The program leverages incentives from the CPUC's Self Generation Incentive Program, coupled with gap funding and performance-based payments provided through MCE's Resiliency Fund. These payments are offered in exchange for allowing MCE to directly monitor and control participating customers' energy storage systems. MCE prioritizes the most vulnerable customers with the greatest need for resiliency who have already installed, or plan to install, solar photovoltaic.

By storing solar energy produced during midday in storage systems and using it later in the day, customers can reduce dependence on grid-generated power during hours of peak usage and

higher rates. Pairing storage with solar can also help provide extended backup power during multiple day outages.

In addition to considering customers located in High Fire Threat Districts or those who have experienced multiple PSPSs, priority residential customers include those with low-income or serious medical needs that could become life threatening without power. Priority commercial customers include critical facilities located in low-income or state-designated disadvantaged communities that provide critical support for communities during PSPS events and/or natural disasters, such as fire stations, emergency response providers, emergency shelters, and food banks.

MCE offers participating customers an Energy Storage Tariff (Electric Schedule EST) which includes a monthly bill credit in exchange for providing MCE with remote control and dispatch capability of the installed energy storage system. Under this tariff, MCE has the ability to monitor and manage the batteries for daily load shift performance and during Public Safety Power Shutoffs (PSPS) and other emergency events. Customers participating in the Tariff are billed in accordance with the customer's otherwise applicable evening peak, time-of-use MCE rate schedule. The monthly credit on their billing statement is determined as follows:

Residential System Capacity

Between 7 kWh and 20 kWh: \$10 per month

Over 20 kWh: \$20 per month

Commercial System Capacity

\$20 per month per 20kWh, up to a maximum of \$200 per month

Net Energy Metering and Rooftop Solar Rebates

Through its [Net Energy Metering \(NEM\) program](#), MCE supports customer-sited distributed generation within its service area by offering above market incentives including automatic cash outs for surplus generation each year at twice the wholesale rate (up to a cap of \$5,000). MCE's NEM program currently includes more than 40,000 customers (8.3% of all MCE accounts) with aggregate-installed renewable generating capacity of approximately 394 MW.

Beyond NEM, [MCE incentivizes local rooftop solar development for low-income customers](#). MCE has a long-standing partnership with California's Single Family Affordable Solar Housing (SASH) program administrator, GRID Alternatives. MCE contributes \$900 per solar installation to low-income, single-family customers who qualify for GRID's program or are CARE customers. By leveraging multiple sources of funding, GRID Alternatives installs these systems in disadvantaged communities at little to no cost for the customer. In addition to MCE's single-family solar rebate program, MCE offers \$0.41 per watt (AC) rebate to low-income, multifamily properties that install solar that benefits their tenants. From 2012-2019, MCE allocated \$725,000 toward these two rebate programs, and has supported the installation of 287 residential solar photovoltaic systems on low-income multifamily homes. These represent 800 kW of new, local renewable capacity that helps reduce monthly energy bills for low-income families.

Disadvantaged Communities

Disadvantaged Community Solar Program

MCE is collaborating with the CPUC, other CCAs, and the IOUs to develop a community solar program focused on customers in disadvantaged communities (DACs). The DAC-Green Tariff, a CPUC-funded program, offers low-income customers in disadvantaged communities a 20% discount on their electric bill when subscribing to a community solar project and offsetting 100% of their electric usage with solar energy. Under the program, 70 MW of new solar will be developed in DACs in PG&E's service territory. MCE expects to receive approval to implement this program in the fourth quarter of 2020.

Community Power Coalition

To facilitate direct community feedback in the development, progress, and evolution of all its customer programs, MCE engages its [Community Power Coalition](#). Formed in 2014, this Coalition seeks to represent the interests of underrepresented and historically marginalized communities through collaboration and open dialogue with MCE. The Coalition currently has 52 members. MCE's recruitment for the Coalition prioritizes organizations that are:

- Connected to communities who are diverse in language or culture;
- Working with under-served youth;
- Developing return-to-workforce programs; and
- Advocacy groups with a focus on families living below the poverty level.

Adding these voices and their questions to the Community Power Coalition working group is one way to deepen our understanding about the groups' challenges and the measures or types of support that could make a real difference. MCE's Community Power Coalition connects MCE more deeply to the community, offering expert advice on the needs of their constituents and how MCE can best support underserved customers and environmental equity through our programs, policies, and procurement.

Workforce and Supplier Diversity

MCE is committed to supporting the economic health and sustainability of member communities. As demonstrated by MCE's Sustainable Workforce Policy 011, MCE is committed to supporting sustained and fairly compensated local job opportunities through participation in the energy industry. This includes supporting workforce training and apprenticeship programs. Policy 011 outlines specific efforts to prioritize workforce development through MCE's Feed-in Tariff, energy efficiency projects, contracting for services and supplies, and in the direct hiring of MCE staff.

To the extent allowed by state law, MCE seeks to create market incentives and partnerships to encourage diversity and a sustainable workforce through its support for:

- Fair compensation in direct hiring, renewable development projects, customer programs, internships and procurement services;
- Development of locally generated renewable energy within the MCE service area;
- Direct use of union members from multiple trades;
- Quality training, apprenticeship, and pre-apprenticeship programs;
- Direct use of businesses local to the MCE service area;

- Development of California-based job opportunities;
- Business and workforce initiatives located in low-income and disadvantaged communities;
- Direct use of disabled Veteran-owned Enterprises and LGBT-owned Business Enterprises;
- Direct use of green and sustainable businesses; and
- Use of direct hiring practices that promote diversity in the workplace.

Workforce Education & Training (WE&T)

Energy efficiency measures lower energy consumption, saves customers money, and reduces greenhouse gas pollution. This endeavor is rooted in a history of MCE partnerships developed to construct local renewable energy projects, install energy efficiency measures, build electric vehicle charging stations, and secure low-income residential solar installations. A few examples:

- MCE partnered with the Marin City Community Development Corporation to train 62 disadvantaged community members and connect them to solar installation and energy efficiency jobs.
- MCE partnered with Rising Sun Energy Center to train youth to provide no-cost energy and water-saving assessments in the cities of Richmond, El Cerrito, and San Pablo.
- MCE partnered with RichmondBUILD to help students develop construction, numeracy, and literacy skills, and later connect them with related jobs for MCE Solar One and an LED retrofit project for city streetlights.
- MCE coordinated the installation of a new call center in the City of Pittsburg through its contract with Calpine, and then partnered with Future Build (a county workforce development program) to train students on call center basics, call handling, energy data, and more. Graduates of the training were offered positions at the new call center.
- MCE partnered with the North Bay Workforce Alliance to hire trainees for multiple large-scale solar installations in American Canyon.
- In all MCE communities, new renewable energy project developers must certify that 100% of employees hired during construction are paid a prevailing wage, and that at least 50% of the construction work-hours from its workforce (including contractors and subcontractors) are obtained from permanent residents who live within the same county.

Creating Energy Efficiency Jobs

In 2018, the [CPUC awarded MCE \\$2.24 million](#) through 2025 to offer a broad spectrum of opportunities to prepare the local workforce for careers in energy efficiency. This funding will allow MCE to streamline workforce investments into a sustainable pipeline of long-term green-job opportunities for community members, while strengthening the local economy and contributing to a just transition to a clean energy economy. This is especially important in communities where the fossil fuel industry has long been the main employer for generations of families. To ensure the working class isn't left behind in a decarbonized energy future, these workforce programs are a necessary link to train for the skills needed to enter the green economy.

MCE is engaging local partners, community colleges, and the existing contractor workforce to understand their current challenges and how their work has been affected by the COVID-19 pandemic. Informed about local constraints, MCE is in the process of developing a mentorship and internship program to achieve the following goals:

- Upgrade the technical expertise of the existing contractor workforce on energy efficiency and electrification technology;
- Fund the training of job-seekers;

- Match qualified job-seeker trainees with trained contractors and pay for a local internship in a “learn and earn” model;
- Provide project site opportunities where the mentor and intern can install efficiency measures while helping MCE customers increase the efficiency, health, and safety of their homes and businesses.

Long term, MCE hopes to solidify this trainee-to-employee pipeline so it can continue investing in the technical trainings, on-ramps to career pathways, job security, and economic health of member communities.

Supplier Diversity

In an effort to further MCE’s tracking and reporting of labor practices and the diversity of its supplier base, MCE has built relationships with the CPUC’s General Order 156 Supplier Diversity staff and Clearinghouse since 2018. This has included MCE staff attending CPUC symposiums and hosting an annual “[Certify & Amplify](#)” informational workshop since 2019 to educate local businesses on the process and contracting opportunities available through Supplier Diversity certification.

Since 2019, MCE has made an effort to collect voluntary information on supplier diversity and labor practices from its suppliers, including its power suppliers. In compliance with Proposition 209, MCE explicitly does not give preferential treatment to bidders based on race, sex, color, ethnicity, or national origin. MCE collects this information only after contracts are signed, and the information does not influence any current or future solicitation or selection processes.

In 2019, SB 255 was signed into law, requiring CCAs to submit an annual plan to the CPUC reporting on agency procurement from small, local, and diverse business enterprises, as well as reporting on diverse suppliers. MCE was supportive of this bill and will submit its plan and report to the CPUC when requested. MCE continues to explore ways in which it can ensure that diverse communities have access to MCE’s contracting opportunities, within the constraints of Proposition 209.

IV. Planning Policies

MCE's policy, established by MCE's founding documents and directed on an ongoing basis by MCE's Board, guides the development of this IRP and related procurement activities. MCE's key, resource planning policies are to:

- Reduce GHG emissions and other pollutants associated with the electric power sector through increased use of renewable, GHG-free, and low-GHG energy resources;
- Maintain competitive electric rates and increase control over energy costs through management of a diversified resource portfolio;
- Benefit the local economy by offering competitive electricity rates and customer programs and investing in infrastructure, energy, and workforce-development programs within MCE's service area;
- Help customers reduce energy consumption and electric bills by supporting and administering enhanced customer energy efficiency, cost-effective distributed generation, and other demand-side programs;
- Enhance system reliability through investments in supply- and demand-side resources;
- Actively monitor and manage operating and market risks to promote MCE's continued financial strength and stability; and
- Support supplier and workforce diversity as permitted by law.

The IRP translates these broad policy objectives into a more specific energy procurement strategy, taking into consideration MCE's projected customer needs and existing resource commitments over the Planning Period.

Regulatory Requirements

When planning its power supply portfolio for the upcoming ten-year period, MCE must take into account numerous regulatory requirements, a few of which are very briefly described below. For more detailed information on the regulations underlying this IRP, please see [Appendix C](#).

Renewable Portfolio Standard and Senate Bill 100

California's Renewable Portfolio Standard (RPS) requires California load-serving entities (LSEs) to supply their retail sales with minimum quantities of eligible renewable energy. Senate Bill 100 directs all LSEs to procure 60% of their portfolios from RPS-eligible resources by 2030, and 100% of their retail sales from zero-carbon resources (or eligible renewable resources) by 2045.

Resource Adequacy

Resource Adequacy (RA), a California program jointly administered by the CPUC, CEC and CAISO, directs LSEs to secure forward capacity and offer it into the CAISO's Day-Ahead and Real-Time markets to ensure that there will be enough supply in the right locations and with sufficient ramping capability to meet load. The RA program is comprised of three products: System RA; Local RA; and Flexible RA. Local RA obligations will be assigned to a Central Procurement Entity starting in 2023. In addition, per CPUC Decision 19-11-016, LSEs are required to procure "Incremental System Capacity," which is RA capacity that is in addition to the identified resources on the CPUC's 2022 baseline list of resources.

Power Source Disclosure

California law requires LSEs to disclose the types of power resources used to supply retail sales. This mandate, known as the Power Source Disclosure program (PSD), is a consumer information program managed by the California Energy Commission (CEC) on an annual basis. A key output of the PSD program is the Power Content Label (PCL). The PCL is an LSE-specific document that shows the breakdown of power resource types for each of the LSE's energy products used to serve retail load, as well as a breakdown of resource types for the overall California grid. The PCL is distributed to customers each summer.

MCE Light Green Procurement Targets

95% GHG-free by 2022 and 85% Renewable by 2029

Reducing GHG emissions is at the heart of MCE's mission. With this in mind, MCE is structuring a Light Green portfolio that will be approximately 95% GHG-free in 2022 and beyond, subject to market and regulatory changes (see Table 3). To structure such a clean Light Green portfolio by 2022, MCE will procure three products: (1) RPS-eligible renewable energy; (2) large hydroelectric energy; and (3) Asset Controlling Supplier energy, the vast majority of which is large hydroelectric.⁹ RPS-qualifying renewable energy will continue to account for at least 60% of MCE's Light Green portfolio and will ramp up to 85% by 2029. MCE is planning to phase out its use of Portfolio Content Category 2 (PCC 2) renewables by 2022 and will ramp up its use of Portfolio Content Category 1 (PCC 1) renewables to make up the difference.¹⁰ This steady phase-out of PCC 2 renewables is a decision by MCE to mitigate the impact of AB 1110 implementation (explained in [Appendix C](#)), where PCC 2 renewables will be assigned the GHG emissions of the associated substitute power.

As shown in Table 3, MCE is targeting a Light Green portfolio that is 95% GHG-free. MCE has chosen a 95% target because as part of its PCC 1 renewable energy portfolio, MCE has contracts for geothermal and biofuel that are known to produce small amounts of carbon dioxide and other GHGs during electric power generation,¹¹ and MCE procures Asset Controlling Supplier (ACS) energy that includes relatively small portions of GHG-emitting power. A significant portion of the large hydroelectric power in the Pacific Northwest is embedded in ACS, and MCE has determined that the benefit of access to this hydroelectric supply outweighs the downside of taking these embedded emissions.

⁹ The California Air Resources Board (CARB) recognizes three asset-controlling suppliers: Bonneville Power Administration, Powerex, and Tacoma Power. On its website, CARB publishes the emissions factors for each of these three suppliers: <https://ww2.arb.ca.gov/mrr-ac>.

¹⁰ PCC 1 renewable energy is produced by generating facilities with a first point of interconnection within a California Balancing Authority (CBA), or by facilities that schedule electricity into a CBA, and without substitute energy. PCC 2 renewable energy is produced by generating facilities located outside of any CBA, where the generation output is also sunk outside of a CBA, and substitute energy is imported into a CBA within the same calendar year. For more information and context, please see Appendix C.

¹¹ Technology-specific emissions factors can be found in Table A.III.2 of the 2014 IPCC report available at: https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_annex-iii.pdf.

Table 3: MCE Light Green Portfolio Targets¹²

10-Year Light Green Portfolio Targets	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
PCC1 Renewable	56%	60%	60%	60%	65%	70%	75%	80%	85%	85%
PCC2 Renewable	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Large Hydro + ACS	38%	40%	40%	40%	35%	30%	25%	20%	15%	15%
Total Renewable	60%	60%	60%	60%	65%	70%	75%	80%	85%	85%
Total Renewable + Large Hydro + ACS	98%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GHG-Free Equivalent	90%	95%	95%	95%	95%	95%	95%	95%	95%	95%

Energy Storage

Energy storage is critical to California meeting its reliability and environmental objectives. With respect to reliability objectives, energy storage can help the State meet its capacity needs, which will be amplified by the retirement of natural gas-fired power plants and the upcoming retirement of California's last nuclear power plant, Diablo Canyon. Also, on the reliability front, energy storage can provide energy to the grid including scheduled energy and regulation energy required by the California ISO to manage grid frequency. This energy service is particularly important during specific times of the day when solar and wind are not available to serve load. With respect to environmental objectives, energy storage can help the State meet its renewable and GHG goals by charging when there is excess renewable generation, thereby avoiding the need to curtail such power.

For the reasons outlined above, MCE has committed to develop 585 MW of wholesale (i.e., in front of the meter) storage capacity over the course of the planning period. MCE currently estimates that 300 MW of this nameplate capacity will be paired with renewables, and 285 MW will be stand-alone storage. Of the aforementioned 285 MW, MCE anticipates that 45 MW will consist of long-duration resources that can discharge at full capacity for at least eight hours.

With respect to long-duration storage, the CPUC's 2020 Integrated Resource Planning identified a need for between 973 MW and 1,605 MW of long-duration storage by 2026.¹³ In response to the CPUC's analysis, MCE and twelve other CCAs (the Joint CCAs) issued a request for information (RFI) on long-duration storage in June 2020. This RFI defined long-duration storage resources as those with the capability to discharge at full capacity for at least eight hours. The RFI requested the following types of information: storage technology and commercial history; project specifics, including location, permitting, financing and development risks; and contracting terms and preferences, including indicative pricing.

The Joint CCAs received responses from 31 entities representing numerous types of chemical, mechanical, and thermal long-duration storage technologies such as: lithium-ion batteries; vanadium redox and other flow batteries; used electric vehicle batteries; waste to fuels via ultrasound; hydrogen storage; pumped storage hydro; geomechanical pumped storage; crane and stacked blocks; compressed air; flywheels; and molten salt and other thermal storage technologies. Moreover, the respondents identified 25 specific projects that represent more than

¹² With respect to Table 3 overall: actual content percentages may differ from projections if resource availability or market conditions preclude cost-effective procurement or if annual load comes in higher or lower than expected. With respect to MCE's Light Green "GHG-Free Equivalent" metric: beginning with MCE's 2020 results, this percentage will be derived as follows: [MCE Light Green MT CO₂e, per CEC Power Content Label] / [(MWh of MCE Light Green Retail Sales) x (0.428 MT CO₂e/MWh)]. For reference, 0.428 MT CO₂e/MWh is the emissions factor for unspecified electricity, per the California Air Resources Board.

¹³ In CPUC Decision 20-03-028, the 973 MW long-duration storage target is associated with a Reference System Plan that limits system-wide GHG emissions to 46 MMT by 2030, whereas the 1,605 MW long-duration storage target is associated with a Reference System Plan that limits system-wide GHG emissions to 38 MMT by 2030.

9,000 MW of capacity, two thirds of which is advertised as able to achieve commercial operation by 2026.

MCE and other CCAs are now engaging in the critical next step of assessing the economics of such projects. This assessment is expected to lead to Requests for Offers (RFOs) and transactional discussions aimed at bringing actual projects online by 2026. For its part, MCE anticipates that it will procure its share of the CPUC's 1,605 MW target, which translates to 45 MW of long-duration storage for MCE, to be online by 2026. Due to the scale and complexity of these projects, however, successful development will depend on efficient collaboration among numerous parties including load-serving entities, developers, manufacturers, market operators, regulators, and environmental stakeholders.

Non-Fossil Resource Adequacy

MCE is targeting a 2030 Resource Adequacy (RA) portfolio with non-fossil resources comprising 50% of the Net Qualifying Capacity (NQC). MCE is planning to meet this 2030 non-fossil RA target with renewables, large hydro/ACS and 585 MW of energy storage (see Energy Storage section above). To the extent that the methodologies for calculating Qualifying Capacities and Net Qualifying Capacities are significantly changed over the course of the planning period, MCE may have to adjust its non-fossil RA target.

V. Resources

Existing Resource Commitments

Table 4 lists MCE's 85 purchase contracts for renewable energy, large hydroelectric/ACS energy, and CAISO load hedging (via fixed-price forward contracts) in 2020 and beyond. Table 4 excludes MCE's numerous RA-only contracts, and it is only a snapshot in time. MCE's portfolio of contracts is continually evolving.

Table 4: MCE Portfolio of Resources as of 9/10/2020¹⁴

Counterparty/Parent	Generation Facility	Generation Technology	Contract MW	Term	Annual GWh	Generation Location
New Renewables: Contract Terms ≥ 10 years						
BayWa	Strauss Wind	Wind	98.83	2020-2035	300	Lompoc, CA
CMSA	CMSA (FIT)	Solar PV	0.75	2019-2039	1.3	San Rafael, CA
ConEdison	Great Valley Solar 1	Solar PV	100	2018-2033	279-290	Fresno Co, CA
Dominion	Cottonwood (Corcoran, Goose L., Buck)	Solar PV	24	2015-2040	56-66	CA: Kings, Kern, Novato
DRES Quarry, LLC	Cooley Quarry 1 (Local Sol)	Solar PV	0.99	2017-2037	2.9	Novato, CA
DRES Quarry, LLC	DRES Quarry 2.4 (FIT)	Solar PV	0.1	2019-2038	0.30	Novato, CA
EDF	Desert Harvest	Solar PV	80	2020-2040	237-262	Riverside Co, CA
Energy Finance Associates	MCE Solar Charge	Solar PV	0.079	2018-2038	0.11	San Rafael, CA
G2Energy	G2 Hay Road	Landfill Gas	1.4	2013-2033	11	Solano Co, CA
G2Energy	G2 Ostrom Road	Landfill Gas	1.7	2013-2031	12	Yuba Co, CA
Hayworth-Fabian LLC	Oakley RV & Boat Storage (FIT)	Solar PV	0.99	2018-2037	1.8	Oakley, CA
Larkspur Real Estate Partnership 1	Cost Plus Plaza Larkspur (FIT)	Solar PV	0.261	2016-2036	0.5	Larkspur, CA
Longroad Energy Holdings, LLC	Little Bear 1 Solar	Solar PV	40	2020-2040	99-109	Fresno Co, CA
Longroad Energy Holdings, LLC	Little Bear 3 Solar	Solar PV	20	2020-2040	50-55	Fresno Co, CA
Longroad Energy Holdings, LLC	Little Bear 4 Solar	Solar PV	50	2020-2040	124-137	Fresno Co, CA
Longroad Energy Holdings, LLC	Little Bear 5 Solar	Solar PV	50	2020-2040	124-137	Fresno Co, CA
Northshore Solar Partners LLC	Freethy Industrial Park 1 (FIT)	Solar PV	0.998	2016-2036	1.8	Richmond, CA
Northshore Solar Partners LLC	Freethy Industrial Park 2 (FIT)	Solar PV	0.998	2016-2036	1.8	Richmond, CA
Recurrent Energy	RE Mustang 4	Solar PV	30	2018-2032	79-84	Fresno Co, CA
RPCA Solar 4, LLC	Lake Herman Solar (FIT+)	Solar PV	5	2021-2031	13.2	Solano County, CA
RP Napa Solar 1, LLC	American Canyon A (FIT)	Solar PV	0.99	2019-2039	2.6	Napa, CA
RP Napa Solar 1, LLC	American Canyon B (FIT)	Solar PV	0.99	2019-2039	2.6	Napa, CA
RP Napa Solar 1, LLC	American Canyon C (FIT)	Solar PV	0.99	2019-2039	2.6	Napa, CA
RP Napa Solar 2, LLC	Soscol Ferry Solar C (FIT)	Solar PV	0.99	2020-2040	2.6	Napa, CA
RP Napa Solar 2, LLC	Soscol Ferry Solar D (FIT)	Solar PV	0.99	2020-2040	2.6	Napa, CA
RP Napa Solar 3, LLC	Silveira Ranch A (FIT)	Solar PV	0.999	2020-2040	2.6	Novato, CA
RP Napa Solar 3, LLC	Silveira Ranch B (FIT)	Solar PV	0.999	2020-2040	2.6	Novato, CA
RP Napa Solar 3, LLC	Silveira Ranch C (FIT)	Solar PV	0.999	2020-2040	2.6	Novato, CA
San Rafael Airport LLC	San Rafael Airport (FIT)	Solar PV	0.972	2012-2032	1.7	San Rafael, CA
San Rafael Airport LLC	San Rafael Airport 2 (FIT)	Solar PV	0.972	2020-2040	2	San Rafael, CA
Small World Trading Co.	EO Products (FIT)	Solar PV	0.056	2018-2037	0.1	San Rafael, CA
sPower	Antelope Expansion 2	Solar PV	105	2018-2038	284-312	Mojave Desert, CA
sPower	MCE Solar One	Solar PV	10.5	2017-2037	22	Richmond, CA
Terra Gen	Voyager Wind III	Wind	42	2018-2030	138	Mojave, CA
Waste Management	Redwood Landfill	Landfill Gas	3.5	2017-2037	30.7	Novato, CA
Existing Renewables: Contract Terms ≥ 10 years						
Calpine	Geysers	Geothermal	10	2017-2026	88	Lake Co, Sonoma Co, CA
EBMUD	Pardee & Camanche Powerhouses	Small Hydro	34	2016-2025	70	Mokelumne River, CA
Genpower	Energy 2001 - Lincoln Landfill	Landfill Gas	4.8	2013-2033	27	Lincoln, CA
Kern and Tule Hydro LLC	Kern Canyon	Small Hydro	11.5	2021-2036	57	Kern County, CA

¹⁴ Table 4 excludes MCE's RA-only contracts but includes all other purchase contracts

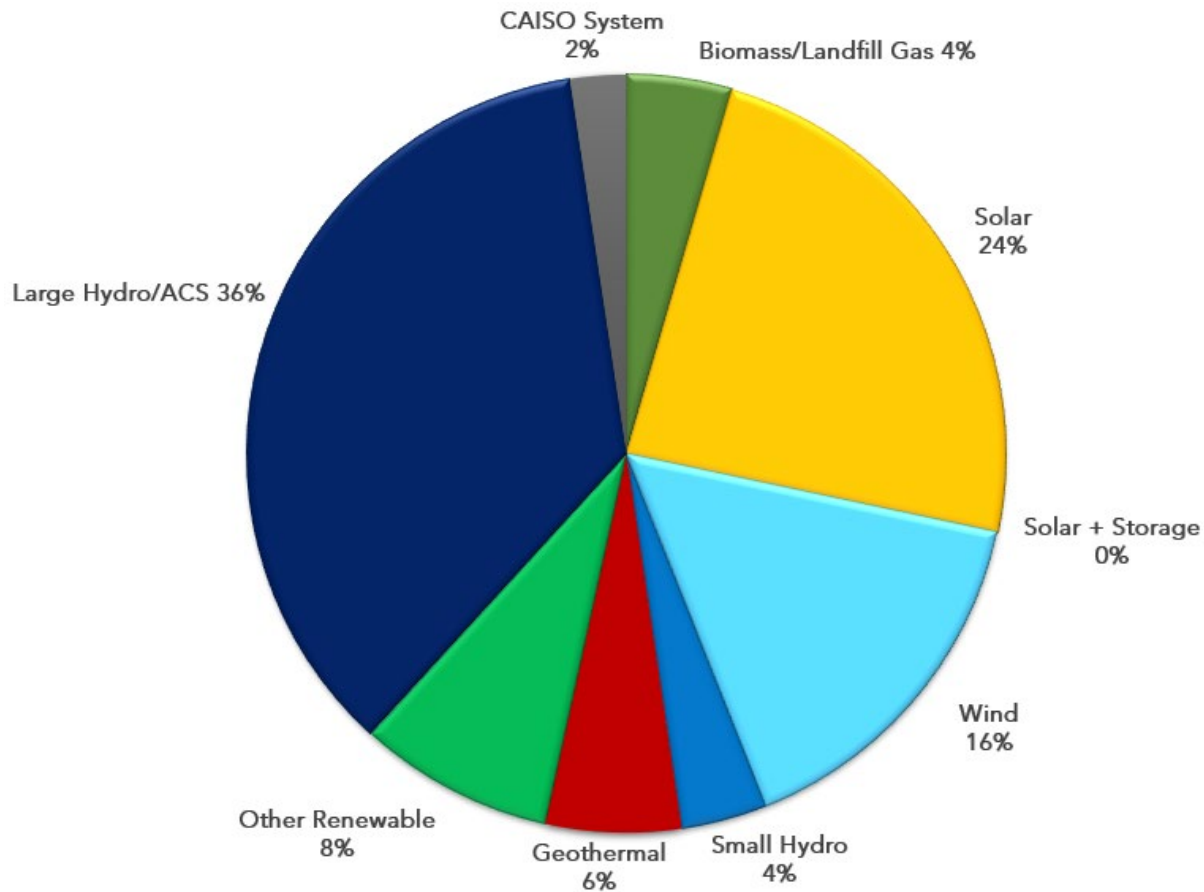
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Counterparty	Generation Facility	Generation Technology	Contract MW	Term	Annual GWh	Generation Location
Renewables: Contract Terms < 10 years						
3 Phases Renewables Inc.	PCC 2 Renewables Portfolio	PCC 2 Renewables	N/A	2020	75-100	Western Interconnection
3 Phases Renewables Inc.	PCC 1 Renewables Portfolio	PCC 1 Renewables	N/A	2020	40-45	Western Interconnection
Avangrid	PCC 1 Wind Portfolio	PCC 1 Wind	N/A	2020	100	Washington, Oregon
Morgan Stanley	PCC 1 Wind Portfolio	PCC 1 Wind	N/A	2018-2020	75-90	Washington, Oregon
Morgan Stanley	PCC 1 Renewables Portfolio	PCC 1 Renewables	N/A	2020	150-180	Western Interconnection
Morgan Stanley	PCC 2 Wind/Biomass Portfolio	PCC 2 Wind, Biomass	N/A	2020-2021	18-50	Washington, Oregon, Idaho
NextEra	FPL Energy Green Power Wind	PCC 1 Wind	15.5	2019-2023	25.2	Riverside Co, CA
NextEra	PCC 1 Geothermal and LF Gas Portfolio	PCC 1 Geo, LF Gas	N/A	2020-2022	184-229	California
PG&E	PCC 1 Renewables Portfolio	PCC 1 Renewables	N/A	2019-2020	200-300	California, Nevada, Arizona
Powerex	PCC 1 Wind Portfolio	PCC 1 Wind	N/A	2019-2020	25-50	British Columbia
Powerex	PCC 1 Wind Portfolio	PCC 1 Wind	N/A	2020	100	British Columbia
Powerex	PCC 1 Wind Portfolio	PCC 1 Wind	N/A	2020	50	British Columbia
Shell Energy North America	PCC 1 Solar/Wind Portfolio	PCC 1 Solar, Wind	N/A	2020-2021	50-75	Western Interconnection
Southern California Edison (SCE)	PCC 1 Solar/Wind Portfolio	PCC 1 Solar, Wind	N/A	2019-2020	200	California, Nevada
Southern California Edison (SCE)	PCC 1 Solar/Wind/Geo Portfolio	PCC 1 Solar, Wind, Geo	N/A	2019-2020	100-300	California, Nevada
Southern California Edison (SCE)	PCC 1 Solar/Wind Portfolio	PCC 1 Solar, Wind	N/A	2020-2021	80-350	California, Nevada, Arizona
TGP Energy Management, LLC	PCC 1 Solar/Wind Portfolio	PCC 1 Solar, Wind	N/A	2018-2020	300	California, Arizona
The Energy Authority (TEA)	PCC 2 Wind Portfolio	PCC 2 Wind	N/A	2020-2021	155-246	Washington
Turlock Irrigation District	PCC 1 Small Hydro Portfolio	PCC 1 Small Hydro	N/A	2019-2020	18	California
Large Hydroelectric / ACS						
Bonneville Power Administration	BPA ACS	BPA ACS	25	2020	219.6	Pacific Northwest
Brookfield Renewable Partners	Large Hydro/ACS Portfolio	Large Hydro/ACS	N/A	2020	175	Pacific Northwest
CalChoice	Large Hydro Portfolio	Large Hydro	N/A	2020	14	Washington, Idaho
Morgan Stanley	Large Hydro Portfolio	Large Hydro	N/A	2018-2020	160-330	Washington, Idaho
Morgan Stanley	Large Hydro/ACS Portfolio	Large Hydro/ACS	N/A	2020	200	Washington, Idaho, MT
PG&E	Large Hydro (PCIA-related Allocation)	Large Hydro	N/A	2020	TBD	California
Powerex	Large Hydro/ACS Portfolio	Large Hydro/ACS	N/A	2020	250	Pacific Northwest
Shell Energy North America	Colgate & Narrows 2 Powerhouses	Large Hydro	N/A	2020	150	California
Shell Energy North America	Colgate & Narrows 2 Powerhouses	Large Hydro	N/A	2023	200	California
Shell Energy North America	Colgate & Narrows 2 Powerhouses	Large Hydro	N/A	2024	200	California
Tenaska Power Services	Middlefork & Ralston Powerhouses	Large Hydro	N/A	2018-2022	300-600	California
TransAlta Energy Marketing US	Large Hydro Portfolio	Large Hydro	N/A	2020	92	Washington, Montana
Western Area Power Administration	Central Valley Project	Large Hydro	N/A	2015-2024	25	California
Fixed Price Forward Contracts						
Direct Energy Business Marketing	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2018-2020	310-483	N/A
Direct Energy Business Marketing	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2021	109.5	N/A
Exelon Generation Company	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2020	461	N/A
Exelon Generation Company	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2020-2022	322-538	N/A
Morgan Stanley	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2018-2020	188-588	N/A
Morgan Stanley	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2019-2020	208-216	N/A
Morgan Stanley	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2021-2022	332-472	N/A
Morgan Stanley	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2021-2022	449-464	N/A
Morgan Stanley	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2023	545	N/A
NextEra	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2023	621	N/A
Shell Energy North America	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2018-2020	623-739	N/A
Shell Energy North America	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2019-2020	168-448	N/A
Shell Energy North America	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2019-2022	353-950	N/A
Shell Energy North America	N/A (Fixed Payment for NP15 Revenue)	N/A	Variable	2020	605	N/A

Projected 2021 Resource Mix

As shown in Figure 10, MCE anticipates that 98% of its total 2021 retail sales will be sourced from renewables, large hydroelectric and Asset Controlling Supplier (ACS) energy.

Figure 10: MCE 2021 Estimated Resource Mix¹⁵



Resource Needs

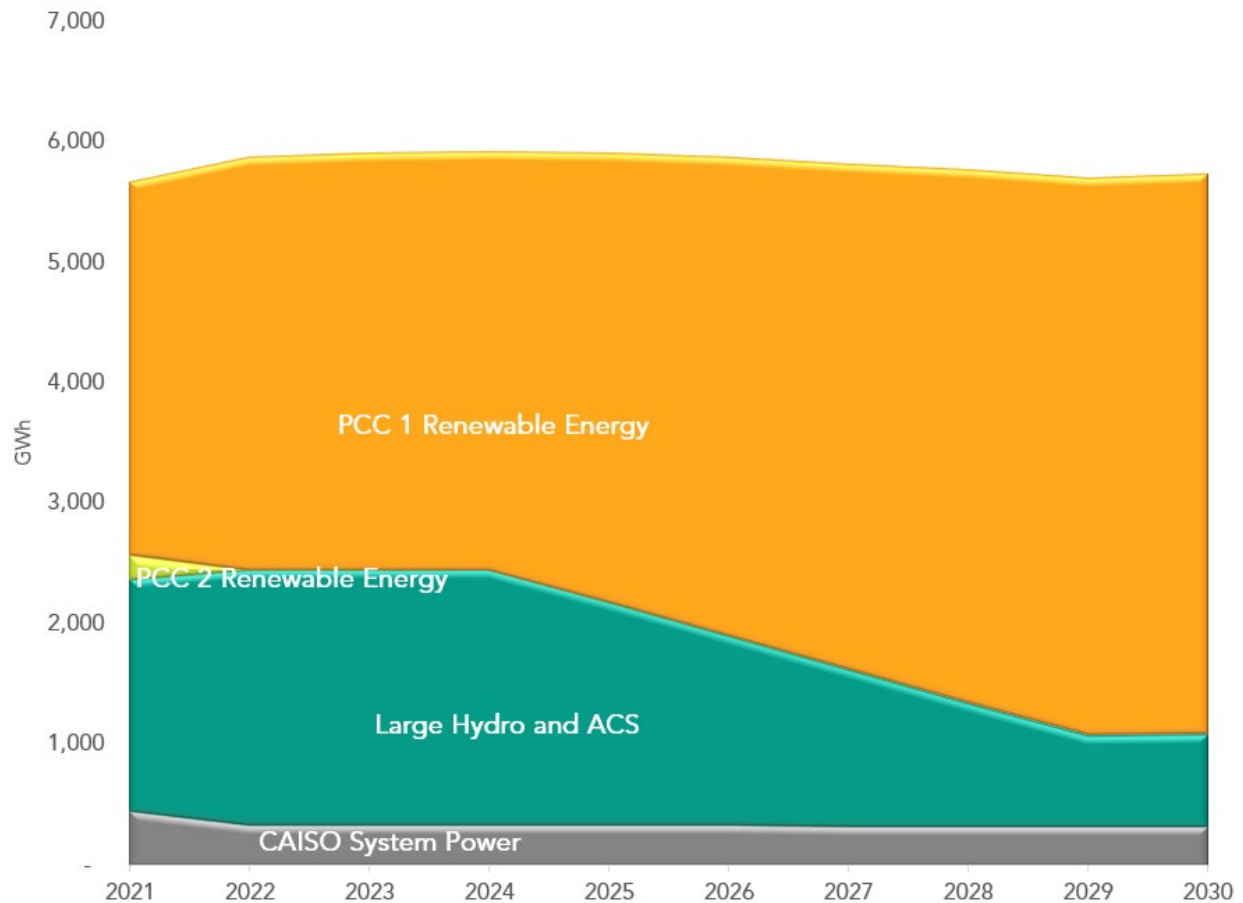
Beyond its current contractual commitments, MCE will procure additional energy products as necessary to ensure that the future energy needs of its customers are met in a clean, reliable, and cost-effective manner. This section sets forth MCE's planned resource volumes and quantifies the net resource need or "open position" that remains after accounting for production from MCE's existing resource portfolio. As explained above, MCE has established procurement targets for renewable energy, large hydroelectric and ACS, and established targets for planning reserves. To the extent that MCE's energy needs are not fulfilled through the use of renewable, large hydroelectric and ACS, it should be assumed that such supply will be sourced from CAISO system power, which represents energy purchases from the wholesale market that are not directly associated with specific generators.

¹⁵ Figure 10 includes all supply to serve retail sales for the Light Green, Deep Green and Local Sol product offerings.

Renewable Resources

MCE plans to provide Light Green customers with energy that is at least 60% renewable through 2024 and 85% renewable by 2029. Importantly, MCE plans to change the underlying composition of this renewable energy by eliminating its use of PCC 2 renewables and relying completely on PCC 1 renewables starting in 2022. MCE will also procure PCC 1 renewable energy for its Deep Green customers, and is projecting that the number of such Deep Green customers will grow steadily over the Planning Period. In summary, MCE is planning to procure significant quantities of PCC 1 renewable energy, as Figure 11 illustrates.

Figure 11: MCE Procurement Targets (GWhs), 2021-2030¹⁶



Renewable Open Positions

MCE's renewable power content targets continue to exceed California's minimum RPS requirements and will continue to do so throughout the Planning Period, as shown in the first portion of Table 5. MCE has executed a number of long-term power purchase agreements (PPAs) with new, California-based generating facilities that will produce PCC 1-eligible renewable energy.¹⁷ To supplement its core procurement of PCC 1 resources under long-term contracts,

¹⁶ Figure 11 displays the types of resources required to meet MCE's loss-adjusted load (i.e., load including the power lost to the distribution system).

¹⁷ Historically, MCE has contracted with PCC 1 resources located within California; however, some resources located outside of California are eligible for PCC 1, typically through direct interconnection or firm transmission rights to the CAISO. Whereas MCE has an established preference for in-state resources, it may consider contracting with out-of-

MCE engages in short-term contracts for renewable energy supplies to balance and optimize its portfolio. As shown in the second portion of Table 5, MCE has secured contracts for renewable energy volumes in excess of applicable California RPS procurement requirements through 2023. Relative to its own RPS targets for Light Green and Deep Green, MCE needs additional renewable energy volumes for 2022 and beyond, as shown in the third portion of Table 5.

Table 5: MCE Renewable Energy Balance, 2021-2030

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Retail Sales (GWh)	5,354	5,548	5,577	5,587	5,580	5,547	5,498	5,449	5,384	5,420
CA RPS Compliance Requirement	36%	39%	41%	44%	47%	49%	52%	55%	57%	60%
MCE Light Green RPS Target	60%	60%	60%	60%	65%	70%	75%	80%	85%	85%
MCE Deep Green RPS Target	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CA RPS Compliance Requirement (GWh)	1,917	2,136	2,303	2,458	2,606	2,735	2,859	2,980	3,085	3,252
MCE RPS Energy Contracted (GWh)	3,611	2,814	2,324	2,292	2,223	2,093	1,998	1,992	1,984	1,967
CA RPS Compliance Net Short/(Long)	(1,694)	(678)	(20)	166	383	642	861	988	1,101	1,285
MCE (LG+DG) RPS Target (GWh)	3,307	3,436	3,468	3,476	3,738	3,980	4,206	4,426	4,628	4,659
MCE RPS Energy Contracted (GWh)	3,611	2,814	2,324	2,292	2,223	2,093	1,998	1,992	1,984	1,967
MCE (LG+DG) Net Short/(Long)	(304)	622	1,144	1,184	1,515	1,887	2,207	2,434	2,643	2,692

Large Hydroelectric and ACS

For its Light Green customers, MCE has outlined a 2021 portfolio, 98% of which will be sourced from renewables, large hydroelectric and ACS. By 2022, MCE is planning to increase that figure to 100% by ramping up its use of large hydroelectric and ACS power from 38% in 2021 to 40% in 2022. Then starting in 2025, MCE plans to steadily ramp down its use of large hydroelectric and ACS power as it correspondingly ramps up its use of PCC 1 renewables. MCE's large hydroelectric/ACS targets and open positions are shown in Table 6. MCE procures large hydroelectric from resources across the western interconnection, but with a focus on California and the Pacific Northwest. ACS power is sourced from all three of the existing ACS suppliers: Bonneville Power Administration, Powerex, and Tacoma Power.

Table 6: MCE Large Hydroelectric/ACS Balance, 2021-2030 (GWh)

MCE Light Green Portfolio	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Large Hydro/ACS Target (%)	38%	40%	40%	40%	35%	30%	25%	20%	15%	15%
Large Hydro/ACS Target (GWh)	1,919	2,112	2,110	2,111	1,843	1,568	1,293	1,023	756	761
Large Hydro/ACS Under Contract (GWh)	625	625	225	225	-	-	-	-	-	-
Large Hydro/ACS Open Position (GWh)	1,294	1,487	1,885	1,886	1,843	1,568	1,293	1,023	756	761

Fixed-Price Forward Contracts

MCE uses fixed-price forward contracts (i.e., "fixed for floating" contracts) to hedge CAISO day-ahead market price exposure associated with its portfolio. More specifically, for the volumes and hours where MCE does not have supply contracts that yield CAISO day-ahead revenue, MCE uses fixed-price forward contracts where MCE pays a fixed price per MWh in order to receive a floating price that clears for each hour. This helps hedge MCE's CAISO day-ahead market price exposure because the floating price (NP15) is correlated with MCE's CAISO load price (PG&E's default-load aggregation point). These contracts are an important complement to MCE's portfolio, which

state, PCC 1-qualified resources to the extent that they offer increased value or other desirable portfolio attributes during the Planning Period.

includes contracts where MCE is not entitled to the CAISO revenue.¹⁸ As MCE procures increasing portions of fixed-price renewables with storage and fixed-price large hydroelectric/ACS, MCE will ramp down its use of fixed for floating contracts.

Resource Adequacy

MCE meets California's Resource Adequacy (RA) program requirements by procuring qualifying RA through PPAs and RA-only contracts. As mentioned in Chapter IV (and explained in more detail in [Appendix C](#)), MCE currently must secure three types of RA: System RA; Local RA; and Flexible RA. Importantly, MCE's Local RA supply counts towards MCE's System RA requirement, and MCE's Flexible RA requirement is fulfilled with local or system resources. In other words, MCE's total System RA requirement represents the total capacity that MCE must buy under the RA program, as shown in Tables 7 and 8 below.

Table 7: MCE System and Local Net RA Requirements, 2021-2030

Average Net Requirement Across All Months	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Non-Local RA Requirement (MW)	667	670	674	677	680	684	687	691	694	698
Local RA Requirement (MW)	629	632	-	-	-	-	-	-	-	-
Total System RA Requirement (MW)	1,296	1,302	674	677	680	684	687	691	694	698

Table 8: MCE Flexible RA Requirements, 2021

2021 Flexible RA Requirements	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flexible RA Requirements (MW)	528	495	493	474	407	449	363	377	361	354	439	413

As part of its total System RA obligation and pursuant to CPUC Decision 19-11-016, MCE is required to procure Incremental System Capacity, which is RA capacity that is in addition to the resources on the CPUC's 2022 baseline list of resources, adopted in Rulemaking 16-02-007. MCE's share of the Incremental System Capacity compliance obligation is 87.5 MW, 50% of which must be online by August 1, 2021, 75% online by August 1, 2022 and 100% online by August 1, 2023. When demonstrating compliance with this obligation, MCE must use the September Net Qualifying Capacity (NQC) of the procured resource. As shown in Table 9, MCE has executed agreements that will satisfy MCE's 2021, 2022, and 2023 incremental capacity requirements.

Table 9: MCE Incremental System Capacity¹⁹

September Net Qualifying Capacity (MW)	2020	2021	2022	2023
Cumulative Incremental System Capacity Requirement	-	43.75	65.63	87.50
Cumulative Incremental System Capacity Contracted	-	89.38	89.38	89.38
Cumulative Incremental System Capacity Net Short/(Long)	-	(45.63)	(23.76)	(1.88)

¹⁸ For example, MCE uses index plus contracts where the supplier schedules power into the CAISO (which contractually constitutes a bundled power delivery to MCE), but the supplier keeps the CAISO revenue, and MCE pays the supplier for the power content attribute.

¹⁹ MCE's incremental system capacity under contract, as listed in Table 9, is based on September Net Qualifying Capacities (NQC) as stated by the California Public Utilities Commission in its 2020 IRP proceeding templates. Based on more-recently published CAISO documents, MCE is expecting 1.15 MW less of September NQC from its incremental system capacity contracts. Either way, MCE has enough incremental system capacity under contract to slightly exceed its requirements pursuant to CPUC Decision 19-11-016.

VI. Procurement

MCE's Procurement Process

MCE has a well-established procurement process that includes the following ten key activities:

1. Load forecasting based on the number and types of customers, potential service territory expansions, opt-out rates, electrification trends, demand-side resources, and weather;
2. Integrated resource planning based on load forecasts, renewables and emissions targets, agency-wide budgetary considerations and customer rate implications, long-term contracting requirements and goals for new steel in the ground, grid reliability needs and capacity requirements, market price hedging needs and goals for local resources, local resiliency, and local workforce development;
3. Calculating open positions and interim volumetric needs based on MCE's risk management policies;
4. Soliciting volumetric needs through Requests for Offers (RFOs), bilateral discussions or brokers;
5. Evaluating offers using a combination of proprietary and public models;
6. Negotiating (and ultimately executing) power purchase agreements, enabling agreements and confirms – including credit provisions and collateral requirements;
7. Managing pre-Commercial Operation Date (COD) executed contracts and monitoring progress towards key development milestones (such as interconnection status, deliverability studies, siting, zoning, permitting, financing, construction, commercial operation, etc.)
8. Managing post-COD executed contracts: obtaining generation forecasts, bidding/scheduling resources into the CAISO, validating and paying invoices, etc.;
9. Bidding/scheduling MCE's load into the CAISO; and
10. Regulatory compliance reporting.

Renewable Energy Purchases

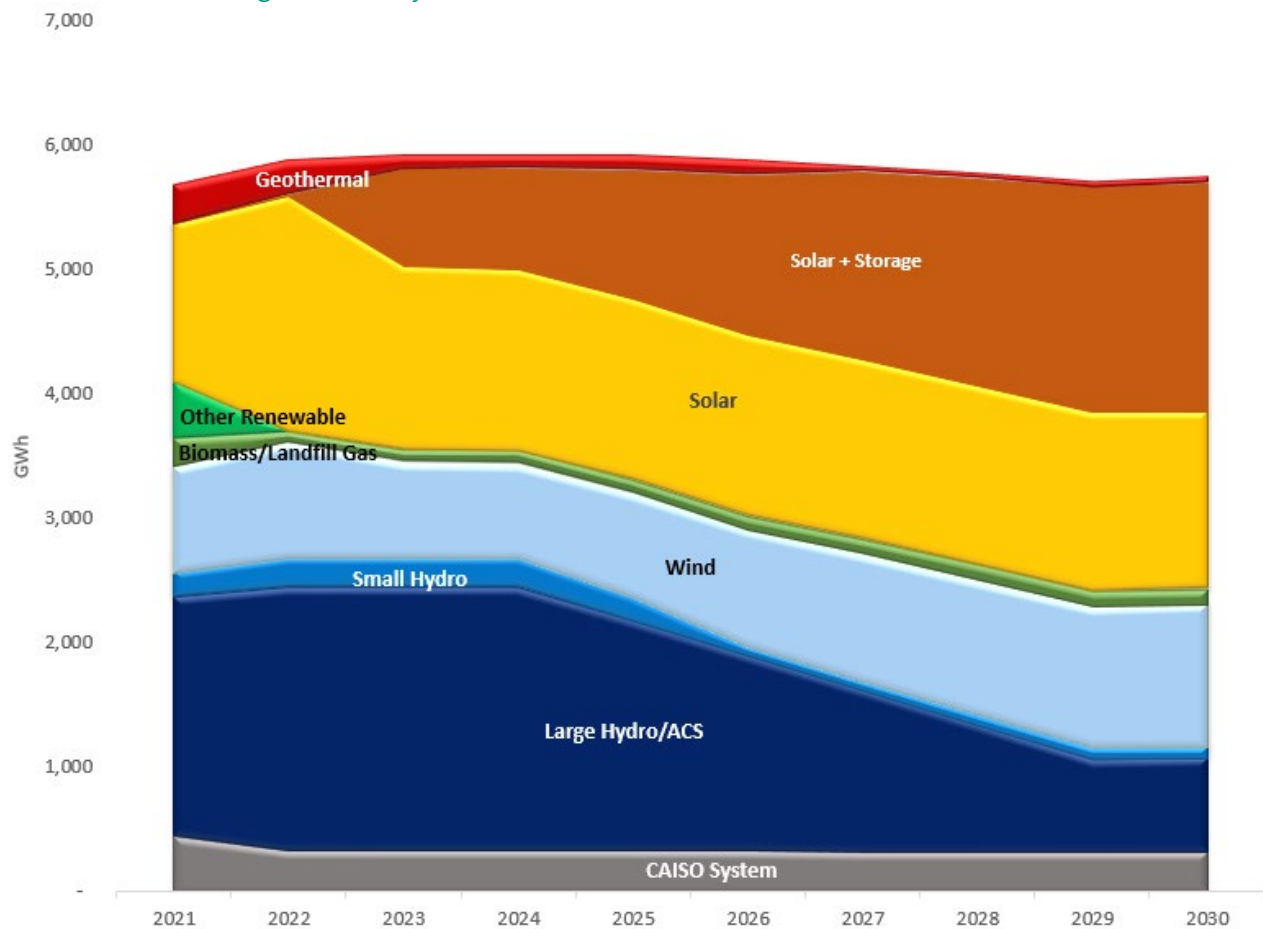
MCE uses a portfolio risk-management approach in its power purchasing program, seeking low cost supply as well as diversity among technologies, production profiles, project sizes and locations, counterparties, length of contract, and timing of market purchases. All these factors are taken into consideration when MCE engages the market.

MCE continually manages its forward load obligations and supply commitments with the objective of balancing cost stability and cost minimization, while leaving some flexibility to take advantage of market opportunities or technological improvements that may arise. MCE closely monitors its open positions for PCC 1 and PCC 2 renewable energy, both of which are based on calendar-year targets. MCE maintains portfolio coverage targets of up to 100% in the near-term (0 to 5 years) and leaves a greater portion open in the medium- to long-term, consistent with generally accepted industry practice.

MCE has no explicit preference for specific renewable energy technologies. MCE's supply preference is for a mix of renewable-energy technologies that will deliver energy in a profile that is generally consistent with its load shape. On that note, and as shown in Figure 12 below, MCE is planning to procure significant quantities of new steel in the ground solar and storage over the planning period, resulting in 2.1 million MWh per year by 2030. In regard to generation project

location, MCE places the greatest value on locally-sited, renewable-energy projects, particularly those located within its service area or within approximately 100 miles. Of next highest preference are projects sited in the North Path 15 region (generally, Northern California), followed by projects elsewhere in California, and finally, out-of-state resources. The projected resource mix during the Planning Period is illustrated in Figure 12.

Figure 12: Projected MCE Resource Mix (GWh), 2021-2030²⁰



Feed-In Tariff

[MCE's Feed-in Tariff \(FIT\)](#) offers a total program capacity of 45 MW on a first-come, first-served basis to renewable resources located in MCE's service area. The FIT offering allows developers to finance local renewable energy projects, while catalyzing local job creation associated with the construction, operation, and maintenance of these local projects. By providing attractive, above-market rates, this program incentivizes renewable development in MCE communities where it otherwise would not be built.

MCE's initial FIT program, which offered 15 MW of capacity to projects sized up to 1 MW, is fully subscribed. Starting in 2018, MCE began the second phase of its FIT program, adding an additional 10 MW of capacity and an updated Tariff for projects in MCE's service area up to 1 MW. Another 20 MW of capacity was offered for new FIT Plus projects sized between 1 MW to 5

²⁰ Figure 12 displays the projected resource mix needed to meet MCE's projected loss-adjusted load. Actual resource utilization to meet loss-adjusted load will depend upon market conditions and resource availability.

MW, with a new applicable Tariff. Table 10 provides an update on the status of MCE's FIT and [FIT Plus](#) projects as of July 31, 2020. All FIT related documents are available on MCE's FIT website.²¹

Table 10: MCE Feed-In Tariff (FIT) and FIT Plus Projects

Project Name	Capacity (MW)	Annual Output (MWh)	Commercial Operation Date
San Rafael Airport	0.972	1,651	Oct 2012
Cost-Plus	0.261	548	Sept 2016
Freethy Industrial Park Unit #1	0.998	2,094	Oct 2016
Freethy Industrial Park Unit #2	0.998	2,094	Oct 2016
Cooley-Quarry 1 (Local Sol)	0.990	2,864	Jul 2017
Oakley RV & Boat Storage	0.990	1,750	Jul 2018
EO Products	0.056	92	Dec 2018
Central Marin Sanitary Agency	0.750	1,314	Apr 2019
DRES Quarry 2.4	0.100	285	May 2019
American Canyon Solar A	0.990	2,645	Sep 2019
American Canyon Solar B	0.990	2,645	Sep 2019
American Canyon Solar C	0.990	2,645	Sep 2019
Soscol Ferry C	0.990	2,601	TBD
Soscol Ferry D	0.990	2,601	TBD
San Rafael Airport Unit #2	0.972	2,037	TBD
Silveira Ranch A	0.999	2,386	TBD
Silveira Ranch B	0.999	2,386	TBD
Silveira Ranch C	0.999	2,386	TBD
Lake Herman Solar	5.000	13,604	TBD
Total	20.034	48,088	

Large Hydroelectric and ACS

MCE anticipates that its large hydroelectricity and ACS supplies will be met primarily through short- and medium-term purchases of California and Pacific Northwest hydroelectricity and ACS, but MCE is also exploring longer-term opportunities. MCE has begun taking delivery of hydroelectricity outside the CAISO in 2020, taking responsibility for importing into California and CAISO intertie scheduling. Becoming an importer of record will provide MCE with more opportunities to procure large hydroelectricity going forward.

Fixed-Price Forward Contracts

MCE will continue to engage in fixed-price forward contracts in order to hedge the market price risk associated with its CAISO load. In doing so, MCE considers a variety of factors including cost control and competitiveness. Entering into fixed-price forward contracts enables MCE to meet budget and rate-setting objectives by increasing cost certainty. However, it is appropriate to maintain modest flexibility for incorporation of new supply- or demand-side resources and limited exposure to CAISO market prices to ensure optimal resource portfolio diversification. In light of these considerations, the following contracting guidelines for fixed-price energy contracts will be used during the Planning Period.

Table 11: MCE Fixed-Price Energy Contracting Guidelines

Time Horizon	Fixed-Price Energy Contracting Guidelines
Current Year	70% to 100%
Year 2	60% to 95%

²¹ <https://www.mcecleanenergy.org/feed-in-tariff/>.

Year 3 and Beyond	Up to 70%
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The contracting guidelines above serve to inform MCE's hedging targets used to mitigate price and supply risk. Execution of master power purchase and sale agreements with multiple, credit-worthy counterparties has enabled, and will continue to enable, energy purchases through transaction-specific confirmations whenever appropriate, consistent with the policies set forth in this plan.

Resource Adequacy Transactions

MCE may engage in purchases or sales of RA capacity from generation resources that qualify to meet RA requirements in accordance with CPUC and CAISO regulations. Terms may range from one month to ten years or more. RA is also often bundled with energy and renewable attributes under MCE's renewable energy PPAs.

Procurement Methods

In order to effectively plan and manage its portfolio, MCE differentiates contracts by their term length including:

- Short-term: up to twelve months;
- Medium-term: longer than twelve months, up to five years;
- Intermediate-term: longer than five years, up to ten years; and
- Long-term: longer than ten years.

Based upon the expected contract tenor, MCE may use a variety of methods – including competitive solicitations, standard contract offerings, and bilaterally negotiated agreements – throughout the Planning Period.

For long-, intermediate-, and medium-term purchase commitments, MCE typically uses competitive solicitations, such as its Open Season solicitation, or standard offer contracts, like its FIT. Through a competitive solicitation, MCE issues a request for offers and concurrently evaluates multiple proposals in the context of market conditions before entering negotiations with those respondents that provide the most compelling offers. Occasionally, MCE will issue ad hoc competitive solicitations or engage in independent bilateral negotiations to meet specific resource needs for which inclusion in an annual solicitation is not appropriate.

With regard to short-term power purchases, MCE may negotiate bilateral agreements directly, especially for unique or time-sensitive transactions that do not lend themselves to inclusion in a competitive solicitation. Alternatively, particularly in markets with sufficient transparency to ensure competitive outcomes, MCE may negotiate short-term transactions via its scheduling coordinator or independent energy brokers or marketers.

MCE procures energy and Resource Adequacy consistent with its Board-approved Energy Risk Management Policy.

Procurement Authorities

MCE's energy procurement throughout the Planning Period will be consistent with the delegation of authorities of the Board, including Resolution 2018-03, and/or any other delegation of authorities or relevant Resolution of the Board.

MCE's Investment Grade Credit Ratings

MCE was the first CCA to receive a rating from Moody's Investors Service, which awarded MCE an [investment grade rating of Baa2](#) with a Stable Outlook in 2018. In 2019 MCE was the first CCA to receive two investment grade ratings after [Fitch Ratings awarded MCE a BBB rating](#) with a Stable Outlook. In August of 2020, [Fitch upgraded MCE to BBB+](#) with a Stable Outlook citing MCE's strengthening financial position.

Both credit rating agencies evaluate MCE as an investment worthy entity due to demonstrated evidence that the CCA business model is working on sound operational and financial evidence, full recovery of costs through independent local rate-setting, strong financial flexibility due to positive cash flows, and adequate liquidity levels with the expectation that MCE will meet and maintain a reserve target of 140 days cash on hand. As of the end of the March 31, 2020 fiscal year, MCE maintained over 190 days cash on hand and increased the targeted liquidity reserve to 240 days, and our target net position from 40% to 60% of operating expenses. MCE expects to meet these new targets by March 31, 2022.

Appendix A: Load and Resource Table

Table 12: MCE Resource Balance

MCE Resource Balance										
July 2020										
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
I. Energy Requirements (GWh)										
Baseline Retail Load	5,735	5,955	5,985	6,015	6,045	6,075	6,106	6,136	6,167	6,198
Energy Efficiency	(19)	(26)	(33)	(39)	(45)	(52)	(58)	(54)	(53)	(52)
Distributed Generation	(719)	(827)	(909)	(1,000)	(1,100)	(1,210)	(1,331)	(1,465)	(1,611)	(1,659)
Electric Vehicle Load	357	445	534	611	680	734	782	831	881	933
Retail Load (Net of EE/DG/EV)	5,354	5,548	5,577	5,587	5,580	5,547	5,498	5,449	5,384	5,420
Distribution Line Losses and Unaccounted For Energy	321	333	335	335	335	333	330	327	323	325
Total Energy Requirements	5,676	5,881	5,912	5,922	5,915	5,880	5,828	5,776	5,707	5,745
II. Volume Targets										
Light Green Renewable Energy Volume Targets (GWh)										
Portfolio Content Category 1	2,870	3,168	3,164	3,167	3,422	3,658	3,878	4,091	4,286	4,310
Portfolio Content Category 2	201	-	-	-	-	-	-	-	-	-
Subtotal, Light Green Renewable Energy Volume Targets	3,070	3,168	3,164	3,167	3,422	3,658	3,878	4,091	4,286	4,310
Deep Green Incremental Renewable Energy Targets (GWh)										
Portfolio Content Category 1	237	268	303	309	316	322	328	335	342	348
Large Hydro/ACS Energy Volume Targets (GWh)	1,919	2,112	2,110	2,111	1,843	1,568	1,293	1,023	756	761
III. Contracted Resources										
Renewable Resources Under Contract (GWh)										
Portfolio Content Category 1	3,411	2,814	2,324	2,292	2,223	2,093	1,998	1,992	1,984	1,967
Portfolio Content Category 2	200	-	-	-	-	-	-	-	-	-
Subtotal, Renewable Resources Under Contract	3,611	2,814	2,324	2,292	2,223	2,093	1,998	1,992	1,984	1,967
Large Hydro/ACS Resources Under Contract (GWh)	625	625	225	225	-	-	-	-	-	-
IV. Open Positions										
Renewables Open Position (GWh)										
Portfolio Content Category 1	(304)	622	1,144	1,184	1,515	1,887	2,207	2,434	2,643	2,692
Portfolio Content Category 2	1	-	-	-	-	-	-	-	-	-
Total Renewables Open Position (GWh)	(304)	622	1,144	1,184	1,515	1,887	2,207	2,434	2,643	2,692
Large Hydro/ACS Open Position (GWh)	1,294	1,487	1,885	1,886	1,843	1,568	1,293	1,023	756	761

Appendix B: MCE Expansion Phases

Table 13: MCE Expansion Phases

MCE Phase	Description	Number of Accounts at Enrollment Date	Implementation Date
Phase 1	MCE Member (municipal) accounts & a subset of residential, commercial and/or industrial accounts, comprising approximately 20% of total customer load within MCE's original member agencies	8,500	May 7, 2010
Phase 2A	Additional commercial and residential accounts, comprising approximately 20% of total customer load within MCE's original member agencies (incremental addition to Phase 1)	6,100	August 2011
Phase 2B	Remaining accounts within Marin County	79,000	July 2012
Phase 3	Residential, commercial, agricultural, and street lighting accounts within the City of Richmond	35,000	July 2013
Phase 4A	Residential, commercial, agricultural, and street lighting accounts within the unincorporated areas of Napa County	14,000	February 2015
Phase 4B	Residential, commercial, agricultural, and street lighting accounts within the City of San Pablo, the City of Benicia, and the City of El Cerrito	30,000	May 2015
Phase 5	Residential, commercial, agricultural, and street lighting accounts within the Cities of American Canyon, Calistoga, Lafayette, Napa, Saint Helena, Walnut Creek, and the Town of Yountville	83,000	September 2016
Phase 6	Residential, commercial, agricultural, and street lighting accounts within the Cities of Concord, Danville, Martinez, Moraga, Oakley, Pinole, Pittsburg, San Ramon, and unincorporated Contra Costa County	216,300	April 2018
Phase 7	Residential, commercial, agricultural, and street lighting accounts within unincorporated Solano County	11,000	April 2020
Phase 8	Residential, commercial, agricultural, and street lighting accounts within the Cities of Pleasant Hill and Vallejo	64,000	April 2021

Appendix C: Regulatory Requirements

Renewable Portfolio Standard

California's Renewable Portfolio Standard (RPS) program requires California load-serving entities (LSEs) to supply their retail sales with minimum quantities of eligible renewable energy. As shown in Table 14, the RPS requirements have increased over the years, and such requirements (expressed as percentages of retail sales) are enforced within discrete compliance periods. For each compliance period, LSEs, such as MCE, are required to meet the weighted average of the RPS requirements for that period, with retail sales providing the weights. For example, in compliance period #3, LSEs are required to supply their retail sales with at least the following portion of renewable energy: $[(2017 \text{ sales} \times 27\%) + (2018 \text{ sales} \times 29\%) + (2019 \text{ sales} \times 31\%) + (2020 \text{ sales} \times 33\%)] / [2017 \text{ through } 2020 \text{ sales}]$.

Table 14: RPS Requirements by Compliance Period

Year	Compliance Period	RPS Requirement (% of Retail Sales)
2011	1	20.0
2012	1	20.0
2013	1	20.0
2014	2	21.7
2015	2	23.3
2016	2	25.0
2017	3	27.0
2018	3	29.0
2019	3	31.0
2020	3	33.0
2021	4	35.8
2022	4	38.5
2023	4	41.3
2024	4	44.0
2025	5	46.7
2026	5	49.3
2027	5	52.0
2028	6	54.7
2029	6	57.3
2030	6	60.0

In order to supply their retail sales with minimum portions of renewable energy, LSEs must acquire and retire renewable energy credits (RECs). Each REC represents the environmental and renewable attributes associated with 1 MWh of eligible renewable energy. Each REC is created when the electricity is generated and is assigned a vintage year and month. RECs are created in a database known as the Western Renewable Energy Generation Information System (WREGIS),

which is used across the Western Interconnection (AC) power grid to track the environmental and renewable attributes of wholesale electricity. When acquiring and retiring RECs to meet its RPS requirements, MCE must also comply with additional requirements related to three Portfolio Content Categories (PCCs), defined as follows:

- PCC 1: RECs bundled with electricity from renewable facilities with a first point of interconnection within a California Balancing Authority (CBA), or RECs from facilities that schedule electricity into a CBA, and without substitute energy. In other words, these are RECs bundled with electricity that comes from the renewable energy facility. If that facility is outside a CBA, the electricity must be scheduled into a CBA, and only the fraction of the schedule actually generated by the renewable facility may count (i.e., any Ancillary Services needed to support the schedule are not counted).
- PCC 2: RECs bundled with electricity from renewable facilities, where the physical renewable generation is sunk outside of a CBA, and substitute energy is imported into a CBA within the same calendar year. In other words, PCC 2 RECs are bundled with electricity, but the electricity scheduled into the CBA does not have to come from the renewable energy facility. Instead, the electricity is provided by a substitute facility that is not necessarily renewable, as long as the electricity is scheduled into the CBA within the same calendar year.
- PCC 3: RECs produced by a renewable facility, but unbundled and sold without the associated electricity.

In accordance with its RPS requirements, MCE must acquire and retire RECs in line with PCC-related restrictions. Table 15 shows the PCC-related restrictions for compliance period three.

Table 15: RPS PCC Restrictions for Compliance Period 3

Year	Compliance Period	RPS Requirement (% of Retail Sales)	PCC 1 Minimum (% of RPS)	PCC 3 Maximum (% of RPS)
2017	3	27.0	75	10
2018	3	29.0	75	10
2019	3	31.0	75	10
2020	3	33.0	75	10

Senate Bill 350

Pursuant to the Clean Energy Pollution Reduction Act, SB 350 (2015), and starting with Compliance Period 4 (which begins January 1, 2021), at least 65% of the RECs retired for the purpose of meeting the Procurement Quantity Requirement (PQR) must come from contracts that are ten or more years in duration.

Senate Bill 100

The California Renewables Portfolio Standard Program: emissions of greenhouse gasses, SB 100 (2018), directs all LSEs to procure 60% of their portfolios from RPS-eligible resources by 2030 (as explained in the RPS section above). SB 100 also directs LSEs to source 100% of their retail sales from zero-carbon resources (or eligible renewable resources) by 2045. In January 2021, California regulators (CEC, CARB, CPUC) are required to issue a joint agency report to clarify which specific resources count toward meeting the 2045 requirement.

Power Source Disclosure

California law requires LSEs to disclose the types of power resources used to supply retail sales. This mandate, known as the Power Source Disclosure (PSD) program, is a consumer information program managed by the California Energy Commission (CEC) on an annual basis. A key result of the PSD program is the Power Content Label (PCL), which is an LSE-specific document that shows the breakdown of power resource types for each of the LSE's retail products and includes the breakdown of resource types for the overall California grid. The PCL is distributed to customers each summer.

The Greenhouse Gases Emissions Intensity Reporting: Retail Electricity Suppliers, AB 1110 (2016), directs the CEC to adopt a methodology for the calculation of GHG emissions intensity for each electricity product offered by a retail supplier, such as MCE. Based on CEC rulemaking activities thus far, such GHG emissions will be reported beginning with 2020 PCLs (which will be produced and distributed in the summer of 2021). As part of this GHG emission reporting methodology, PCC 2 resources will be assigned GHG emissions based on the intensity of the substitute power being imported into California. In addition, beginning with 2019 PCLs, the CEC has disaggregated ACS power into its underlying technology types, the vast majority of which is large hydroelectric.

Resource Adequacy

The Resource Adequacy (RA) program is a California program jointly administered by the CPUC, CEC, and CAISO that directs LSEs to procure forward capacity to ensure that electricity demand can be met every moment of the day. The procured RA capacity must be offered into the CAISO's Day-Ahead and Real-Time markets to ensure the markets can clear (i.e., there will be enough supply in the right locations and with sufficient ramping capability to meet load during all times of the day and night). The RA program directs LSEs to procure three products: System RA; Local RA; and Flexible RA, with Local RA obligations being assigned to a Central Procurement Entity (CPE) starting in 2023, per CPUC Decision 20-06-002. LSEs' RA requirements are offset by CPE procurement and other CPUC-directed procurement made on behalf of LSEs by the incumbent utility by a Cost Allocation Mechanism (CAM). In addition, pursuant to CPUC Decision 19-11-016, LSEs are required to procure "Incremental System Capacity, which is RA capacity that is in addition to the resources on the CPUC's 2022 baseline list of resources. MCE's share of the incremental System Capacity compliance obligation is 87.5 MW, 50% of which must be online by August 1, 2021; 75% online by August 1, 2022; and 100% online by August 1, 2023. When demonstrating compliance with this obligation, MCE must use the September Net Qualifying Capacity (NQC) of the procured resource.

In order to meet its System RA requirements, MCE must demonstrate that it has secured capacity equal to 115% of its expected peak load for each month of the year. To demonstrate compliance, LSEs must submit a year-ahead filing on or about October 31 of each year, and twelve individual monthly filings. For the year-ahead filing, MCE must demonstrate it has procured 90% of the 115% system requirement for the upcoming year's five summer months, defined as May through September. For the 12 monthly filings (each submitted 45 days in advance of the relevant month), MCE must demonstrate it has procured 100% of the 115% requirement. For reference, the 115% requirement is often referred to as the expected peak load plus a 15% planning reserve margin. When demonstrating System RA capacity, MCE must count only the NQC of each resource included in its filings. The NQC of a resource is published by CAISO and is the capacity (one number for each month of the year) that an LSE can rely upon to meet a given month's peak load system conditions. For wind and solar resources, the NQC calculations must consider the

intermittent and seasonal nature of such resources, and are based on an Effective Load Carrying Capacity (ELCC) methodology that further reduces the amount a solar or wind resource can contribute towards meeting an LSE's RA requirements.

In order to meet its Local RA requirements, MCE must demonstrate that it has procured capacity in specific transmission-constrained (i.e., Local) areas equal to its assigned share of CAISO's need for each month of the year. The assigned requirement for each local area is one number for the entire year, but MCE must show that it has secured enough capacity in each month to meet this number. The CAISO has established a list of seven local areas in PG&E's transmission area: Humboldt; North Coast/North Bay; Sierra; Stockton; Greater Bay Area; Greater Fresno; and Kern.

In accordance with CPUC Decision 19-02-022, MCE must procure Local RA three years in advance (i.e., MCE must demonstrate it has procured 100% of its year-one requirement, 100% of its year-two requirement and 50% of its year-three requirement. However, with CPUC Decision 20-06-002, Local RA obligations are being assigned to a Central Procurement Entity starting in 2023. As a result, on October 31, 2020 (i.e., MCE's 2021 year-ahead RA filing), MCE will only need to demonstrate that it has secured 100% of its 2021 and 2022 Local RA requirements. It will not need to demonstrate procurement of any Local RA for 2023 because that procurement, and future years' local RA procurement, will be the responsibility of the Central Procurement Entity.

In order to meet its Flexible RA requirements, MCE must demonstrate that it has procured Flexible capacity (i.e., resources with operational attributes that can respond quickly to grid needs in real time) equal to its assigned share of CAISO's flexibility need (based in part on the largest expected three-hour ramp of system load) for each month of the year. In MCE's year-ahead filing, MCE must demonstrate it has procured 90% of its assigned flexible-capacity requirement for each month of the upcoming year. For the twelve individual monthly filings, MCE must demonstrate 100% of its assigned flexible capacity requirement. When demonstrating Flexible RA capacity, MCE must count only the Effective Flexible Capacity (EFC) of each resource it includes in its filings. At a high level, the EFC of a resource is published each year by CAISO and is the capacity (one number for each month of the year) that an LSE can rely upon to help meet that month's system ramping needs. For this reason, only resources that can ramp and sustain energy output for at least three hours are eligible to receive an EFC value. Flexible RA is offered in the market as a bundled product, so LSEs will purchase either System or Local resources which are coupled with an EFC value.

Energy Storage

The California Energy Storage Bill, AB 2514 (2010) directed the CPUC to establish energy storage targets for IOUs, CCAs, and other LSEs. CPUC Decision 13-10-040 established an energy storage procurement target for CCAs and electric service providers equal to 1% of their forecasted 2020 peak load. Based upon current load forecasts, the decision requires MCE to install 12 MW of energy storage no later than 2024. Beginning on January 1, 2016, and every two years thereafter, MCE must file an advice letter demonstrating compliance with this requirement, progress toward meeting this target, and a description of the methodology for ensuring projects are cost-effective.

In CPUC Decision 17-04-039, the CPUC adopted an "automatic limiter" that modifies the CCA energy storage obligation. By applying the limiter, each CCA's total energy storage obligation should not exceed the energy storage obligation of the incumbent IOU, including any IOU-procured storage resources that receive cost recovery from the CCA's customers through distribution rates and non-bypassable charges.

Appendix D: Key Acronyms and Terminology

Key Legislation

AB 32 – Assembly Bill 32, the Global Warming Solutions Act of 2006 | AB 32 is an environmental law in California that established a timetable to bring California into near compliance with the provisions of the Kyoto Protocol.

AB 117 – Assembly Bill 117, Foundational Legislation for Community Choice Aggregation | AB 117 is the California legislation passed in 2002 that enabled community choice aggregation, authored by then Assemblywoman Carole Migden.

SB 790 – Senate Bill 790, Charles McGlashan Community Choice Aggregation Act | SB 790, authored by state Senator Mark Leno, was passed in 2012. This bill instituted a code of conduct, associated rules, and enforcement procedures for IOUs regarding how they interact with CCAs. This bill also clarified a CCA's equal right to participating in ratepayer-funded energy efficiency programs.

SB 350 – Senate Bill 350, Clean Energy and Pollution Reduction Act of 2015 | SB 350 established California's 2030 greenhouse gas reduction target of 40% below 1990 levels. It sets 2030 targets for energy efficiency and renewable electricity, along with other actions aimed at reducing emissions across the energy and transportation sectors as a step towards the 2050 goals of reducing emissions to 80% below 1990 levels.

Terminology

Bundled Customers | Bundled customers receive both their electricity generation and distribution services from the same entity. If a customer "opts out" of MCE service, they would be a bundled customer of PG&E.

Unbundled Customers | Unbundled customers receive their electricity generation and distribution services from separate entities. Customers of MCE are considered unbundled customers because they purchase their electricity generation services from MCE and their electricity distribution services from PG&E.

Tiered Rates | A rate structure in which the retail price of electricity increases incrementally as a customer reaches certain thresholds (or 'tiers') of total monthly usage. In other words, at 'Tier 1' (up to XXX kWh/month), a customer pays \$0.0X/kWh; while at 'Tier 2' usage (above XXX kWh/month) a customer pays \$0.XX/kWh.

Key Acronyms

CAISO – California Independent System Operator | The CAISO operates the California transmission grid, and is sometimes referred to as the "air traffic controller" of the grid. The CAISO manages, but does not own, the transmission system, and oversees grid maintenance.

CalCCA – California Community Choice Association | CalCCA is a trade association consisting of the currently operating CCAs around the state of California. Other groups that are considering CCA or in the process of launching can join as affiliate members.

CAM – Cost Allocation Mechanism | CAM is a mechanism for passing through Resource Adequacy costs of generation resources – generally new resources brought online by an investor-owned utility (IOU) such as PG&E – to customers that do not receive generation service from the IOU. The generation facility is supposed to fulfill a system or local area reliability need.

CAP – Climate Action Plan | CAPs are produced by municipalities to help aid in reduction of greenhouse gas emissions within their jurisdiction. They document greenhouse gas emission inventories, strategies for meeting reduction targets, community goals and municipal goals, and other sustainability metrics. These documents are often updated yearly but can be updated less so. Some communities may not have a CAP.

CARB – California Air Resources Board | CARB is the State’s agency established by California’s Legislature in 1967 to: 1) attain and maintain healthy air quality; 2) conduct research to determine the causes of and solutions to air pollution; and 3) address the issue of motor vehicles emissions. Today CARB is tasked with implementing the State’s efforts to reduce and track the reduction of greenhouse gases (GHGs) emitted statewide, by overseeing the AB 32 Scoping Plan and managing major GHG-related programs like Cap-and-Trade and the Low Carbon Fuel Standard. CARB with guidance from the Governor and Legislature controls how revenues from these programs are spent to further the State’s GHG reducing efforts.

CARE – California Alternate Rates for Energy | CARE is a program that allows low-income energy customers to receive a 30–35 percent discount on their electric and natural gas bills. Customers may be eligible for CARE if they are enrolled in public assistance programs such as Food Stamps and Temporary Assistance for Needy Families (TANF). There are no changes to the CARE discount for CCA customers.

CCA – Community Choice Aggregation | CCA refers to the statutory authority of cities and counties to procure energy on behalf of electricity customers within their jurisdictions. In other words, CCA allows cities and counties to aggregate the buying power of individual electricity customers within their borders to secure an alternative energy supply. MCE is the first operational CCA in California. Other operational CCAs in California include Sonoma Clean Power (SCP) and Lancaster Choice Energy (LCE).

CCE – Community Choice Energy | CCE is used interchangeably with CCA by the public and other entities.

CEC – California Energy Commission | The CEC is California’s primary energy policy and planning agency. It has responsibility for activities that include forecasting future energy needs, promoting energy efficiency through appliance and building standards, and supporting renewable energy technologies.

C&I – Commercial and Industrial | C&I customers have different rates and programs available to them than residential customers. C&I customers can vary widely from industrial users to small businesses.

CPUC – California Public Utilities Commission | The CPUC, also simply called “the Commission,” is the entity that regulates privately-owned utilities in the state of California, including electric power, telecommunications, railway, for-hire passenger carriers, natural gas and water companies. The CPUC has limited jurisdiction over CCAs.

DA – Direct Access | DA is an option that allows eligible customers to purchase their electricity directly from competitive generation providers. There are legislatively mandated caps on DA that have gradually increased since the energy crisis. Large energy users in particular seek the cost certainty associated with being on DA service.

DER – Distributed Energy Resource | DER is a relatively new term that refers to a broad number of energy resource types (roof-top solar, fuel cells, energy storage, demand response, electric vehicles, energy efficiency controls, etc.) that are deployed along the distribution grid level. DERs can be controlled in aggregate to behave like localized generation resources there by increasing local grid reliability while meeting the constraints of broader grid reliability needs.

DG – Distributed Generation | DG refers to small, modular power sources sited at the point of power consumption. One example of residential distributed generation is an array of solar panels installed on a home's roof.

DGEMS – Distributed Generation Enabled Microgrid Services | This is a PG&E proposal to implement new distributed energy resources in order to reduce impacts of Power Safety Shutoff (PSPS) events.

DR – Demand Response | DR is a way of controlling customers' electricity demand through either voluntary or obligatory programs via either manual or automated control systems. While there are many different flavors of DR designed to attain distinct types of benefits, DR is generally intended to shift electricity demand to better align with the real-time electricity supply.

DSM – Demand-Side Management | Methods used to manage and shift demand for energy, most often to times of the day when the cost of energy is less. DSM activities include energy efficiency programs, electricity load shifting activities and devices, and fuel substitutions.

EE – Energy Efficiency | EE is a way of managing and restraining the growth in energy consumption. It refers to using less energy to provide the same service. For example: In the summer, efficient windows keep the heat out so that the air conditioner runs less often which helps save electricity.

ESAP – Energy Savings Assistance Program | The Energy Savings Assistance Program provides no-cost weatherization services to low-income households who meet the California Alternate Rates for Energy (CARE) income guidelines. Some of the services provided include attic insulation, energy efficient refrigerators, energy efficient furnaces, and weather stripping.

ESP – Electricity Service Provider | ESPs are non-utility entities that offer Direct Access (DA) electric service to customers within the service territory of an electric utility. CCAs are not considered ESPs. However, ESPs, CCAs and investor-owned utilities (IOUs) are all considered load-serving entities (LSEs).

FERA – Family Electric Rate Assistance | FERA is a monthly bill discount program that is eligible to customers who income-qualify and have three or more individuals living in their household.

FIT – Feed-In Tariff | FITs are long-term, standard-offer contracts offered by electricity retailers to small-scale renewable developers for the procurement of renewable energy. MCE currently offers a FIT program that enjoys a high level of participation and encourages local development of renewable energy.

GHG – Greenhouse Gas | GHGs are gases in Earth's atmosphere that prevent heat from escaping into space. The burning of fossil fuels, such as coal and oil, and deforestation has caused the concentrations of GHGs to increase significantly in the Earth's atmosphere. This increase in GHGs is the driving force behind climate change.

IDSMD – Integrated Demand-Side Management | IDSMD is still being defined by the CPUC but is generally used to refer to coordination among customer-side energy technologies and services. The technologies are often found behind a customer's meter and may be related to distributed generation, energy efficiency, electric vehicles, energy storage, and other areas. The services include demand response programs, specialized rate structures, and education programs. IDSMD is viewed as a way to reduce the negative impact of organizational silos among utilities and regulators and to improve customer understanding of available options.

IOU – Investor Owned Utility | IOU refers to an electric utility provider that is a private company, owned by shareholders. The three IOUs in California are Pacific Gas and Electric (PG&E), Southern California Edison (SCE) and San Diego Gas and Electric (SDG&E). Historically, IOUs in California have operated as 'regulated monopolies' overseen by the California Public Utilities Commission

(CPUC). Approximately 4/5 of California's electricity customers are served by one of the State's three IOUs. The other 20% of customers are served by Publicly Owned Utilities (POUs, also known as Municipal Utility Districts, or MUDs), which are local government-run utilities, such as the Sacramento Municipal Utility District (SMUD) or Palo Alto Utilities. Please refer to 'MUD' and 'POU' below.

ITC – Investor Tax Credit | The ITC tax credit offers incentives for developers to create more solar resources stimulating local economic and job growth while increasing renewable resources.

LFGTE – Landfill Gas To Energy | LFGTE is the process of creating energy from the burning of landfill gas. This process reduces emissions by using the methane produced in landfills to create electricity supply instead of being flared.

LIHEAP – Low Income Home Energy Assistance Program | LIHEAP is a federally-funded program which will pay a customer's energy bill once per year if they're facing shut off, and provide home weatherization services. Preference for home weatherization is given to those with infants and toddlers under 3 years of age. Customers must be qualified to participate based on income and number of household occupants.

LSE – Load-Serving Entity | LSEs are a categorization term that refers to investor-owned utilities (IOUs), electric service providers (ESPs), and CCAs, all of which offer generation service in the IOU's service territory. POUs are excluded from this categorization.

MUD – Municipal Utility District | MUDs are public agencies where a local government serves its own customers with bundled electricity. For example, Sacramento Municipal Utility District (SMUD) serves its customers with power and controls both the lines and the generation. This is different from IOUs which are investor owned and from CCAs which don't own the infrastructure.

NBC – Non-Bypassable Charge | NBCs are line item charges that all distribution customers (both Bundled and Unbundled) must pay. Types of NBCs include the Power Charge Indifference Adjustment (PCIA), though only unbundled customers pay the PCIA. The Public Purpose Program (PPP) charge is also a NBC.

NEM – Net Energy Metering | NEM is a rate category for customers with on-site energy generation (e.g., rooftop solar), in which the amount a customer pays each month is the 'net' amount between what they generate and what they use. NEM allows a customer to be credited when their renewable generation system generates more power than is used on-site. The customer continues to pay for electricity when more power is used on-site than the system produces.

OBF – On Bill Financing | OBF is a financing mechanism in which repayment is integrated into a customer's utility bill.

OBR – On Bill Repayment | OBR is a mechanism for loan repayment in which the loan payments are integrated into a customer's utility bill. MCE's OBR program is closed to new customers.

OIR – Order Instituting Rulemaking | Legislative tool that allows the CPUC to thoroughly investigate a specific issue and the items related to it. This process generally allows the commission to review legislative concerns with input from stakeholders at a more detailed level.

PACE – Property Assessed Clean Energy | PACE is a way of financing energy efficiency upgrades or renewable energy installations for buildings. In areas with PACE legislation in place municipal governments offer a specific bond to investors and then loan the money to consumers and businesses to put towards an energy retrofit. The loans are repaid over the assigned terms (typically 15 to 20 years) via an annual assessment on their property tax bill. One of the most notable characteristics of PACE programs is that the loan is attached to the property rather than an individual.

PAM – Portfolio Allocation Mechanism | PAM is a mechanism for passing through long-term contract costs of generation resources. The proposal would have replaced the PCIA but is currently not under consideration at the CPUC.

PCIA – Power Charge Indifference Adjustment | The PCIA is an “exit fee” that is intended to protect bundled utility customers from paying the “stranded costs” associated with the IOU previously procuring energy on behalf of the customer now being served by a CCA. When customers leave bundled service to purchase electricity from an alternative supplier, such as MCE, the IOU, which had previously contracted for wholesale energy generation to serve these customers, is able to charge these departing customers the cost of that power.

PDP – Peak Day Pricing | PDP is a demand response option for commercial customers in PG&E bundled service. This DR program is not available to MCE customers. Other DR programs are available if customers choose MCE and are no longer eligible for PDP but it is the responsibility of the customer to find a new program.

POLR – Provider Of Last Resort | The POLR is referenced in the event that a CCA, MUD or POU should fail. The IOUs are the POLR making PG&E the POLR for MCE service area.

POU – Publicly Owned Utility | POUs (aka Municipal Utility Districts or ‘MUDs’) are local, publicly owned electric utilities administered by a board of publicly appointed representatives or democratically elected leaders (similar to a CCA). POUs are not within the jurisdiction of the California Public Utilities Commission (CPUC), and are thus subject to different regulation and enforcement than investor-owned utilities (IOUs), electricity service providers (ESPs) and CCAs. Please see ‘MUD’ above.

PPA – Power Purchase Agreement | This is the method through which MCE procures wholesale electricity. These agreements are signed with electric generators in California and the Pacific Northwest to ensure enough energy is purchased on MCE’s behalf to meet state requirements for procurement.

PPP – Public Purpose Program | PPP charges are NBCs collected from all bundled and unbundled customers in order to fund programs such as discounts for low-income customers on the CARE rate and energy efficiency programs.

PSPS – Public Safety Power Shutoff | PSPS events occur during fire season when PG&E or other IOUs intentionally shut down power via transmission lines in order to reduce the risk of fire in a high-risk time period usually indicated by dry conditions with high winds. These may last several hours or many days depending on the severity of the event. PG&E is required to check all lines that were shut off before restarting power to ensure safety.

PTC – Production Tax Credit | The PTC is a tax credit available to make production of new wind resources cost-effective for developers to promote job and economic growth.

PV – Photovoltaic | PV is solar electric generation by conversion of light into electrons. The most commonly known form of solar electric power is roof panels on homes.

RA – Resource Adequacy | RA refers to a statewide mandate for all load-serving entities (LSEs) to procure a certain quantity of electricity resources that will ensure the safe and reliable operation of the grid in real time, over the course of the calendar year (115%). RA also provides incentives for the siting and construction of new resources needed for reliability in the future.

RFP, RFO or RFI – Request For Proposals, Offers or Information | RFPs and RFOs are open market opportunities for contracts with MCE. As a public agency when MCE looks for new project proposals, contract proposals or energy contract offers, we go into the open market for solicitation. Contractors, developers and generators will submit offers or proposals depending on what the contracts are for and MCE will select candidates to enter into contracts with based

on a number of criteria. RFIs are simply a request for information from the market and do not result in a contract.

RPS – Renewable Portfolio Standard | The RPS was created in 2002 under Senate Bill 1078 and most recently modified by SB (1X) 2 (2011). A RPS is a requirement that all Load-Serving Entities (LSEs) maintain a minimum percentage of renewable electricity resources within their broader generation supply portfolio. The present RPS requires all of California’s LSEs to have no less than 33% renewable generation content by 2020. Recently Governor Brown has challenged the State to aspire to a 50% RPS requirement by 2030. The Legislature and the CPUC are exploring means to adopting a higher RPS mandate.

T&C – Terms and Conditions | All electric services and programs have terms and conditions. By California state law when customers enroll in MCE services they must receive a copy of the T&Cs within an allocated time period after start of service.

T&D – Transmission and Distribution | Roughly half of the electric bill consists of T&D charges from PG&E. MCE does not control T&D and has no influence on how these charges are determined. Sometimes “T&D” is used as shorthand for the PG&E portion of an MCE customer’s bill.

TOU – Time-Of-Use pricing | An electric rate schedule in which energy costs vary depending on the time of usage. For example, customers may pay more for energy used during ‘peak’ usage hours, or during the morning and/or evening when intermittent resources (such as solar energy) are less available.

ZNE – Zero Net Energy | A building is ZNE if the amount of energy provided by on-site renewable energy sources is equal to the amount of energy used by the building.

MCE Acronyms

AERN – Advanced Energy Rebuild Napa | MCE customer program providing electrification incentives to customers in Napa that had red tagged homes in the 2018 and 2019 fires.

AIR – Agricultural and Industrial Resource program | MCE energy efficiency program for agricultural and industrial customers.

IRP – Integrated Resource Plan | MCE’s IRP is a procurement plan that is submitted to the CPUC on a yearly basis. It includes contracts, goals, updates on enrollment, procurement and development, information about our service area, emissions information, financial information, and program information.

LIFT – Low-Income Families and Tenants | LIFT is a pilot program run by the customer programs team that focuses on providing energy efficiency services to underserved communities. This is defined as customers who do not have access to traditional services due to inability to meet program requirements for a variety of reasons.