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PINOLE | PITTSBURG | PLEASANT HILL | RICHMOND | SAN PABLO | SAN RAMON | VALLEJO | WALNUT CREEK

Technical Committee Meeting Thursday, November 03, 2022 8:30 A.M.

This Meeting will be conducted via teleconference pursuant to the requirements of [Assembly Bill No. 361](#). By using teleconference for this meeting, MCE continues to promote social distancing measures recommended by local officials.

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

For Viewing Access Join Zoom Meeting:

<https://us02web.zoom.us/j/88221162906?pwd=anRLWVl0czBmRlNlVjV0UDBQcGJ3UT09>

Dial: 1-669-900-9128
Webinar ID: 882 2116 2906
Meeting Password: 589877

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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 9.16.22 Meeting Minutes
 - C.2 Second Amendment to Amended and Restated Renewable Power Purchase Agreement Between Strauss Wind LLC and Marin Clean Energy
 - C.3 Second Amendment to Renewable Power Purchase Agreement Between Marin Clean Energy and Daggett Solar Power 3 LLC

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6. Approval of Operational Integrated Resource Plan (Discussion/Action)
7. Committee Matters & Staff Matters (Discussion)
8. Adjourn

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

DISABLED ACCOMMODATION: If you are a person with 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 SPECIAL TECHNICAL COMMITTEE MEETING MINUTES
Thursday, September 16, 2022
8:30 A.M.

The Technical Committee Meeting was conducted pursuant to the requirements of [Assembly Bill No. 361](#) (September 16, 2021) which allows a public agency to use teleconferencing during a Governor-proclaimed state of emergency without meeting usual [Ralph M. Brown Act](#) teleconference requirements. Committee Members, staff and members of the public were able to participate in the Committee Meeting via teleconference.

Present:	Gina Dawson, City of Lafayette Kevin Haroff, City of Larkspur Devin Murphy, City of Pinole Scott Perkins, City of San Ramon Katie Rice, County of Marin (Acting Chair)
Absent:	John Gioia, Contra Costa County Ford Greene, Town of San Anselmo (Chair) Katy Miessner, City of Vallejo Teresa Onoda, Town of Moraga
Staff & Others:	Jesica Brooks, Assistant Board Clerk Darlene Jackson, Board Clerk Vicken Kasarjian, Chief Operating Officer Ami Kundaria, Internal Operations Assistant Alexandra McGee, Manager of Strategic Initiatives Zae Perrin, Manager of Customer Operations Sabrinna Soldavini, Policy Analyst II Dawn Weisz, Chief Executive Officer

1. Roll Call

Acting Chair Rice called the Special Technical Committee meeting to order at 8:47 a.m. with quorum established by roll call.

2. Board Announcements (Discussion)

There were no announcements.

3. Public Open Time (Discussion)

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

DRAFT**4. Report from Chief Executive Officer (Discussion)**

CEO Dawn Weisz, reported the following:

Flex Alerts

- The first week of September marked the longest and hottest heat wave in California history resulting in 10 consecutive days of Flex Alerts issued from the California Independent System Operator asking all Californians to conserve energy. A huge, coordinated statewide effort ensued to help prevent rolling power outages. Our staff work closely with the Governor's Office, CEC, CAISO, CPUC, and all other load serving entities including the IOUs and CCAs. Here are some highlights of MCE's efforts.
 - Nearly 3,500 MCE customers reduced load through our Peak Flex program or smart EV charging program, MCE Sync.
 - 2 emails were sent to 302,000 customers (every customer with an email on file), asking them to conserve, and had an amazing 56% open rate.
 - Another 2 dozen personalized emails were sent to our largest commercial customers, local government staff, businesses and housing associations.
 - Started airing our own TV commercial encouraging energy conservation from 4-9pm the day before the Flex Alerts started.
- Despite record breaking demand on the grid and the threats and impacts of extreme heat, wildfire and weather, the grid continued to provide power. A thank you was extended to all for helping MCE get the word out to conserve energy and keep the power on for everyone.

Board Retreat

- Upcoming Board retreat on September 29th. A brief survey was sent out to the Board of Directors. The results of the survey will be used to drive a discussion about community needs and which MCE programs and messaging best resonates with constituents.

Governor Press Conference

- Today in Solano County, Governor Newsom signed World-Leading Climate Action Legislation to enact some of the nation's most aggressive climate measures in history. At a clean energy-powered press conference, the Governor also highlighted the record \$54 billion climate investment included in this year's budget.

5. Consent Calendar (Discussion/Action)

C.1 Approval of 7.7.22 Meeting Minutes

DRAFT

- C.2 Proposed License and Software Services Agreement with Power Settlements Consulting and Software, LLC
- C.3 First Amendment to First Agreement with Willdan Energy Solutions

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

Action: It was M/S/C (Murphy/Perkins) to **approve Consent Calendars C1 – C3**. Motion carried by unanimous roll call vote. (Absent: Directors Gioia, Greene, Miessner, and Onoda).

6. Master Services Agreement with Sacramento Municipal Utility District (SMUD) and Schedule A.1 Statement of Work for Data Management and Billing Services (Discussion/Action)

Manager of Customer Operations Zae Perrin, presented this item and addressed questions from Committee members.

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

Action: It was M/S/C (Dawson/Perkins) to **approve the Proposed Master Services Agreement and Proposed Schedule A.1 Statement of Work for Data Management and Billing Services with Sacramento Municipal Utility District ("SMUD")**. Motion carried by unanimous roll call vote. (Absent: Directors Gioia, Greene, Miessner, and Onoda).

7. Draft Electric Schedule VPPT – Virtual Power Plant Tariff (Discussion/Action)

Manager of Strategic Initiatives Alexandra McGee, presented this item and addressed questions from Committee members.

It was recommended that a Subcommittee be established to further discussion the Virtual Power Plant Tariff. Directors Butt, Dawson, Murphy and Rice expressed interest in participating on said committee when presented to the Board of Directors.

Acting Chair Rice opened the public comment period and there were comments from Member of the Public, Howdy Goudey.

DRAFT

Action: It was M/S/C (Haroff/Perkins) to **approve** Electric Schedule VTTP – **Virtual Power Plant Tariff**. Motion carried by unanimous roll call vote. (Absent: Directors Gioia, Greene, Miessner, and Onoda).

8. Follow-up on VAMO (Discussion)

Policy Analyst II Sabrinna Soldavini, presented this item and addressed questions from Committee members.

No action required.

9. Committee & Staff Matters (Discussion)

There were none.

10. Adjournment

Acting Chair Rice adjourned the meeting at 10:05 a.m. to the next scheduled Technical Committee Meeting on October 6, 2022.

Katie Rice, Acting Chair

Attest:

Dawn Weisz, Secretary



November 3, 2022

TO: MCE Technical Committee

FROM: David Potovsky, Principal Power Procurement Manager

RE: Second Amendment to Amended and Restated Renewable Power Purchase Agreement Between Strauss Wind LLC and Marin Clean Energy (Agenda Item #05 C.2)

ATTACHMENT: Second Amendment to Amended and Restated Renewable Power Purchase Agreement Between Strauss Wind LLC and Marin Clean Energy

Dear Technical Committee Members:

Summary:

On October 19, 2018, MCE executed a power purchase agreement (PPA) with Strauss Wind, LLC (Strauss Wind) for the bundled energy and resource adequacy (RA) from a 98.8 MW wind generation facility located in northern Santa Barbara County, CA. The installation is currently under construction and is estimated to come online in Q2, 2023.

The project owner BayWa r.e. (BayWa) has notified MCE that due to a number of changes in conditions, some adjustments to the PPA will be required for the project to remain commercially viable. Amending this contract will serve the interests of both parties and allow the project to proceed.

Key provisions that have been amended include:

- Adjustment to length of contract term
- Adjustment to overall project size
- Adjustment of commercial operation date (COD)

- Adjustment to price
- Increase of collateral posting requirement by developer
- Elimination of excused delay days beyond COD for any reason
- Forfeiture of all damage payments collected to date
- Un-collected damage payments waived
- Inclusion of limited assignment provisions to support pre-pay program
- Inclusion of current CPUC Standard Terms and Conditions

The Strauss Wind project would provide many benefits to MCE. It is particularly valuable as an in-state resource that is capable of delivering energy during critical hours including the evening (4:00-9:00 PM). The generation shape and the resource adequacy (RA) would be complimentary to MCE's existing portfolio.

Fiscal Impacts:

The PPA price is competitive with all similar projects that were submitted during Open Season 2022. MCE would benefit from the fixed cost of the bundled energy and RA when compared with buying these products in the current market. The cost will be accounted for in future energy budget line items.

Recommendation:

Approve Second Amendment to Amended and Restated Renewable Power Purchase Agreement Between Strauss Wind LLC and Marin Clean Energy

Execution Version

**SECOND AMENDMENT TO
AMENDED AND RESTATED RENEWABLE POWER PURCHASE AGREEMENT
BETWEEN
STRAUSS WIND, LLC
AND
MARIN CLEAN ENERGY**

This **SECOND AMENDMENT TO AMENDED AND RESTATED RENEWABLE POWER PURCHASE AGREEMENT** (this “Amendment”) effective as of November 3, 2022 (“Effective Date”), is made between Strauss Wind, LLC, a California limited liability company (“Seller”) and Marin Clean Energy, a California joint powers authority (“MCE” or “Buyer”). Seller and Buyer are referred to individually as a “Party” or collectively as the “Parties”. Capitalized terms not defined herein shall have the meanings ascribed to such terms in the Agreement.

RECITALS

WHEREAS, the Parties entered into that certain Amended and Restated Renewable Power Purchase Agreement, dated October 19, 2018, as amended or amended and restated from time to time (the “Agreement”);

WHEREAS, certain conditions have delayed the Facility’s ability to achieve Commercial Operation by the Expected Commercial Operation Date;

WHEREAS, the Parties are in dispute relating to their respective rights and remedies under the Agreement;

WHEREAS, the Parties now wish to avoid the time and expense of litigation and resolve their dispute; and

WHEREAS, by this Amendment, the Parties seek to finally and fully settle any and all claims that each one Party may have against the other, up to and including the Effective Date hereof, and to agree to all other terms and provisions contained herein.

AGREEMENT

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

1. Amendments to the Agreement.

(a) The Parties hereby agree that the following provisions are added to the Agreement:

“Eligibility. Seller, and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement that: (i) the Project qualifies and is certified by the CEC as an Eligible Renewable Energy Resource (“ERR”) as such term is defined in Public Utilities Code Section 399.12 or Section 399.16; and (ii) the Project’s

output delivered to Buyer qualifies under the requirements of the California Renewables Portfolio Standard. To the extent a change in law occurs after execution of this Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in law. [STC 6].”

“Transfer of Renewable Energy Credits. Seller and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement the Renewable Energy Credits transferred to Buyer conform to the definition and attributes required for compliance with the California Renewables Portfolio Standard, as set forth in California Public Utilities Commission Decision 08-08-028, and as may be modified by subsequent decision of the California Public Utilities Commission or by subsequent legislation. To the extent a change in law occurs after execution of this Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in law. [STC REC-1].”

“Tracking of RECs in WREGIS. Seller warrants that all necessary steps to allow the Renewable Energy Credits transferred to Buyer to be tracked in the Western Renewable Energy Generation Information System will be taken prior to the first delivery under the contract. [STC REC-2].”

“Governing Law. This Agreement and the rights and duties of the Parties hereunder shall be governed by and construed, enforced and performed in accordance with the laws of the state of California, without regard to principles of conflicts of Law. To the extent enforceable at such time, each Party waives its respective right to any jury trial with respect to any litigation arising under or in connection with this Agreement. [STC 17].”

(b) The provisions set forth in Section 1(a) above shall be deemed to be controlling in the event of a conflict with any similar prior language in the Agreement.

(c) The Parties agree that the Agreement is amended as follows:

- i. The appearance of “98.83” under the heading of “Description of the Facility” on the Cover Sheet and with respect to “Guaranteed Capacity” in Exhibit A shall be deleted and replaced with “93.35”.
- ii. The “Milestones” table on the Cover Sheet is deleted in its entirety and replaced with the following:

Milestone	Date for Completion
Financial Close	May 1, 2023
Expected Commercial Operation Date	May 1, 2023

- iii. On the Cover Sheet, after “Delivery Term”, “Twenty (20) Contract Years” is hereby deleted and replaced with “Fifteen (15) Contract Years”.
- iv. The “Expected Energy” table on the Cover Sheet is deleted in its entirety and replaced with the following:

Contract Year	Expected Energy (MWh)
1 – 15	

- v. The “Contract Price” table on the Cover Sheet is deleted in its entirety and replaced with the following:

Contract Year	Contract Price
1 – 15	

- vi. The appearance of “April 1, 2020” with respect to “Capacity Attributes: Full Capacity Deliverability Status and Expected FCDS Date:” under the heading of “Product” on the Cover Sheet is deleted and replaced with “May 1, 2023”.
- vii. Each appearance of “[REDACTED]” with respect to “Development Security:”, “Performance Security:” and “Damage Payment:” under the heading of “Security, Damage Payment, and Guarantor” on the Cover Sheet is deleted and replaced with “[REDACTED]”. The Parties agree that Buyer is in possession of [REDACTED] of Development Security, and Seller shall be required to deliver an additional amount of [REDACTED] of Development Security within 5 Business Days after the execution of this Amendment.
- viii. Section 3.6 is deleted in its entirety and replaced with:

“**Test Energy.** All Test Energy and associated Green Attributes shall be for Seller’s account. Seller shall have no obligation to deliver Test Energy or associated Green Attributes to Buyer. Buyer shall have no obligation to accept and/or pay for Test Energy or associated Green Attributes. Seller is entitled to retain all revenues associated with Test Energy and associated Green Attributes.”
- ix. The phrase “may give rise” in clause (viii) of Section 10.1(c) is deleted and replaced with “shall not give rise”.
- x. A new Section 14.4 is added to the Agreement as follows:

“**Limited Assignment Right:** Buyer may from time to time assign the right to receive all or a portion of the Product that would otherwise be delivered

to Buyer hereunder. In connection with any such assignment, Buyer and Seller agree to execute the limited assignment agreement substantially in the form attached hereto as Exhibit O. For the avoidance of doubt, Buyer will remain responsible for all its obligations under this Agreement related to such assigned Product, including (i) the obligation to pay for such Product to the extent the assignee thereof does not do so and (ii) any damages associated with such assignee's failure to take any such Product."

xi. Exhibit B of the Agreement is amended as follows:

1. Paragraph 1 is deleted in its entirety and replaced with: "[Intentionally deleted.]".
2. Section (b) of Paragraph 2 is deleted in its entirety and replaced with: "[Intentionally deleted.]".
3. Sections (a), (b), and (c), of Paragraph 4 are each deleted in their entirety and replaced with: "[Intentionally deleted.]"

xii. A new Exhibit O, in the form attached hereto as Attachment 1, is made a part of the Agreement.

2. Release and Waiver.

a. This Amendment resolves any and all outstanding issues, claims and liabilities under and with respect to the Agreement up to and including the Effective Date. With respect to the claims under the Agreement for which payment by Seller to MCE has already been made by Seller, or received or applied by MCE, MCE shall retain such payment in full and final satisfaction of such claims.

b. In consideration of the execution of this Amendment, Seller and MCE each unconditionally and irrevocably RELEASE, SETTLE, and FOREVER DISCHARGE the other Party, any affiliates of such Party, and such Party's respective present and former officers, directors, employees, servants, agents, representatives, contractors, successors, assigns, and attorneys ("Releasees") from any and all claims, causes of action, rights, demands, debts, or damages, including attorney's fees and costs, arising out of or in any way related to claims, breaches, performance, or non-performance, including, without limitation, any claimed or actual Event of Default, arising from performance or non-performance under the Agreement at any time prior to the execution of this Amendment. The releases given under the terms of this Amendment shall become effective as of the Effective Date, subject to Seller's posting of the additional Development Security provided for herein and the execution of this Amendment by both Parties.

c. Each party acknowledges that it has read and understands Section 1542 of the California Civil Code which reads as follows: "A general release does not extend to claims that the creditor or releasing party does not know or suspect to exist in his or her favor at the time of executing the release and that if known by him or her, would have materially affected his or her settlement with the debtor or released party." Each Party hereby expressly waives and relinquishes all rights and

benefits under that section and any law of any jurisdiction of similar effect with respect to any claims such Party may have against the other Party or its Releasees.

d. This Amendment is a result of a compromise of disputed claims and shall never at any time or for any purpose be considered as an admission of liability or responsibility of MCE or Seller, each of which continues to deny such liability and disclaim such responsibility.

e. Seller and MCE represent and warrant that no person, party, or other entity is subrogated to any of their rights or their affiliates' rights in connection with any claims under the Agreement and hereby further agree to defend, indemnify, and save harmless the other Party from any and all claims or actions brought by any entity that claims to be or may be subrogated to any of Seller's or MCE's rights in connection with any such claims.

f. Seller represents and warrants that it shall make commercially reasonable efforts to continue development of the Facility until Commercial Operation of the Facility is achieved.

3. General.

a. Agreement Otherwise Not Affected. Except as expressly modified as set forth herein, the Agreement remains unchanged and, as so modified, the Agreement shall remain in full force and effect.

b. Entire Agreement. This Amendment constitutes the entire agreement and understanding of the Parties with respect to its subject matter and supersedes all oral communication or prior writings related thereto. This Amendment has been carefully read by, and the contents hereof are known and understood by, and it is signed freely by each party executing this Amendment.

c. Authority. The Parties represent and warrant to each other that this Amendment: (i) has been validly executed and (ii) has been duly authorized by all corporate action necessary for the authorization thereof.

d. Survival. Should any provision of this Amendment be or become void, illegal or unenforceable, the validity or enforceability of the other provisions of this Amendment will not be affected and will continue in full force and effect. The Parties shall, however, in good faith attempt to agree on the replacement of the void, illegal, or unenforceable provision(s) with legally acceptable clauses that correspond as closely as possible to the sense and purpose of the affected provision. Should any of the provisions or terms of this Amendment require judicial interpretation, the court interpreting or construing this Amendment shall not apply a presumption that such provision(s) or term(s) shall be more strictly construed against one party by reason of the rule of construction that a document is to be construed more strictly against the party who prepared it, it being agreed that the Parties and their counsel participated in the preparation and review of this Amendment.

e. Binding Effect. This Amendment shall be binding upon, inure to the benefit of and be enforceable by the Parties hereto and their respective successors and assigns.

f. Governing Law. THIS AMENDMENT SHALL BE GOVERNED BY AND CONSTRUED, ENFORCED AND PERFORMED IN ACCORDANCE WITH THE LAWS OF

THE STATE OF CALIFORNIA, WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW. TO THE EXTENT ENFORCEABLE AT SUCH TIME, EACH PARTY WAIVES ITS RESPECTIVE RIGHT TO ANY JURY TRIAL WITH RESPECT TO ANY LITIGATION ARISING UNDER OR IN CONNECTION WITH THIS AGREEMENT.

g. Counterparts. This Amendment may be executed in any number of counterparts, each of which when so executed and delivered shall be deemed to be an original and all of which taken together shall constitute but one and the same agreement. Delivery of an executed signature page of this Amendment as a PDF attachment to an email shall be the same as delivery of a manually executed signature page.

h. Reservation of Rights. Except to the extent waived or released hereunder, each of the Parties expressly reserves all of its respective rights and remedies under the Agreement.

[Signatures appear on the following page.]

Execution Version

IN WITNESS WHEREOF, the Parties hereto have caused this Amendment to be duly executed as of the Effective Date.

STRAUSS WIND, LLC

MARIN CLEAN ENERGY

Sign: _____

Sign: _____

Print: _____

Print: _____

Title: _____

Title: _____

MARIN CLEAN ENERGY

Sign: _____

Print: _____

Title: _____

Execution Version

ATTACHMENT 1

EXHIBIT O

FORM OF LIMITED ASSIGNMENT AGREEMENT

FORM OF ASSIGNMENT SCHEDULE [PROJECT NAME]

Assigned Product:

Assigned Delivery Point:

Assigned Prepay Quantity: As set forth in Appendix 2; provided that (i) all Assigned Products shall be delivered pursuant to the Limited Assignment Agreement during the Assignment Period as provided in Appendix 1 and (ii) the Assigned Prepay Quantity is defined for the convenience of PPA Buyer and J. Aron and shall have no impact on the obligations of the Parties under the Limited Assignment Agreement.

APC Contract Price: \$/MWh

Assignment Period:

Other Provisions:

FORM OF LIMITED ASSIGNMENT AGREEMENT

This Limited Assignment Agreement (this “**Assignment Agreement**” or “**Agreement**”) is entered into as of [____], 2022 by and among Strauss Wind, LLC, a California limited liability company (“**PPA Seller**”), Marin Clean Energy, a California joint powers authority (“**PPA Buyer**”), and J. Aron & Company LLC, a New York limited liability company (“**J. Aron**”), and relates to that certain power purchase agreement (the “**PPA**”) between PPA Buyer and PPA Seller as described on Appendix 1. Unless the context otherwise specifies or requires, capitalized terms used but not defined in this Agreement have the meanings set forth in the PPA.

In consideration of the premises above and the mutual covenants and agreements herein set forth, PPA Seller, PPA Buyer and J. Aron (the “**Parties**” hereto; each is a “**Party**”) agree as follows:

1. Limited Assignment and Delegation.

- (a) PPA Buyer hereby assigns, transfers and conveys to J. Aron all right, title and interest in and to the rights of PPA Buyer under the PPA to receive delivery of the products described on Appendix 1 (the “**Assigned Products**”) during the Assignment Period (as defined in Appendix 1), as such rights may be limited or further described in the “Further Information” section on Appendix 1 (the “**Assigned Product Rights**”). All Assigned Products shall be delivered pursuant to the terms and conditions of this Agreement during the Assignment Period as provided in Appendix 1. All other rights of PPA Buyer under the PPA are expressly reserved for PPA Buyer.
- (b) PPA Buyer hereby delegates to J. Aron the obligation to pay for all Assigned Products that are actually delivered to J. Aron pursuant to the Assigned Product Rights during the Assignment Period (the “**Delivered Product Payment Obligation**” and together with the Assigned Product Rights, collectively the “**Assigned Rights and Obligations**”); provided that (i) all other obligations of PPA Buyer under the PPA are expressly retained by PPA Buyer and PPA Buyer shall be solely responsible for any amounts due to PPA Seller that are not directly related to Assigned Products; and (ii) the Parties acknowledge and agree that PPA Seller will only be obligated to deliver a single consolidated invoice during the Assignment Period (with a copy to J. Aron consistent with Section 1(d) hereof). To the extent J. Aron fails to pay the Delivered Product Payment Obligation by the due date for payment set forth in the PPA, notwithstanding anything in this Agreement to the contrary, PPA Buyer agrees that it remains responsible for such payment and that it will be an Event of Default pursuant to Section [____] if PPA Buyer does not make such payment within five (5) Business Days (as defined in the PPA) of receiving notice of such non-payment from PPA Seller.
- (c) J. Aron hereby accepts and PPA Seller hereby consents and agrees to the assignment, transfer, conveyance and delegation described in clauses (a) and (b) above.
- (d) All scheduling of Assigned Products and other communications related to the PPA shall take place between PPA Buyer and PPA Seller pursuant to the terms of the PPA; provided that (i) title to Assigned Product will pass from PPA Seller to J. Aron upon delivery by PPA Seller of Assigned Product in accordance with the PPA; (ii) PPA Buyer is hereby authorized by J. Aron and shall act as J. Aron’s agent with regard to scheduling Assigned Product; (iii) PPA Buyer will provide copies to J. Aron of any Notice (as defined in the PPA) of a Force Majeure Event or Event of Default or default, breach or other occurrence that, if not cured within the applicable grace period, could

result in an Event of Default contemporaneously upon delivery thereof to PPA Seller and promptly after receipt thereof from PPA Seller; (iv) PPA Seller will provide copies to J. Aron of annual forecasts of Metered Energy and monthly forecasts of Available Capacity provided pursuant to Section [] of the PPA; (v) PPA Seller will provide copies to J. Aron of all invoices and supporting data provided to PPA Buyer pursuant to Section [], provided that any payment adjustments or subsequent reconciliations occurring after the date that is 10 days prior to the payment due date for a monthly invoice, including pursuant to Section [], will be resolved solely between PPA Buyer and PPA Seller and therefore PPA Seller will not be obligated to deliver copies of any communications relating thereto to J. Aron; and (vi) PPA Buyer and PPA Seller, as applicable, will provide copies to J. Aron of any other information reasonably requested by J. Aron relating to Assigned Products.

- (e) PPA Seller acknowledges that (i) J. Aron intends to immediately transfer title to any Assigned Products received from PPA Seller through one or more intermediaries such that all Assigned Products will be re-delivered to PPA Buyer, and (ii) J. Aron has the right to purchase receivables due from PPA Buyer for any such Assigned Products. PPA. To the extent J. Aron purchases any such receivables due from PPA Buyer, J. Aron may transfer such receivables to PPA Seller and apply the face amount thereof as a reduction to any Delivered Product Payment Obligation.
- (f) On or before the commencement of the Assignment Period, The Goldman Sachs Group (“Guarantor”), Inc. will issue, in favor of PPA Seller, a guaranty of J. Aron’s payment obligations under this Assignment Agreement substantially in the form of Appendix 3 attached hereto (“Guaranty”).
- (g) Notwithstanding any other provision of this Agreement, PPA Buyer shall be entitled to retain for its own account all CAISO revenues associated with delivery of the Assigned Product to CAISO, including where PPA Buyer is acting as Scheduling Coordinator for the Facility (as defined in the PPA) and through scheduling of ISTs. Nothing in this Agreement modifies or amends any rights or obligations of PPA Buyer and PPA Seller under the PPA with respect to CAISO revenues and costs. As used in this clause (h), the following terms have the meanings specified below.

“**CAISO**” means California Independent System Operator or its successor.

“**CAISO Tariff**” means CAISO’s Federal Energy Regulatory Commission approved tariff, as modified, amended or supplemented from time to time.

“**Inter-SC Trade**” or “**IST**” has the meaning set forth in the CAISO Tariff.

“**Scheduling Coordinator**” means an entity certified by the CAISO as qualifying as a Scheduling Coordinator pursuant to the CAISO Tariff for the purposes of undertaking the functions specified in “Responsibilities of a Scheduling Coordinator,” of the CAISO.

- (h) The Assigned Prepay Quantity set forth in Appendix 2 relates to obligations by and between J. Aron and PPA Buyer and has no impact on PPA Seller’s rights and obligations under the PPA.

2. Assignment Early Termination.

- (a) The Assignment Period may be terminated early upon the occurrence of any of the following:

- (1) delivery of a written notice of termination by either J. Aron or PPA Buyer to each of the other Parties hereto;
 - (2) delivery of a written notice of termination by PPA Seller to each of J. Aron and PPA Buyer following J. Aron's failure to pay when due any amounts owed to PPA Seller in respect of any Delivered Product Payment Obligation and such failure continues for one business day following receipt by J. Aron of written notice thereof;
 - (3) delivery of a written notice by PPA Seller if any of the events described in Section [] [Bankruptcy] of the PPA occurs with respect to J. Aron; or
 - (4) delivery of a written notice by J. Aron if any of the events described in Section [] [Bankruptcy] of the PPA occurs with respect to PPA Seller.
- (b) The Assignment Period will end at the end of last delivery hour on the date specified in the termination notice provided pursuant to Section 2(a), which date shall not be earlier than the end of the last day of the calendar month in which such notice is delivered if termination is pursuant to clause (a)(1) or (a)(2) above. All Assigned Rights and Obligations shall revert from J. Aron to PPA Buyer upon the early termination of the Assignment Period, provided that (i) J. Aron shall remain responsible for the Delivered Product Payment Obligation with respect to any Assigned Product delivered to J. Aron prior to the end of the Assignment Period, and (ii) any legal restrictions on the effectiveness of such reversion (whether arising under bankruptcy law or otherwise) shall not affect the expiration or early termination of the Assignment Period
- (c) The Assignment Period will automatically terminate upon the expiration or early termination of the PPA. All Assigned Rights and Obligations shall revert from J. Aron to PPA Buyer upon the expiration of or early termination of the PPA, provided that (i) J. Aron shall remain responsible for the Delivered Product Payment Obligation with respect to any Assigned Product delivered to J. Aron prior to the end of the Assignment Period, and (ii) any legal restrictions on the effectiveness of such reversion (whether arising under bankruptcy law or otherwise) shall not affect the expiration or early termination of the Assignment Period.
- (d) The Assignment Period will automatically terminate upon delivery by Guarantor of a notice of termination of the Guaranty. All Assigned Rights and Obligations shall revert from J. Aron to PPA Buyer upon the termination of the Assignment Period, provided that (i) J. Aron shall remain responsible for the Delivered Product Payment Obligation with respect to any Assigned Product delivered to J. Aron prior to the end of the Assignment Period, and (ii) any legal restrictions on the effectiveness of such reversion (whether arising under bankruptcy law or otherwise) shall not affect the expiration or early termination of the Assignment Period.

3. Representations and Warranties. The PPA Seller and the PPA Buyer represent and warrant to J. Aron that (a) the PPA is in full force and effect; (b) no event or circumstance exists (or would exist with the passage of time or the giving of notice) that would give either of them the right to terminate the PPA or suspend performance thereunder; and (c) all of its obligations under the PPA required to be performed on or before the Assignment Period Start Date have been fulfilled.

4. Notices. Any notice, demand, or request required or authorized by this Assignment Agreement to be given by one Party to another Party shall be delivered in accordance with

Section [] of the PPA and to the addresses of each of PPA Seller and PPA Buyer specified in the PPA. PPA Buyer agrees to notify J. Aron of any updates to such notice information, including any updates provided by PPA Seller to PPA Buyer. Notices to J. Aron shall be provided to the following address, as such address may be updated by J. Aron from time to time by notice to the other Parties:

J. Aron & Company LLC
200 West Street
New York, New York 10282-2198
Email: gs-prepay-notices@gs.com

5. Miscellaneous. Sections [] (Buyer's Representations and Warranties), [] (Confidential Information), Sections [] (Severability), [] (Counterparts), [] (Amendments), [] (No Agency), [] (Mobile-Sierra), [] (Counterparts), [] (Facsimile or Electronic Delivery), Section [] (Binding Effect) and [] (No Recourse to Members of Buyer) of the PPA are incorporated by reference into this Agreement, *mutatis mutandis*, as if fully set forth herein.

6. U.S. Resolution Stay Provisions. The Parties hereby confirm that they are adherents to the ISDA 2018 U.S. Resolution Stay Protocol ("ISDA U.S. Stay Protocol"), the terms of the ISDA U.S. Stay Protocol are incorporated into and form a part of this Agreement, and for the purposes of such incorporation, (i) J. Aron shall be deemed to be a Regulated Entity, (ii) each of PPA Buyer and PPA Seller shall be deemed to be an Adhering Party, and (iii) this Agreement shall be deemed a Protocol Covered Agreement. In the event of any inconsistencies between this Agreement and the ISDA U.S. Stay Protocol, the ISDA U.S. Stay Protocol will prevail.

7. Governing Law, Jurisdiction, Waiver of Jury Trial.

- (a) **Governing Law.** This Assignment Agreement and the rights and duties of the parties under this Assignment Agreement will be governed by and construed, enforced and performed in accordance with the laws of the State of California, without reference to any conflicts of laws provisions that would direct the application of another jurisdiction's laws.
- (b) **Jurisdiction.** Each party submits to the exclusive jurisdiction of the federal courts of the United States of America for the Northern District of California sitting in the city and county of San Francisco.
- (c) **Waiver of Right to Trial by Jury.** Each party waives, to the fullest extent permitted by applicable law, any right it may have to a trial by jury in respect of any suit, action or proceeding relating to this assignment agreement.

[Remainder of Page Intentionally Blank]

IN WITNESS WHEREOF, the Parties have executed this Assignment Agreement effective as of the date first set forth above.

STRAUSS WIND, LLC

By: _____

Name: _____

Title: _____

MARIN CLEAN ENERGY

By: _____

Name: _____

Title: _____

J. ARON & COMPANY LLC

1. By: _____

Name:

Title:

Execution and delivery of the foregoing Assignment Agreement is hereby approved.

CALIFORNIA COMMUNITY CHOICE FINANCING AUTHORITY

2. By: _____

Name:

Title:

Appendix 1

Assigned Rights and Obligations

PPA: “PPA” means that certain Amended and Restated Power Purchase and Sale Agreement dated [____], by and between Marin Clean Energy and Strauss Wind, LLC, as amended from time to time.

“Assignment Period” means the period beginning on [_____] and extending until [_____] provided that in no event shall the Assignment Period extend past the earlier of (i) the termination of the Assignment Period pursuant to Section 2 of the Assignment Agreement and (ii) the end of the Delivery Term under the PPA; provided that applicable provisions of this Agreement shall continue in effect after termination of the Assignment Period to the extent necessary to enforce or complete, duties, obligations or responsibilities of the Parties arising prior to the termination.

Assigned Product: “Assigned Products” includes all (i) Energy and (ii) Green Attributes (PCC1) produced by the Facility.

Further Information: PPA Seller shall continue to transfer the WREGIS Certificates associated with all Renewable Energy Credits corresponding to all Metered Energy under the PPA pursuant to Section [___] of the PPA, provided that the transferee of such WREGIS Certificates may be changed from time to time in accordance with the written instructions of both J. Aron and Marin Clean Energy upon twenty (20) Business Days’ notice, which change shall be effective as of the first day of the next calendar month, unless otherwise agreed. All Assigned Product delivered by PPA Seller to J. Aron shall be a sale made at wholesale, with J. Aron reselling all such Assigned Product.

Appendix 2

Assigned Prepay Quantity

[NOTE: To be set forth in a monthly volume schedule.]

Appendix 3

Form of GSG Guaranty

, 2022

NAME
ADDRESS

Attention:

Ladies and Gentlemen:

For value received, The Goldman Sachs Group, Inc. (the “Guarantor”), a corporation duly organized under the laws of the State of Delaware, hereby unconditionally guarantees the prompt and complete payment when due, whether by acceleration or otherwise, of all obligations and liabilities, whether now in existence or hereafter arising, of J. Aron & Company LLC, a subsidiary of the Guarantor and a limited liability company duly organized under the laws of the State of New York (the “Company”), to **COUNTERPARTY NAME** (the “Counterparty”) arising out of or under the Limited Assignment Agreement among the Company, the Counterparty and Marin Clean Energy dated as of [], 2022. This Guaranty is one of payment and not of collection.

The Guarantor hereby waives notice of acceptance of this Guaranty and notice of any obligation or liability to which it may apply, and waives presentment, demand for payment, protest, notice of dishonor or non-payment of any such obligation or liability, suit or the taking of other action by Counterparty against, and any other notice to, the Company, the Guarantor or others.

Counterparty may at any time and from time to time without notice to or consent of the Guarantor and without impairing or releasing the obligations of the Guarantor hereunder: (1) agree with the Company to make any change in the terms of any obligation or liability of the Company to Counterparty, (2) take or fail to take any action of any kind in respect of any security for any obligation or liability of the Company to Counterparty, (3) exercise or refrain from exercising any rights against the Company or others, or (4) compromise or subordinate any obligation or liability of the Company to Counterparty including any security therefor. Any other suretyship defenses are hereby waived by the Guarantor.

This Guaranty shall continue in full force and effect until the opening of business on the fifth business day after Counterparty receives written notice of termination from the Guarantor. It is understood and agreed, however, that notwithstanding any such termination this Guaranty shall continue in full force and effect with respect to the obligations and liabilities set forth above which shall have been incurred prior to such termination.

The Guarantor may not assign its rights nor delegate its obligations under this Guaranty, in whole or in part, without prior written consent of the Counterparty, and any purported

assignment or delegation absent such consent is void, except for (i) an assignment and delegation of all of the Guarantor's rights and obligations hereunder in whatever form the Guarantor determines may be appropriate to a partnership, corporation, trust or other organization in whatever form that succeeds to all or substantially all of the Guarantor's assets and business and that assumes such obligations by contract, operation of law or otherwise, and (ii) the Guarantor may transfer this Guaranty or any interest or obligation of the Guarantor in or under this Guaranty, or any property securing this Guaranty, to another entity as transferee as part of the resolution, restructuring or reorganization of the Guarantor upon or following the Guarantor becoming subject to a receivership, insolvency, liquidation, resolution or similar proceeding. Upon any such delegation and assumption or transfer of obligations, the Guarantor shall be relieved of and fully discharged from all obligations hereunder, whether such obligations arose before or after such delegation and assumption or transfer.

THIS GUARANTY SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE INTERNAL LAWS OF THE STATE OF NEW YORK WITHOUT GIVING EFFECT TO PRINCIPLES OF CONFLICTS OF LAW. GUARANTOR AGREES TO THE EXCLUSIVE JURISDICTION OF COURTS LOCATED IN THE STATE OF NEW YORK, UNITED STATES OF AMERICA, OVER ANY DISPUTES ARISING UNDER OR RELATING TO THIS GUARANTY.

In the event the Guarantor becomes subject to a proceeding under the Federal Deposit Insurance Act or Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act (together, the "U.S. Special Resolution Regimes"), the transfer of this Guaranty, and any interest and obligation in or under, and any property securing, this Guaranty, from the Guarantor will be effective to the same extent as the transfer would be effective under such U.S. Special Resolution Regime if this Guaranty, and any interest and obligation in or under this Guaranty, were governed by the laws of the United States or a state of the United States. In the event the Company or the Guarantor, or any of their affiliates, becomes subject to a U.S. Special Resolution Regime, default rights against the Company or the Guarantor with respect to this Guaranty are permitted to be exercised to no greater extent than such default rights could be exercised under such U.S. Special Resolution Regime if this Guaranty was governed by the laws of the United States or a state of the United States.

Very truly yours,

THE GOLDMAN SACHS GROUP, INC.

By: _____
Authorized Officer



November 3, 2022

TO: MCE Technical Committee

FROM: Paul Krebs, Power Procurement Manager

RE: Second Amendment to Renewable Power Purchase Agreement
Between Marin Clean Energy and Daggett Solar Power 3 LLC
(Agenda Item #05 C.3)

ATTACHMENT: Second Amendment to Renewable Power Purchase Agreement
Between Marin Clean Energy and Daggett Solar Power 3 LLC

Dear Technical Committee Members:

Summary:

MCE and Daggett Solar Power 3 LLC are parties to a power purchase agreement ("PPA" or "Daggett"), executed September 25, 2020, for deliveries from a 110 megawatt ("MW") solar and a co-located 60 MW battery energy storage facility located in San Bernadino, California.

The project owner, Clearway, notified MCE that due to unexpected and unprecedented market wide challenges, some adjustments to PPA terms would be needed to preserve the viability of the project. Through negotiations with Clearway, MCE staff worked to make necessary adjustments while adding beneficial terms to ensure MCE shares any advantages resulting from the Inflation Reduction Act. Also, additional language was added to make sure that the project is fully compliant with current California Public Utility Commission ("CPUC") Renewable Portfolio Standard ("RPS") rules and regulations.

The Daggett project is a valuable addition to MCE's portfolio. As MCE's first co-located solar and storage project, it will produce renewable energy to charge the battery during

the day and can discharge energy when MCE determines it is needed most. This serves as a hedge to MCE's purchase from the market in the early morning and evening hours when prices tend to be the most volatile. In addition, this resource provides valuable resource adequacy ("RA") and will help satisfy CPUC compliance obligations. The proposed contract price would be below current market for both RA and energy. By agreeing to this amendment, MCE would be preserving its rights to an important resource from a portfolio, compliance, and cost mitigation perspective.

Fiscal Impacts:

The PPA price is competitive with all similar projects that were submitted during Open Season and other ad hoc offers. MCE would benefit from the fixed cost of the bundled energy and RA when compared with buying these products in the current market. The impact will be accounted for as an increase to future energy budget line items.

Recommendation:

Approve the Second Amendment to the Renewable Energy Power Purchase Agreement between MCE and Daggett Solar Power 3 LLC.

Execution Version

SECOND AMENDMENT TO RENEWABLE POWER PURCHASE AGREEMENT

This **SECOND AMENDMENT TO RENEWABLE POWER PURCHASE AGREEMENT** (this “Amendment”) is entered into as of November 3, 2022 (the “Effective Date”), by and between Marin Clean Energy, a California joint powers authority (“Buyer”) and Daggett Solar Power 3 LLC, a Delaware limited liability company (“Seller”), each individually a “Party” and collectively, the “Parties”.

RECITALS

WHEREAS, the Parties entered into that certain Renewable Power Purchase Agreement, dated September 25, 2020, as amended by that certain First Amendment to Renewable Power Purchase Agreement, dated as of December 13, 2021 (the “Agreement”);

WHEREAS, the Parties desire to amend the Agreement as set forth herein; and

WHEREAS, the Parties are entering into this Amendment in accordance with Section 19.2 of the Agreement to implement such amendments.

AGREEMENT

NOW THEREFORE, in consideration of the mutual promises set forth below, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. Amendments to the Agreement.

- a. Each reference to “55 MW” in the Agreement, including on the Cover Sheet and in the definition of “Storage Facility,” shall be amended by replacing such amount with “60 MW”.
- b. Each reference to “220 MWh” in the Agreement, including on the Cover Sheet and in the definition of “Storage Facility,” shall be amended by replacing such amount with “240 MWh”.
- c. The Cover Sheet of the Agreement is hereby amended by amending and restating the “**Contract Price**” section as follows:

Contract Price

The Renewable Rate shall be:

Contract Year	Renewable Rate
1 – 15	

The Storage Rate shall be:

Contract Year	Storage Rate
1 – 15	

- d. A new Section is added to the Cover Sheet following the Contract Price tables as follows:

Seller's Assumed Tax Credits: As of the Effective Date, Seller intends to qualify for and utilize the ITC. The "energy percentage" for the ITC is assumed to [REDACTED]

- e. Section 1.1 of the Agreement is hereby amended by amending and restating the following defined terms:

"Renewable Rate" has the meaning set forth on the Cover Sheet; provided, if the officer's certificate delivered by Seller pursuant to Section 2.2(j) states that Seller will claim a Tax Credit for the Generating Facility that is [REDACTED]

[REDACTED] Upon request of Buyer, Seller shall provide written documentation confirming the amount of the Tax Credit subsequently claimed by Seller. If the amount of such Tax Credit was greater than the amount specified in the officer's certificate, the Renewable Rate will be reduced to reflect the correct Tax Credit amount, but not below the amount initially stated on the Cover Sheet.

"Storage Contract Capacity" means the total capacity (in MW) of the Storage Facility initially equal to the amount set forth on the Cover Sheet, as may be adjusted pursuant (i) to Exhibit B, Section 5 or (ii) Section 4.9 and Exhibit O to reflect the results of the most recently performed Storage Capacity Test.

"Storage Rate" has the meaning set forth on the Cover Sheet; provided, if the officer's certificate delivered by Seller pursuant to Section 2.2(j) states that Seller will claim a Tax Credit for the Storage Facility that [REDACTED]

[REDACTED] Upon request of Buyer, Seller shall provide written documentation confirming the amount of the Tax Credit subsequently claimed by Seller. If the amount of such Tax Credit was greater than the amount specified in the officer's certificate, the Storage Rate will be reduced to reflect the correct Tax Credit amount, but not below the amount initially stated on the Cover Sheet.

- f. Section 1.1 of the Agreement is hereby amended by deleting the following defined terms:

"Additional Storage Capacity", **"Additional Storage Capacity Completion Date"**, **"Additional Storage Capacity Delay Damages"**, **"Additional Storage Capacity Shortfall"**, **"Guaranteed Additional Storage Capacity Completion Date"**, and **"Outside Additional Storage Capacity Completion Date"**.

- g. A new Section 2.2(j) is added as follows:

(j) Seller has delivered to Buyer an officer's certificate stating the Tax Credit and applicable "energy percentage" that Seller will claim for the Generating Facility and the Storage Facility.

- h. Section 2.5 of the Agreement is hereby deleted in its entirety and replaced with the following:

2.5 **[Reserved]**.

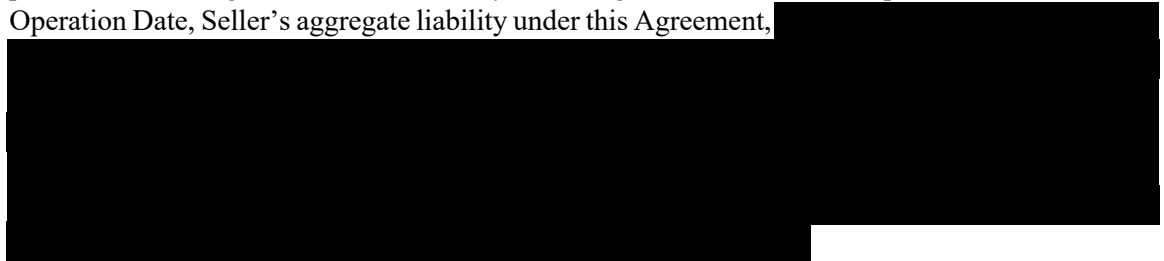
- i. Section 2.7 of the Agreement is hereby deleted in its entirety and replaced with the following:

2.7 [Reserved].

For the avoidance of doubt, each additional reference to “Section 2.7” in the Agreement, including on the Cover Sheet, in Section 4.9(c), and in Exhibit O to the Agreement, shall be deleted and have no force or effect in the Agreement.

- j. Section 11.7 of the Agreement is hereby deleted in its entirety and replaced with the following:

11.7 Seller Pre-Commercial Operation Liability Limitations. Notwithstanding any other provision of this Agreement to the contrary, if this Agreement is terminated prior to the Commercial Operation Date, Seller’s aggregate liability under this Agreement,



- k. Exhibit A to the Agreement is hereby deleted in its entirety and replaced with the version of Exhibit A attached hereto.

- l. Exhibit B to the Agreement is hereby deleted in its entirety and replaced with the version of Exhibit B attached hereto.

- m. Exhibit Q to the Agreement is hereby deleted in its entirety and replaced with the version of Exhibit Q attached hereto.

- n. The Parties hereby agree that the following provisions are added to the Agreement:

“Eligibility. Seller, and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement that: (i) the Project qualifies and is certified by the CEC as an Eligible Renewable Energy Resource (“ERR”) as such term is defined in Public Utilities Code Section 399.12 or Section 399.16; and (ii) the Project’s output delivered to Buyer qualifies under the requirements of the California Renewables Portfolio Standard. To the extent a change in law occurs after execution of this Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in law. [STC 6].”

“Transfer of Renewable Energy Credits. Seller and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement the Renewable Energy Credits transferred to Buyer conform to the definition and attributes required for compliance with the California Renewables Portfolio Standard, as set forth in California Public Utilities Commission Decision 08-08-028, and as may be modified by subsequent decision of the California Public Utilities Commission or by subsequent legislation. To the extent a change in law occurs after execution of this Agreement that causes this representation and warranty to be materially false or misleading, it shall not be an Event of Default if Seller has used commercially reasonable efforts to comply with such change in law. [STC REC-1].”

“Tracking of RECs in WREGIS. Seller warrants that all necessary steps to allow the Renewable Energy Credits transferred to Buyer to be tracked in the Western Renewable Energy Generation Information System will be taken prior to the first delivery under the contract. [STC REC-2].”

“Governing Law. This Agreement and the rights and duties of the Parties hereunder shall be governed by and construed, enforced and performed in accordance with the laws of the state of California, without regard to principles of conflicts of Law. To the extent enforceable at such time, each Party waives its respective right to any jury trial with respect to any litigation arising under or in connection with this Agreement. [STC 17].”

o. The provisions set forth in Section 1(n) above shall be deemed to be controlling in the event of a conflict with any similar prior language in the Agreement.

2. General.

a. Definitions; Interpretation. All capitalized terms used in this Amendment (including the recitals hereof) and not otherwise defined herein shall have the meanings assigned to them in the Agreement.

b. Agreement Otherwise Not Affected. Except for the amendments pursuant hereto, the Agreement remains unchanged and in full force and effect and is hereby ratified and confirmed in all respects. The execution and delivery of, or acceptance of, this Amendment and any other documents and instruments in connection herewith by either Party shall not be deemed to create a course of dealing or otherwise create any express or implied duty by it to provide any other or further amendments, consents, or waivers in the future.

c. Entire Agreement. This Amendment constitutes the entire agreement and understanding of the Parties with respect to its subject matter and supersedes all oral communication or prior writings related thereto.

d. Binding Effect. This Amendment shall be binding upon, inure to the benefit of and be enforceable by the Parties hereto and their respective successors and assigns.

e. No Reliance. Each Party hereby acknowledges and confirms that it is executing this Amendment on the basis of its own investigation and for its own reasons without reliance upon any agreement, representation, understanding or communication by or with the other Party or its agents, representatives or attorneys not set forth within the Agreement or this Amendment.

f. Costs and Expenses. Each Party shall be responsible for any costs and expenses incurred by such Party in connection with the negotiation, preparation, execution and delivery of this Amendment and any other documents to be delivered in connection herewith.

g. Governing Law. THIS AMENDMENT SHALL BE GOVERNED BY, CONSTRUED, AND ENFORCED UNDER THE LAWS OF THE STATE OF CALIFORNIA WITHOUT GIVING EFFECT TO ITS CONFLICTS OF LAW PRINCIPLES THAT WOULD REQUIRE THE APPLICATION OF THE LAWS OF ANOTHER STATE.

h. Amendments. This Amendment may not be modified, amended or otherwise altered except by written instrument executed by the Parties' duly authorized representatives.

i. Interpretation. This Amendment is the result of negotiations between and has been reviewed by counsel to each of the Parties and is the product of all Parties hereto. Accordingly, this Amendment

shall not be construed against either Party merely because of such Party's involvement in the preparation hereof.

j. Counterparts. This Amendment may be executed and delivered in counterparts, all of which taken together shall constitute one and the same instrument. Delivery of an executed signature page of this Amendment by electronic mail transmission (including PDF) shall be the same as delivery of a manually executed signature page.

[Signatures appear on the following page.]

IN WITNESS WHEREOF, the Parties hereto have caused this Amendment to be duly executed as of the Effective Date.

**DAGGETT SOLAR POWER 3 LLC, a
Delaware limited liability company**

**MARIN CLEAN ENERGY, a California joint
powers authority**

Sign: _____

Sign: _____

Print: _____

Print: _____

Title: _____

Title: _____

**MARIN CLEAN ENERGY, a California joint
powers authority**

Sign: _____

Print: _____

Title: _____

EXHIBIT A

FACILITY DESCRIPTION

Site Name: Daggett Solar Project

Site includes all or some of the following APNs: See attached Schedule 1.

County: San Bernardino County

CEQA Lead Agency: San Bernardino County

Type of Generating Facility: Solar photovoltaic electricity generating facility

Type of Storage Facility: A lithium-ion battery energy storage system which is capable of receiving Charging Energy from the Generating Facility and in the form of grid energy; provided, that the Storage Facility shall not receive Charging Energy from any source other than the Generating Facility without the prior written agreement of both Parties.

Guaranteed Capacity: See definition in Section 1.1.

Storage Contract Capacity: See definition in Section 1.1.

Maximum Facility Output: 110 MW

Dedicated Interconnection Capacity for Facility: 110 MW

Maximum Charging Capacity: 60 MW

Maximum Discharging Capacity: 60 MW

Maximum Stored Energy Level: 240 MWh

Operating Restrictions of Storage Facility: See Exhibit Q

Delivery Point: Southern California Edison's Kramer substation

PNode: PNode shall be updated by mutual agreement of Buyer and Seller prior to the initial delivery of Test Energy hereunder, to reflect the PNode then closest to the Facility.

Participating Transmission Owner: Southern California Edison


Schedule 1
List of APNs

0515-011-03	0515-061-02
0515-011-14	0515-041-18
0515-011-15	0515-041-09
0515-021-06	0515-111-05
0515-021-07	0515-111-06
0515-051-24	0515-111-07
0515-051-25	0515-111-08
0515-051-31	0515-111-09
0515-051-36	0515-131-11
0515-051-38	0515-131-12
0515-041-21	0515-131-13
0515-041-22	0515-131-36
0515-041-28	0515-111-10
0515-041-29	0515-061-19
0515-051-03	0515-071-02
0515-051-19	0515-041-15
0515-051-04	0515-041-25
0515-051-07	0515-111-12
0515-051-09	0515-111-13
0515-051-14	0515-111-14
0515-051-15	0515-111-15
0515-051-16	0515-111-16
0515-151-09	0515-151-04
0515-051-17	0515-151-30
0515-051-22	0515-151-29
0515-051-23	

EXHIBIT B

FACILITY CONSTRUCTION AND COMMERCIAL OPERATION

1. **Construction of the Facility.**

- a. **“Construction Start”** will occur upon satisfaction of the following: (i) Seller has acquired the applicable regulatory authorizations, approvals and permits required for the commencement of construction of the Facility, (ii) Seller has engaged all contractors and ordered all essential equipment and supplies as, in each case, can reasonably be considered necessary so that physical construction of the Facility may begin and proceed to completion without foreseeable interruption of material duration, and (iii) Seller has executed an engineering, procurement, and construction contract and issued thereunder a full notice to proceed that authorizes the contractor to mobilize to Site and begin physical construction of the Facility at the Site. The date of Construction Start will be evidenced by and subject to Seller’s delivery to Buyer of a certificate substantially in the form attached as Exhibit J hereto, and the date certified therein shall be the **“Construction Start Date.”** The Seller shall use commercially reasonable efforts to cause Construction Start to occur no later than the Guaranteed Construction Start Date.
- b. If Construction Start is not achieved by the Guaranteed Construction Start Date, Seller shall pay Daily Delay Damages to Buyer for each day for which Construction Start has not begun after the Guaranteed Construction Start Date. Daily Delay Damages shall be payable to Buyer by Seller until Seller reaches Construction Start of the Facility. On or before the tenth (10th) day of each month, Buyer shall invoice Seller for Daily Delay Damages, if any, accrued during the prior month and, within ten (10) days following Seller’s receipt of such invoice, Seller shall pay Buyer the amount of the Daily Delay Damages set forth in such invoice. Daily Delay Damages shall be refundable to Seller pursuant to Section 2 b. of this Exhibit B.
- 

2. **Commercial Operation of the Facility.** **“Commercial Operation”** means the condition existing when (i) Seller has fulfilled all of the conditions precedent in Section 2.2 of the Agreement and provided Notice from a Licensed Professional Engineer to Buyer substantially in the form of Exhibit H (the **“COD Certificate”**) and (ii) Seller has notified Buyer in writing that it has provided the required documentation to Buyer and met the conditions for achieving Commercial Operation. The **“Commercial Operation Date”** shall be the later of (x) sixty (60) days prior to the Expected Commercial Operation Date, or (y) the date on which Commercial Operation is achieved.

- a. Seller shall use commercially reasonable efforts to cause Commercial Operation for the Facility to occur by the Guaranteed Commercial Operation Date. Seller shall notify Buyer that it intends to achieve Commercial Operation at least sixty (60) days before the anticipated Commercial Operation Date.
- b. If Seller achieves Commercial Operation for the Facility by the Guaranteed Commercial Operation Date, all Daily Delay Damages paid by Seller shall be refunded to Seller. Seller

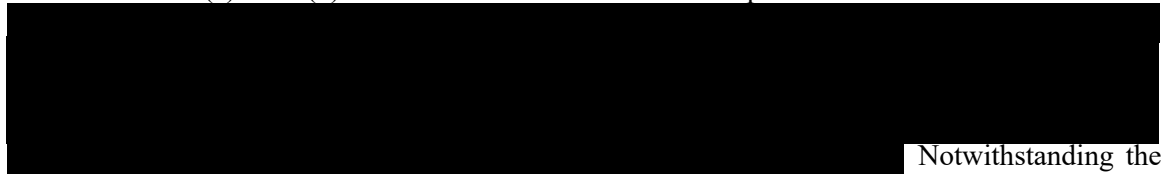
shall include a request for refund of such Daily Delay Damages with the first invoice to Buyer after Commercial Operation.

- c. If Seller does not achieve Commercial Operation by the Guaranteed Commercial Operation Date, Seller shall pay Commercial Operation Delay Damages to Buyer for each day after the Guaranteed Commercial Operation Date until the Commercial Operation Date. On or before the tenth (10th) day of each month, Buyer shall invoice Seller for Commercial Operation Delay Damages, if any, accrued during the prior month and within ten (10) days following Seller's receipt of such invoice, Seller shall pay Buyer the amount of the Commercial Operation Delay Damages set forth in such invoice. The Parties agree that Buyer's receipt of Commercial Operation Delay Damages shall be Buyer's sole and exclusive remedy for the first sixty (60) days of delay in achieving the Commercial Operation Date on or before the Guaranteed Commercial Operation Date, but shall (x) not be construed as Buyer's declaration that an Event of Default has occurred under any provision of Section 11.1 and (y) not limit Buyer's right to receive a Damage Payment upon exercise of Buyer's remedies pursuant to Section 11.2.

3. **Termination for Failure to Achieve Commercial Operation.** If the Facility has not achieved Commercial Operation within sixty (60) days after the Guaranteed Commercial Operation Date, Buyer may elect to terminate this Agreement in accordance with Sections 11.1(b)(ii) and 11.2.

4. **Extension of the Guaranteed Dates.** The Guaranteed Construction Start Date and the Guaranteed Commercial Operation Date shall, subject to notice and documentation requirements set forth below, be automatically extended on a day-for-day basis (the "**Development Cure Period**"):
 - a. for the duration of any and all delays arising out of a Force Majeure Event, including a Force Majeure Event that delays Seller from acquiring all material permits, consents, licenses, approvals or authorizations from any Governmental Authority required for Seller to own, construction, interconnect, operate or maintain the Facility; or
 - b. for the duration of any and all delays arising out of the Interconnection Facilities or Network Upgrades not being complete and ready for the Facility to connect and sell Product at the Delivery Point by the Guaranteed Commercial Operation Date, despite the exercise of best efforts by Seller.

Notwithstanding anything in this Agreement to the contrary, the cumulative extensions granted under Sections 4(a) and 4(b) of this Exhibit B under the Development Cure Period shall not exceed



Notwithstanding the foregoing, no extension under Sections 4(a) and 4(b) of this Exhibit B shall be given if (i) the delay was the result of Seller's failure to take all commercially reasonable actions to meet its requirements and deadlines, (ii) Seller failed to provide requested documentation as provided below, or (iii) Seller failed to provide written notice to Buyer as required in the next sentence. Seller shall provide prompt written notice to Buyer of a delay, but in no case more than thirty (30) days after Seller became aware of an actual delay affecting the Facility, except that in the case of a delay occurring within sixty (60) days of the Expected Commercial Operation Date, or after such date until the Commercial Operation Date, Seller must provide written notice within seven (7) Business Days of Seller becoming aware of such delay. As used in the preceding sentence, "actual delay" does not

include Seller's receipt of generic notices of potential delays. Upon request from Buyer, Seller shall promptly provide documentation demonstrating to Buyer's reasonable satisfaction that the delays described above did not result from Seller's actions or failure to take commercially reasonable actions.

5. **Failure to Reach Guaranteed Capacity or Storage Contract Capacity.**

- a. *Guaranteed Capacity.* If, at Commercial Operation, the Installed PV Capacity is less than one hundred percent (100%) of the Guaranteed Capacity, Seller shall have one hundred twenty (120) days after the Commercial Operation Date to install additional capacity or Network Upgrades such that the Installed PV Capacity is equal to (but not greater than) the Guaranteed Capacity, and Seller shall provide to Buyer a new certificate substantially in the form attached as Exhibit I-1 hereto specifying the new Installed PV Capacity. If Seller fails to construct the Guaranteed Capacity by such date, Seller shall pay "**Capacity Damages**" to Buyer, in an amount equal to Two Hundred Fifty Thousand Dollars (\$250,000) for each MW that the Guaranteed Capacity exceeds the Installed PV Capacity, and the Guaranteed Capacity and other applicable portions of the Agreement shall be adjusted accordingly.
- b. *Storage Contract Capacity.* If, at Commercial Operation, the Installed Battery Capacity is less than one hundred percent (100%) of the Storage Contract Capacity, Seller shall have one hundred twenty (120) days after the Commercial Operation Date to install additional capacity or Network Upgrades such that the Installed Battery Capacity is equal to (but not greater than) one hundred percent (100%) of the Storage Contract Capacity, and Seller shall provide to Buyer a new certificate substantially in the form attached as Exhibit I-2 hereto specifying the new Installed Battery Capacity. If Seller fails to construct the Storage Contract Capacity by such date, Seller shall pay Capacity Damages to Buyer, in an amount equal to Two Hundred Fifty Thousand Dollars (\$250,000) for each MW that the Storage Contract Capacity exceeds the Installed Battery Capacity, and the Storage Contract Capacity and other applicable portions of the Agreement shall be adjusted accordingly.

EXHIBIT Q

OPERATING RESTRICTIONS

Maximum Storage Level:	240 MWh
Minimum Storage Level:	0 MWh
Maximum Charging Capacity:	60 MW
Minimum Charging Capacity:	0.01 MW
Maximum Discharging Capacity:	60 MW
Minimum Discharging Capacity:	0.01 MW
Maximum State of Charge (SOC) during Charging:	100 %
Minimum State of Charge (SOC) during Discharging:	0 %
Ramp Rate:	■ MW/minute.
Annual Cycles:	Maximum of 365 Full Cycle Equivalents per Contract Year with no monthly cap.
Daily Dispatch Limits:	Charging: ■ per day Discharging: ■ per day Partial Charging/Discharging: ■ ■.
Maximum Time at Minimum Storage Level:	N/A
Other Operating Limits:	<ol style="list-style-type: none"> 1. Storage Facility to be charged only from the Generating Facility. 2. All manual dispatch commands by the Buyer or Buyer's SC must use the supplied energy management system. 3. The average resting state of charge per Contract Year must be below ■. 4. Up to ■ of idle time is required following a continuous discharge of greater than ■ of the Storage Capacity (as measured in MWh).

Seller and Buyer agree that Charging Notices and Discharging Notices shall be deemed modified to the extent necessary to comply with the Operating Restrictions.

The following capitalized terms have the meanings ascribed to them below in this Exhibit Q:

“Full Cycle” means the Storage Facility is charged, then discharged at a MWh quantity equal to the energy capacity in MWh. For example, SOC starts at 1%, the Storage Facility is charged to 100% and then discharged to 1%.

“Full Cycle Equivalent” means Partial Cycles that aggregate to one Full Cycle. For example, two 50 percent (50%) Partial Cycles or four 25 percent (25%) Partial Cycles is one (1) Full Cycle Equivalent.

“Partial Cycle” means the Storage Facility is charged and discharged at a MWh quantity less than 100 percent (100%) of the Storage Facility energy capacity. For example, SOC starts at 50%, the Storage Facility is discharged to 0% and then charged back to 50%.



November 3, 2022

TO: MCE Technical Committee

FROM: Bill Pascoe, Senior Power Procurement Manager
Jenna Tenney, Senior Communications Manager

RE: Approval of Operational Integrated Resource Plan (Agenda Item #06)

ATTACHMENTS: A. MCE 2023 Operational Integrated Resource Plan
B. MCE 2023 Operational Integrated Resource Plan Power Point Presentation

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 relevant 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 2023 OIRP has a planning period of 2023 through 2032, 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, including regulatory mandates;
- 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 ("RA"), 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 physical energy needs as well as needs to fulfill regulatory requirements 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 fulfill 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 2023 OIRP is provided as an attachment to this report. It is updated from last year's report to be more user-friendly and readable for a broader audience. The OIRP is based on a refreshed customer load forecast that takes into account increasing activity behind the meter as well as an updated snapshot of MCE's power supply portfolio. It highlights MCE's work to reinvest in community programs and services, including demand response programs and a focus on supporting vulnerable populations.

The 2023 OIRP affirms MCE's goal of providing the majority of its Light Green portfolio with

renewables, large hydroelectric and ACS energy by 2023, and 85% of its Light Green portfolio with renewables by 2029. It also confirms that MCE was able to meet its goal for such renewables to be comprised entirely of Portfolio Content Category 1 ("PCC 1") products as of 2022, in order to mitigate the greenhouse gas accounting impacts of Assembly Bill 1110 on PCC 2 products.

MCE's 2023 OIRP highlights MCE's plan to procure 332 megawatts ("MW") of incremental net qualifying capacity by 2026 to meet the California Public Utilities Commission's mid-term reliability mandate. This 332 MW of net qualifying capacity (or MW capacity under RA program accounting rules) translates into a procurement need of approximately 600 MW of new, wholesale capacity, which includes renewables paired with storage, stand-alone storage, and clean firm/baseload capacity. MCE plans to meet this mandate with:

- At least 29 MW of long-duration storage (defined as capable of discharging at full capacity for a minimum of eight hours);
- At least 29 MW of clean firm/baseload capacity;
- At least 185 MW of stand-alone four-hour storage; and
- 210 MW of new solar paired with 152 MW of four-hour storage.

The planned 366 MW of standalone and hybrid storage described above will contribute towards the 634 MW of wholesale storage capacity MCE plans to procure over the course of the planning horizon to complement its PCC 1 renewable energy targets.

As a final note, the 2023 OIRP does not include information on your Board's decision to default new customer move-ins to Deep Green service. This information will be included in next year's OIRP as MCE more clearly defines the role of Deep Green default moving forward and how procurement policies might need to be changed in order to meet this need. Per the presentation provided to your Board in August 2022, any changes to the power content of Deep Green will be brought before your Board for approval.

Recommendation:

Approve MCE's 2023 Operational Integrated Resource Plan.

OPERATIONAL INTEGRATED RESOURCE PLAN

2022-2032

Published November XX, 2022



I. Executive Summary

MCE's mission is to confront the climate crisis by eliminating fossil fuel GHG emissions, producing renewable energy, and creating equitable community benefits.

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 member communities since 2010. MCE offers more renewable energy at cost-competitive rates, significantly reducing energy-related greenhouse gas (GHG) emissions while delivering economic and workforce benefits by reinvesting millions of dollars in local energy programs. MCE is a load-serving entity that serves more than 1,240 MW of peak load. MCE provides electricity service to more than 575,000 customer accounts representing more than one million residents and businesses in 37 member communities across four Bay Area counties: Contra Costa, Marin, Napa, and Solano.

MCE provides service to approximately 87% of eligible electricity customers within its service area and is the default electric generation provider for any new or relocated customers therein.

For more information about MCE, visit mceCleanEnergy.org.



Figure 1: MCE service area, including new communities receiving MCE service in 2022

MCE Energy Services

MCE's standard service, [Light Green](#), currently represents 97.8% of MCE customer accounts (96.5% of load) and has consisted of at least 60% renewable energy since 2017, meeting state goals 13 years ahead of schedule (see figure 2). Light Green is expected to reach 85% renewable energy by 2029 and is on track to become 95% GHG-free by 2023 (see table 1).

MCE offers two 100% renewable service options: [Deep Green](#), sourced solely from wind and solar energy and representing 2.2% of MCE accounts (3.5% of load); and [Local Sol](#), sourced exclusively from local solar energy produced within MCE's service area and representing 0.03% of MCE accounts (0.02% of load).

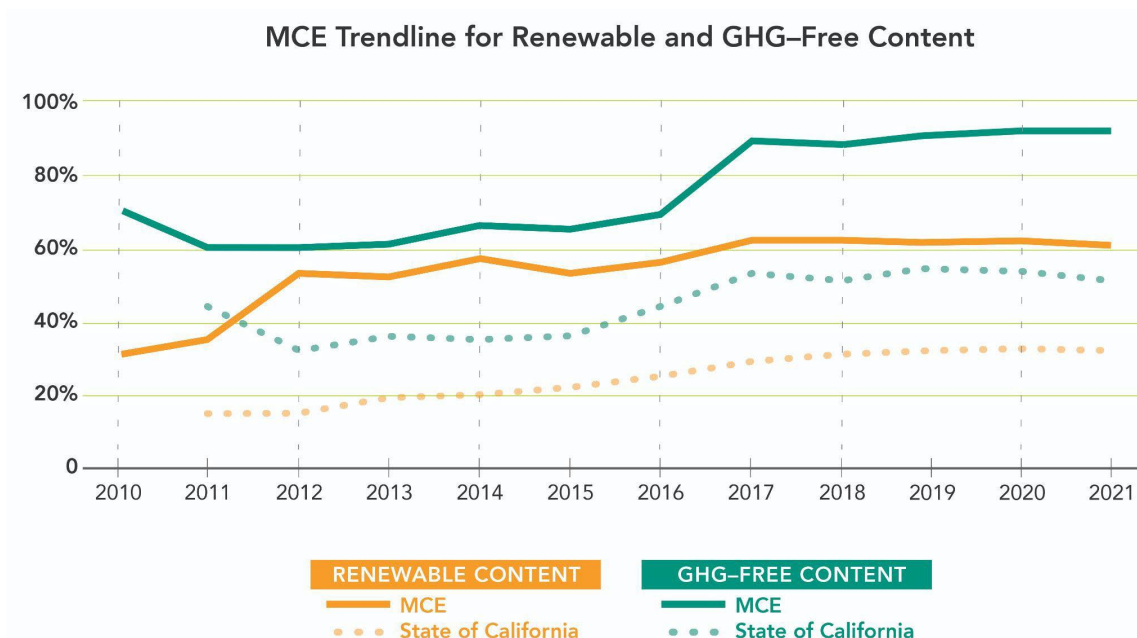


Figure 2: MCE trendline for renewable and GHG-free content¹

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 rebates for energy efficiency, energy storage, electric vehicle (EV) charging, income-qualifying EVs, and heat pump water heaters. Through these programs, MCE has:

- Provided \$5.60 million in [energy efficiency](#) rebates since 2013;

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

- Procured and helped develop 48 MW of new renewable projects in MCE’s service area including [MCE Solar Charge](#), an 80-kW solar carport system at MCE’s San Rafael office with 10 Level 2 EV charging ports available to MCE staff and the public;
- Distributed \$330,000 for [solar rebates](#) to 688 income-qualified customers for more than 1.4 MW of solar since 2012;
- [Distributed free portable, batteries](#) to 200 low-income and Medical Baseline customers, worth \$550,000, in partnership with regional Centers for Independent Living at no cost to recipients;
- Provided more than \$1.5 million in rebates for [over 1000 electric vehicle charging ports](#) installed throughout MCE’s service area; and
- In partnership with BayREN’s Home+ program, provided \$103,000 in incentives for heat pump water heater installations.

MCE’s Equity Commitment

MCE has been [committed to environmental justice](#) since its launch in 2010 and continues to work with member communities to advance equity through tailored programs and services. MCE has prioritized equitable access to clean energy benefits that support customers who have been underserved by traditional energy programs or who are most impacted from the frontline effects of fossil fuel generation.

To address historical economic inequities, most MCE programs have carve-outs for lower-income customers. For example, the [MCE Cares Credit Program](#) has provided low-income customers over \$4.2 million in bill relief, and MCE’s [Low-Income Families and Tenants \(LIFT\) Program](#) helps families reduce indoor pollution impacts to increase health and prosperity. MCE’s commitment to [energy equity](#) is reflected in:

- Partnerships with community-based organizations (CBOs) including schools and programs in support of underserved and vulnerable individuals;
- Strategic recruiting and hiring practices such as targeted job postings, partnerships with CBOs, education and employment organizations, physical attendance at job recruitment fairs, and blind résumé reviews; and
- MCE’s programs and policies described in Sections III and IV including:
 - [Behind-the-Meter Energy Storage and Resilience](#)
 - [Demand Response and Flexibility](#)
 - [Distributed Energy Resources](#)
 - [Transportation Electrification](#)
 - [Green Access and Community Solar Connection](#)
 - [COVID-19 Customer Support](#)
 - [Equity in Power Purchasing](#)
 - [Workforce and Supplier Diversity](#)

Over MCE’s 12 years of operation, these programs have:

- Contributed \$98 million in local renewable energy development;
- Invested more than \$650,000 directly into [workforce development](#), including the training of 217 individuals;

- Supported 2.8 million labor hours through new renewable energy project development, 1.3 million of which were through union partnerships; and
- Generated [strong community partnerships](#) with workforce development agencies such as RichmondBUILD, Marin City Community Development Corporation, Rising Sun Center for Opportunity, Future Build, Association for Energy Affordability, and Strategic Energy Innovations.

Overall, since 2010 MCE has contributed almost \$214 million (figure 3) in community reinvestment through cost savings (\$31.5 million), local renewable energy projects (\$98 million), energy efficiency (\$24 million), energy resiliency (\$12 million), solar incentives (\$23 million), local employment, vendor contracts, and sponsorships (\$9 million), and customer programs (\$16 million).

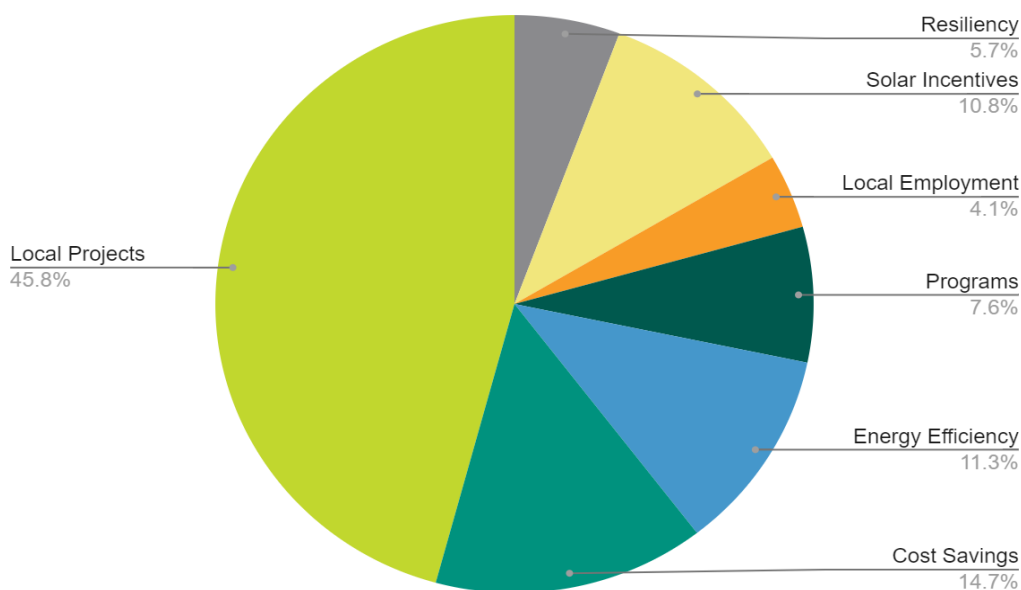


Figure 3: MCE local reinvestment by category

MCE Energy Procurement

In 2021, MCE procured approximately 5.3 million MWh of electricity for its customers.² MCE projects that by 2032, its loss-adjusted load will be approximately 6.4 million MWh. For 2023, MCE anticipates that 98% of its total retail sales will be sourced from Power Content Category 1 (PCC 1) renewables³,

² In 2021, MCE provided its customers with 5,333,206 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 toward its "loss-adjusted load," which is approximately 106% of its retail sales.

³ MCE no longer procures Power Content Category 2 or 3 renewable energy.

large hydroelectric,⁴ and Asset Controlling Supplier (ACS) energy.⁵ PCC 1 power is produced from renewable resources located in California. As mentioned above and shown in table 1, MCE's Light Green service option is expected to be 95% GHG-free⁶ by 2023 and is expected to reach 85% renewable energy by 2029. MCE's procurement strategy through 2032 includes:

- Bring online at least 332 MW of incremental net qualifying capacity⁷ by 2026 to meet the California Public Utilities Commission's (CPUC) mid-term reliability Integrated Resource Planning (IRP) mandate. Translating the 332 MW of net qualifying capacity into nameplate capacity amounts to approximately 600 MW of new, wholesale capacity, which includes renewables paired with storage, stand-alone storage, and clean firm/baseload capacity. This procurement is in addition to approximately 700 MW of new California renewables that MCE has already procured. To meet the CPUC mid-term reliability mandate, MCE plans to bring online:
 - At least 29 MW of clean firm/baseload capacity;
 - At least 29 MW of long-duration storage (defined as capable of discharging at full capacity for a minimum of eight hours);
 - At least 185 MW of stand-alone four-hour storage; and
 - 210 MW of new solar paired with 152 MW of four-hour storage.
- Increase purchases of Resource Adequacy (RA) from non-fossil resources.

Table 1: MCE Light Green portfolio targets⁸

10-Year Light Green Portfolio Targets (%)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
PCC 1 Renewable	60%	60%	65%	70%	75%	80%	85%	85%	85%	85%
PCC 2 Renewable	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Large Hydro + ACS	37%	37%	32%	27%	22%	17%	12%	12%	12%	12%
Total Renewable	60%	60%	65%	70%	75%	80%	85%	85%	85%	85%
Total Renewable + Large Hydro + ACS	97%	97%	97%	97%	97%	97%	97%	97%	97%	97%
GHG-Free Equivalent	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%

⁴ 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 CEC's RPS Eligibility Guidebook.

⁵ 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.

⁶ As counted by the Power Source Disclosure Program

⁷ Net qualifying capacity describes the amount of capacity from any resource that can be counted toward meeting Resource Adequacy (RA) requirements in the CPUC's RA program. This is oftentimes less than the wholesale number of MW procured, which is often referred to as nameplate capacity. As such, MCE will procure significantly more than 332 MW to meet the CPUC mandate.

⁸ 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.

II. Introduction to Integrated Resource Planning

MCE was formed to empower its member communities to choose supply-side and demand-side resources that reflect their specific values and needs. Member community values and needs are reflected in the 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 for the upcoming ten-year planning period. MCE's 2023 OIRP (this document) has a planning period of 2023 through 2032 and takes into account numerous dimensions:

- 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, including regulatory mandates;
- 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 annually and submitted for approval to MCE's Technical Committee of the Board. 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, in conjunction with load expectations, over the planning period⁹;
- To prioritize resource preferences and articulate relevant energy procurement policies;
- To provide guidance to the energy procurement processes by MCE staff; and
- 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 (IRP) submitted to the CPUC 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. Importantly, state law provides that MCE's procurement activities be governed solely by its Board, except where state law expressly provides otherwise. As such, MCE's procurement must follow Board-adopted mandates as reflected in its OIRP and comply with external mandates from state regulatory bodies pursuant to their regulatory authority over CCAs.

⁹ Within this OIRP, resources include renewable energy, large hydroelectric energy, ACS energy, energy storage, RA, 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 ten-year projection of the energy (reflected in GWh) that its customers will consume annually. The forecast is driven primarily by the number and types of customers that MCE expects to serve, in conjunction with weather projections. It also incorporates the load-modifying effects of electrification, 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 Net Load line to represent what MCE's load would have been without these important load-side resources.

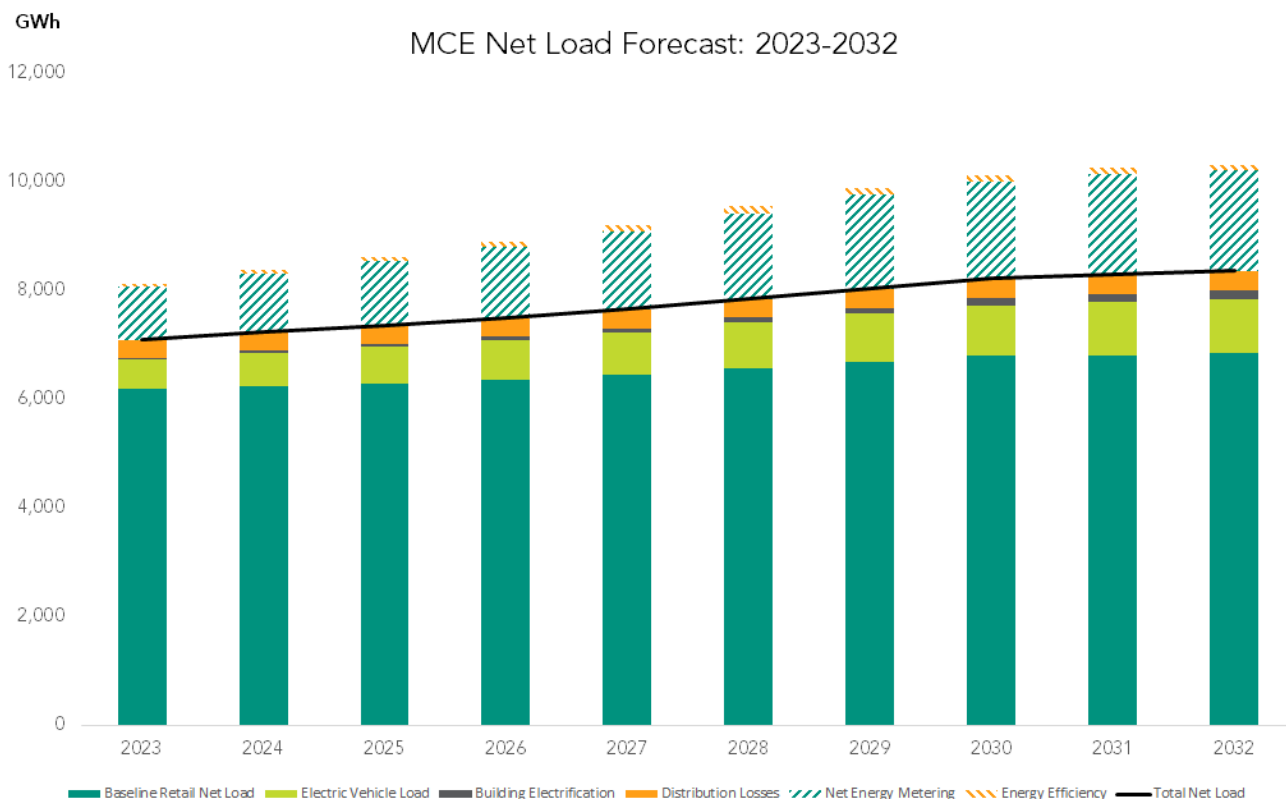


Figure 4: MCE loss-adjusted load forecast, 2023-2032¹⁰

¹⁰ MCE is responsible for procuring the electricity that is lost to the distribution system. For this reason, MCE must procure toward its "loss-adjusted load," which is approximately 106% of its retail sales. MCE settles separately with the CAISO for transmission system losses.

Enrolled Customers

MCE has been serving customers since 2010, and now supports a peak load of approximately 1,240 MW. MCE provides electricity service to approximately 575,000 customer accounts and more than one million residents and businesses in 37 member communities across four Bay Area counties: Contra Costa, Marin, Napa, and Solano. MCE has an average customer participation rate of 86.9% across its service area and a Deep Green participation rate of 2.2%. For additional information on MCE's customer enrollment by customer account and load, see figure 5. Figures 6 and 7 provide a breakdown of customer enrollment rates by community.

The scope of this OIRP 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 OIRPs. For a list of MCE's enrollment phases, refer to [Appendix B](#).

MCE Customers at a Glance - Accounts
As of July 1, 2022



MCE Customers at a Glance - Load
As of July 1, 2022



Figure 5: MCE customer accounts and load

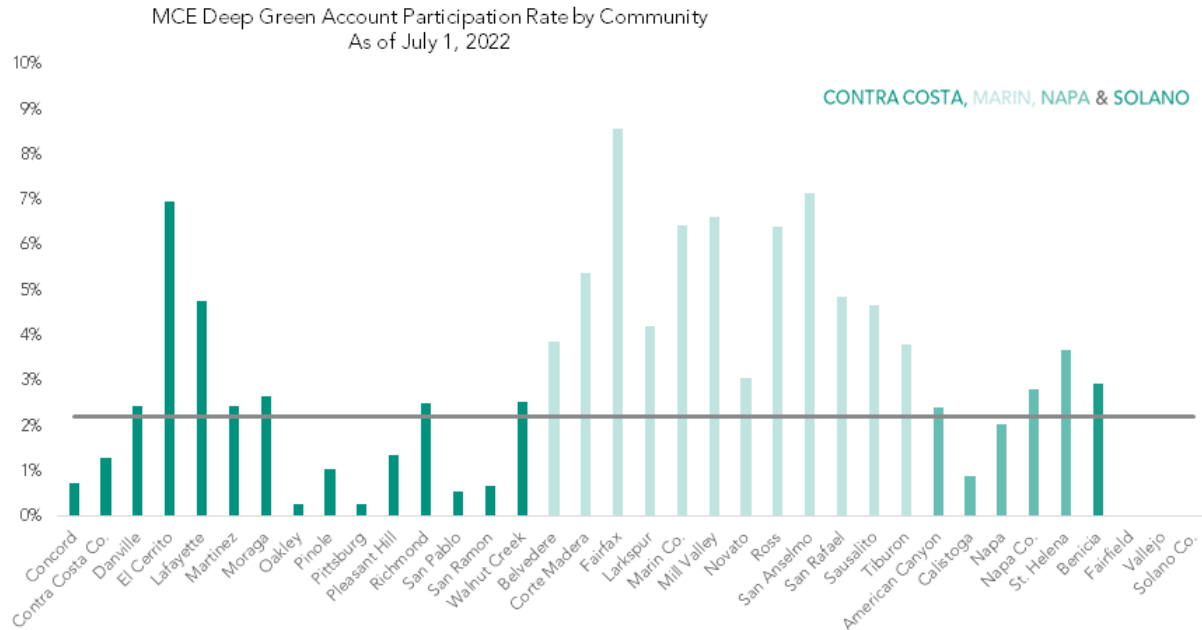


Figure 6: MCE Deep Green participation rates

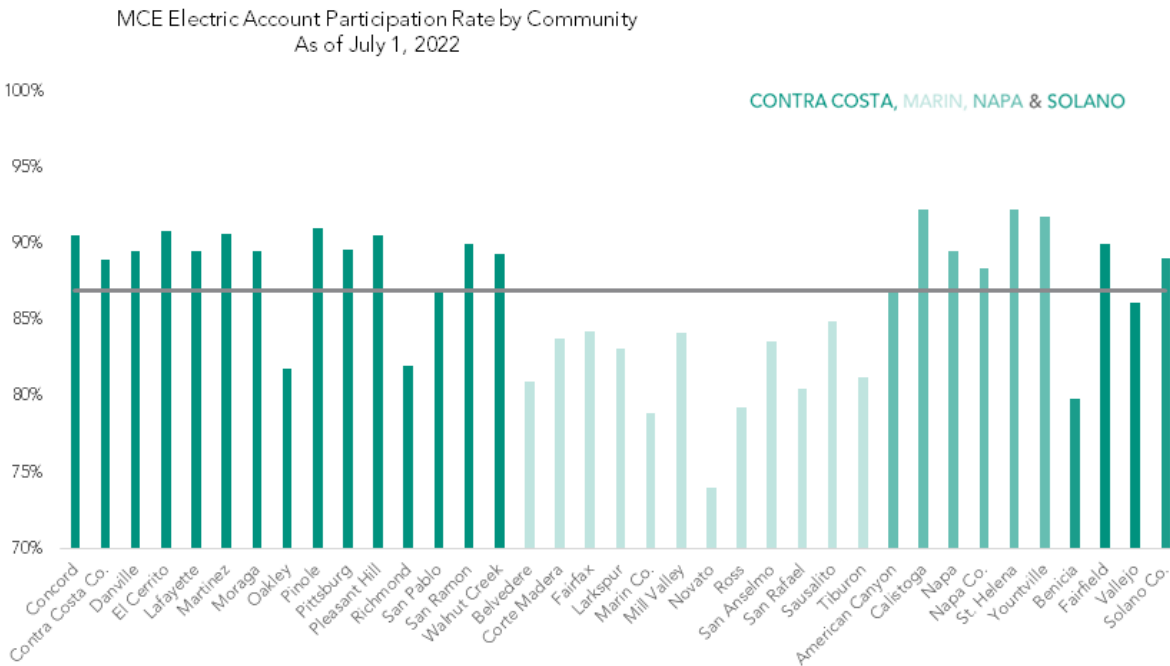


Figure 7: MCE overall participation rates

Baseline Customer and Consumption Forecast

MCE's electricity demand forecast starts with an assessment of customers by end-use classification. Monthly energy consumption estimates, based on weather-derived 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 for the load impacts of electrification, net energy metering, and energy efficiency in its forecasts.

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% renewable energy, half from wind resources and half from solar resources. Local Sol offers a second 100% renewable energy option of locally sourced solar for those who prefer to purchase power exclusively within MCE's service area. Figure 8 highlights MCE's power content by service option for 2021.

Table 2: MCE customer energy choices

LIGHT GREEN SERVICE	
Standard Option 97.8% of MCE accounts, 96.5% of load	<ul style="list-style-type: none"> • Minimum 60% RPS-qualifying renewable energy • Also contains large hydroelectric energy, ACS energy, and CAISO system power
DEEP GREEN SERVICE	
Opt Up Option 2.2% of MCE accounts, 3.5% of load	<ul style="list-style-type: none"> • 100% RPS-qualifying renewable energy (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 0.03% of MCE accounts, 0.02% of load	<ul style="list-style-type: none"> • Established in 2014, began serving customers in 2017 • 100% locally sourced solar from the Cooley Quarry project in Novato, California • 300 customer capacity of 2,885 MWh/year

2021 Electric Power Generation Mix*

Specific Purchases	Percent of Total Retail Sales (kWh)		
	MCE Light Green	MCE Deep Green	MCE Local Sol
Renewable	61%	100%	100%
Biomass & Biowaste	6%	0%	0%
Geothermal	6%	0%	0%
Eligible Hydroelectric	1%	0%	0%
Solar	31%	50%	100%
Wind	16%	50%	0%
Coal	0%	0%	0%
Large Hydroelectric	37%	0%	0%
Natural Gas	0%	0%	0%
Nuclear	1%	0%	0%
Other	0%	0%	0%
Unspecified Sources of Power **	2%	0%	0%
Total	100%	100%	100%

*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.

Figure 8: MCE's 2021 electric power generation mix

Behind-the-Meter Energy Storage and Resilience

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

In 2020, MCE launched its [Energy Storage Program](#) to deploy up to 15 MWh of customer-sited battery storage systems that can provide backup power during grid outages and reduce GHG emissions and costs. This program prioritizes vulnerable customers and populations that are disproportionately affected by grid outages. The program leverages incentives from the CPUC's Self-Generation Incentive Program (SGIP), coupled with gap funding and performance-based payments provided through MCE's Resiliency Fund.

To extend the impact of this program, MCE is working with the Marin Community Foundation. Through a three-year grant of \$750,000 from the Buck Family Fund, this partnership is stretching MCE's contributions to secure local resilience in Marin. These funds will be used to cover the costs for select critical facilities operated by nonprofits throughout Marin County to provide backup power to vulnerable communities during planned or unplanned outages.

On May 26th 2022, MCE was approved to join the implementation of a \$5 million Electric Program Investment Charge (EPIC) grant from the California Energy Commission (CEC) to develop an Advanced Energy Community (AEC). The grant will develop a pilot Virtual Power Plant (VPP) within the City of Richmond which will install a suite of privately-owned distributed energy resources (DERs) to be dispatched into the VPP- such as rooftop solar, heat pump water heaters, smart thermostats, smart plugs, electric vehicles, and energy storage. This provides smart, demand-side management opportunities through a network of flexible, energy storage plus solar systems with real-time monitoring and control via a state-of-the-art Distributed Energy Resources Management System (DERMS) software platform. These will send data directly to MCE and can be remotely controlled and operated together to pull power to and from the grid at strategic times, creating pockets of power to support and decarbonize the grid.

The goal of Richmond Advanced Energy Community is to connect 120 sites to the VPP including 10 rehabilitated homes, 90 homes occupied by low-to-middle income residents (which have already received solar systems from GRID Alternatives), 18 commercial sites, and 2 industrial sites. Combined, the 120 sites are expected to contribute 1MW of solar, 2MWh of energy storage, and 1.5MW of flexible load by December 2024.

The VPP will allow MCE to aggregate and dispatch DERs to manage critical peak loads, minimize procurement costs, and generate value in wholesale markets. Participants may not be enrolled in other DER aggregation or demand response programs. Participants will receive modern appliances, bill savings, and bill credits. During later phases, this program may help MCE expand its role as a California Independent System Operator (CAISO) market participant by aggregating resources that can be dispatched into the CAISO market.

Demand Response and Flexibility

MCE's innovative battery energy storage system (BESS) program (described above) reduces customer costs and GHG emissions with a goal of providing 3.24 MW of RA capacity by the end of the planning period. Under this program, an aggregated fleet of BESS are monitored and automatically dispatched as a virtual power plant to reduce MCE's peak demands and shift loads out of the 4–9 p.m. period to alleviate peak demand. This strategy also helps alleviate possible solar curtailment during the midday hours by charging BESS from solar photovoltaic (PV). MCE plans to expand this load-shifting effort to include the monitoring and control of 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.

In April 2021, MCE launched the Peak [FLEXmarket](#), a first-of-its-kind program platform aimed at shifting energy use in its service area away from times of extreme demand. Following its initial pilot year, the program received \$11 million in ratepayer funding from the CPUC for the summers of 2022 and 2023. Created in partnership with Recurve, the Peak FLEXmarket provides tools to measure hourly reductions in energy use that allows MCE to compensate businesses working locally with customers for energy savings during peak demand hours. The Peak FLEXmarket incentivizes regular load shifting and also calls demand response events during periods of extreme grid stress.

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, load management, EVs, 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 that:

- Develop local energy and capacity projects;
- Explore market designs;
- Create tools to quickly analyze and evaluate the suitability of specific DER solutions;
- Emphasize DER pilots that reduce MCE's exposure to wholesale market volatility;
- Shift energy use away from peak evening hours when solar energy production is low and market prices are typically high; and
- Match MCE's load shape to our resources.

Transportation Electrification

As part of its broader strategy to reduce GHG emissions through buildings and transportation electrification, MCE has been working on several EV-related initiatives since 2017. These include demand response-enabled charging devices, [equity-centered incentives for EVs](#), and [funding for charging stations](#). These efforts started with a strategic plan and infrastructure analysis in partnership with the U.S. Environmental Protection Agency 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 60,200 (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 EV charging station that opened in 2019 at MCE's San Rafael office, demonstrates that vision to MCE's staff and customers.

In 2021, MCE launched [MCE Sync](#), a residential smart charging pilot with the goal of reducing the peak load impacts of home charging while saving customers money and reducing GHG impacts. MCE Sync uses an app to manage home vehicle charging. During a 6-month pilot with 232 enrolled participants, the pilot shifted 93% of EV electricity usage away from the 4–9 p.m. peak, reduced household carbon intensity by 55% on average, and saved customers on an EV rate around

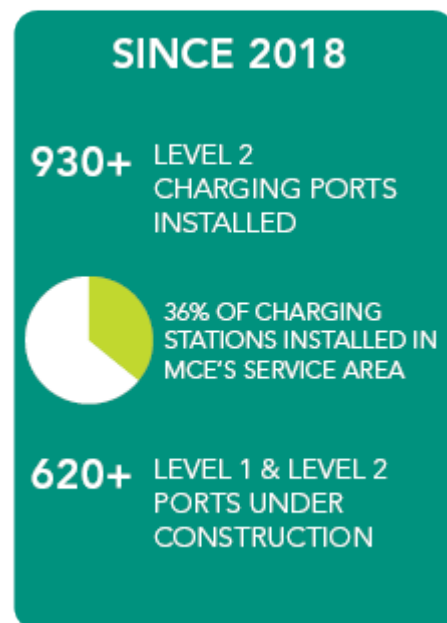
\$12/month before event-based incentives. The expanded program has a goal of 4,000 enrolled customers by May 2023.

Since 2018, MCE has supported or funded 1,550 Level 2 EV charging ports for workplaces or multifamily properties. More than 930 ports have been installed — equivalent to 36% of all public Level 2 charging ports in the four counties that MCE serves — and more than 620 ports under planning and in construction. MCE is coordinating with PG&E on its EV Charge Network program and providing a supplemental rebate to customers who participate in that program. More than 71% 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. A California Energy Commission (CEC) grant won by Contra Costa Transportation Authority and MCE will increase EV engagement, access to electric transportation, and deployment of charging infrastructure, especially at multifamily properties, across marginalized communities in the county from summer 2021 to spring 2024.

MCE also partnered with Bay Area Air Quality Management District and GRID Alternatives to win grants from the CEC and Marin Community Foundation. These grants are anticipated to start in the second half of 2022. Implementation will focus on deepening relationships with local housing authorities, affordable housing administrators, owners, and property managers to increase awareness and adoption of tenant-based EV charging stations. The implementation consists of installing EV charging and providing concierge education on how to qualify for income-based EV incentives, including MCE's own EV rebate.

Lastly, MCE built upon its [rebate program for income-qualified customers](#) interested in purchasing a new EV with the goal of increasing understanding of and access to EVs beyond the typical early adopters. This program has helped over 244 customers purchase or lease a new EV and will expand in fiscal year 2022/2023 to include used EVs as well.



Energy Efficiency

MCE is an administrator of California's ratepayer-funded, energy efficiency 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 is administered by the CPUC. MCE has received CPUC funding approval for energy efficiency 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 energy efficiency programs are based on average life cycle savings (figure 9).

MCE also invests in multiple workforce development initiatives to encourage the growth of green jobs through the approval of its [Energy Efficiency Business Plan](#). MCE also coordinates closely with PG&E to maximize community benefits.

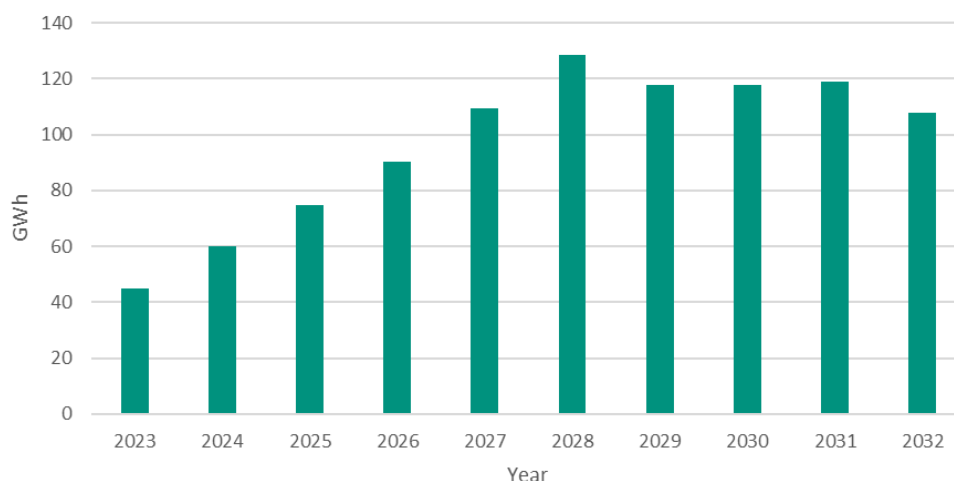


Figure 9: MCE cumulative annual energy efficiency impacts (GWh)

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 \$5,000). MCE's NEM Program currently includes more than 61,500 customers (10.6% of all MCE accounts) with an aggregate-installed renewable generating capacity of approximately 642 MW.

Through 2021, MCE incentivized 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. By leveraging multiple sources of funding, GRID Alternatives installs these systems in disadvantaged communities (DACs) at little to no cost for the customer. MCE contributed \$900 per solar installation to qualifying low-income, single-family residents. MCE also offered a \$0.41 per watt (AC) rebate to low-income, multifamily properties that install solar to benefit their tenants.

From 2012–2021, MCE allocated \$725,000 toward these two rebate programs, and supported the installation of 688 residential solar PV systems on low-income multifamily homes. These installations represent more than 1,400 kW of new, local, renewable capacity that helps reduce monthly energy bills for low-income families.

Energy Equity

Green Access and Community Solar Connection Programs

MCE is collaborating with the CPUC, IOUs, and other CCAs to develop [community solar programs](#) for customers in CalEnviroScreen designated disadvantaged communities (DACs). These programs will be supported by the development of an additional 5.92 MW of new, local, clean energy capacity.

The Green Access program will supply 100% renewable power to customers located in a DAC with an accompanying 20% bill discount. The program currently serves over 3,000 customers, and MCE prioritizes customers who live in the highest scoring DACs, are currently participating in either the California Alternate Rates for Energy (CARE) or Family Electric Rate Assistance (FERA) discount program, and need additional support to get caught up on their energy bills.

The Community Solar Connection program will offer 100% solar energy and provide a 20% discount on the electricity portion of participating customers' energy bills. This program will develop a solar project within 5 miles of a DAC to serve participating customers. At least 50% of the program's participation capacity will be reserved for customers who are enrolled in CARE or FERA discount programs. Customers will be eligible to enroll in this program as soon as the solar resources come online, possibly as early as the end of 2023.

MCE estimates that it will be able to provide approximately 3,500 customers with bill discounts and access to more renewable energy after both programs are up and running.

COVID-19 Customer Support

In response to the COVID-19 pandemic, MCE launched additional programs and services to support its customers. The \$10 million [MCE Cares Credit](#) Program offers qualifying customers bill relief in the form of a \$10 monthly bill credit for lower-income residential customers and a 20% monthly bill credit for small businesses. This program pairs with state [discount programs](#) and the [Arrearage Management Program](#) (AMP), in which MCE was an early participant.

MCE's ongoing COVID relief efforts include [suspension of collections](#); direct outreach to customers to encourage enrollment in [existing discount and utility bill assistance programs](#); an education and awareness program to spread the word about community resources and programs for financial assistance; and [free EV charging](#) at MCE's San Rafael office. The relief efforts were promoted online, via social media, with signage, and through local business and residents' groups from early 2020 through the spring of 2022, when MCE employees returned to the offices.

MCE also launched two webpages providing a comprehensive list of COVID support resources for [residential](#) and [small business](#) customers, by county. At the end of 2021, MCE partnered with 11 local CBOs to distribute bill-savings program flyers in English and Spanish. MCE noted an increase in website traffic to our bill-savings pages after distributing this flyer.

Equity in Power Purchasing

MCE's [2021 Open Season solicitation](#) was the first year that suppliers were encouraged to consider community benefits and equity metrics when submitting offers. Inclusion of community benefits was also part of Open Season 2022. Some of the optional elements that MCE solicited in offers as part of Open Season included:

- Support for educational programs, environmental justice initiatives, and workforce development and training initiatives;
- Participation of contractors, subcontractors, or businesses owned by disabled veterans;
- Projects located in a designated DAC or employing workers living in a designated DAC; and
- Use of components and materials manufactured or assembled in the United States.

In late 2020, when issues related to the use of forced labor for solar equipment production in Xinjiang, China, were reported, MCE incorporated new language into its PPA term sheets and contracts that prohibit MCE from contracting with facilities that rely on equipment or resources built with forced labor. This language was incorporated into MCE's 2021 and 2022 Open Season, Green Access, and Community Solar Connection PPAs, and will continue to be an MCE procurement requirement.

Workforce and Supplier Diversity

MCE has long been committed to supporting the economic health and sustainability of member communities. As demonstrated by MCE's [Sustainable Workforce and Diversity Policy 011](#), originally adopted in 2014, MCE supports sustained and fairly compensated local job opportunities through participation in the energy industry. The policy outlines specific efforts to prioritize workforce development through MCE's Feed-in Tariff, energy efficiency projects, contracts for services and supplies, and direct hire of MCE staff. **To the extent allowed by state law, MCE seeks to create market incentives and partnerships to encourage a diverse and 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 MCE's service area;
- Direct use of union members from multiple trades;
- Quality training, apprenticeship, and pre-apprenticeship programs;
- Direct use of businesses local to MCE's service area;
- Development of California-based job opportunities;
- Business and workforce initiatives located in low-income and frontline communities;
- Direct use of Disabled Veteran-owned Business Enterprises (DVBE) and LGBT-owned Business Enterprises (LGBTBE);
- Direct use of green and sustainable businesses; and
- Hiring practices that promote diversity in the workplace.

More recently, in 2022 MCE adopted [Sustainable Workforce Guidelines](#) to create a more detailed plan for implementing Policy 011, further demonstrating our commitment to procuring resources that benefit our customers, our planet, and our future. These guidelines outline how MCE integrates these priorities into

PPAs with third parties, MCE-owned or MCE-led power generation projects, and MCE customer programs, services, supplies, and direct hiring. For example:

- When possible, MCE shall give preference to projects within MCE's service area and to CBOs and local associations serving disadvantaged and low-income communities.
- MCE has three tiers of requirements for union labor depending on the location of proposed projects. Projects located in Contra Costa County and over 1 MW in size must adhere to the terms of the PLA between MCE and International Brotherhood of Electrical Workers (IBEW) Local 302. Projects within Napa, Marin, or Solano County must participate in a Project Labor Agreement (PLA) of similar scope and requirements with participating unions for workforce hired as described in the PLA. Projects outside of MCE's service area are encouraged to enter into project labor agreements of similar scope and requirements with participating unions for workforce as described in the PLA.
- For projects located in MCE's service area, 50% of work hours are required to come from permanent residents who reside within the same county as the project.
- MCE will not accept any proposals for projects that rely on equipment or resources built with forced labor. MCE adopted this prohibition two years ahead of federal law, signed by President Biden in June 2022.
- Any renewable development project that is developed or owned by MCE qualifies as a public works project and requires prevailing wages to be paid.

These efforts have resulted in significant local developments. To date, MCE has helped build almost [48 MW](#) of new renewable projects in our service area. All local projects over 1 MW were built with union labor. Additionally, in 2021 MCE launched two new community solar programs, [Community Solar Connection and Green Access](#) (described in section Energy Equity, above). These programs offer qualifying customers living in a [CalEnviroScreen-designated DAC](#) access to 100% renewable energy and a 20% discount on their electricity bills for up to 20 years. Both programs will be supported by the development of additional new clean energy resources.

MCE's Sustainable Workforce Policy also directs MCE to purchase goods and services from local businesses wherever possible. While more than 90% of MCE's annual budget is spent on power purchases, MCE is proud to have contracted with small and local businesses for \$57,030,427 worth of services in 2021, and continues to identify new ways to expand our local economic impact. While Proposition 209 prevents MCE, as a government agency, from taking direct steps to increase our procurement from many categories of diverse businesses, MCE has tracked and reported on its procurement from diverse businesses for the last two years. In 2021, MCE contracted for \$1,002,197 worth of business that are women-owned; minority-owned; disabled veteran-owned, and LGBT-owned.

Ad Hoc Workforce Development

Growing the green economy, supporting local contractors, and providing access to workforce development opportunities are core to MCE's mission. One avenue for job creation is through energy efficiency, which provides the multiple benefits of lower energy consumption, saving customers money, reducing greenhouse gas pollution, and building more equitable communities. For example, MCE has:

- Partnered with the Marin City Community Development Corporation from 2012–2016 to train 59 community members and connect them to solar installation and energy efficiency jobs.
- Partnered with RichmondBUILD in 2013, 2015, and later in 2021 to help 44 job seekers develop construction, numeracy, and literacy skills, and later connect them with related jobs for MCE Solar One, an LED retrofit project for city streetlights, and electrification.
- Partnered with Rising Sun Center for Opportunity in 2012 and 2016 to train youth to provide no-cost energy and water-saving assessments in the cities of Richmond, El Cerrito, and San Pablo. More recently in 2021–22, helped customize a Rising Sun training construction curriculum to train five cohorts on green construction basics and give them an intro to electrification and energy storage systems.
- Coordinated the installation of a new call center in the City of Pittsburg through its contract with Calpine in 2017, and then partnered with Future Build in Pittsburg (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.
- Partnered with GRID Alternatives in 2021 to train six job seekers from Marin City and the Canal District on solar installation skills and provided them a paid stipend for their participation, to increase access and minimize barriers.
- Sponsored a collaboration with Puertas Abiertas Community Resource Center to develop a direct connection between local hard-to-reach communities and the opportunity to inform and engage with these communities on MCE programs and services, especially those programs developed specifically for underserved populations. This program sponsorship was a workforce development opportunity for organization staff to learn more about renewable energy, energy efficiency, and environmental sustainability.

To deepen our commitment to creating equitable green jobs, MCE has been an active participant in the regional High Road Training Partnership (H RTP) led by the Rising Sun Center for Opportunity since 2021. The joint project aims to understand regional decarbonization labor market demands, workforce issues, and training needs; establish industry labor standards; and develop clear, accessible training pathways to building decarbonization jobs in the Bay Area, especially for entry-level and disadvantaged workers.

Together with other key partners — including the Association for Energy Affordability, Electrify My Home, Inclusive Economics, Eco Performance Builders, Building Electrification Institute, Bay Area Metro, GEN TEC Services, Emerald Cities Collaborative, StopWaste, the Greenlining Institute, Construction Trades Workforce Initiative, the Cities of Berkeley and Oakland and the Association of Bay Area Governments — staff collaborate and hear from leaders in the industry to address important equity and access aspects of a renewable economy. As a member of the Equity and Public Agencies Working Groups, staff work to lay the groundwork for this industry while improving agency programming.

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 allows 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 path is especially important in communities where the fossil fuel industry has long been a primary employer for generations of families. To ensure that a decarbonized energy future provides economic opportunities for all, workforce programs like these are a necessary link to train for the skills needed to enter the green economy.

As a result, MCE launched the Workforce, Education, and Training (WE&T) Program in 2020 to create a geographically diverse pool of training partners able to provide job seekers with the skills necessary to be competitive in the energy efficiency and electrification sector. This program funds on-the-job training and up to 12 months of wrap-around services to support their transition to a new career in energy efficiency and electrification. While providing an on-ramp for job seekers, the WE&T Program concurrently allows vetted contractors working in MCE's service area to be matched with these prequalified, job seekers for 160 hours of no-cost project assistance and labor. By influencing both the supply side and demand side of this industry, MCE hopes to increase the number of skilled workers and strengthen the local labor market.

With engagement from local partners, community colleges, and the existing contractor workforce, MCE has developed an internship program to achieve the following goals:

- Upgrade the existing contractor workforce's technical expertise 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; and
- Provide project site opportunities where the intern can install efficiency and electrification 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 that it can continue investing in technical training, creating on-ramps to career pathways, providing job security, and building the economic health of member communities.

Supplier Diversity

To further MCE's tracking and reporting of labor practices and the diversity of its supplier base, MCE has been building relationships with the CPUC's General Order 156 Supplier Diversity staff and Clearinghouse since 2018. This effort has included MCE staff attending CPUC symposiums and hosting annual [Certify & Amplify](#) informational workshops 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 diversity and labor practices from its suppliers, including its power suppliers. In compliance with California Proposition 209, the Affirmative Action Initiative, 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 to require CCA participation in this annual reporting program to the CPUC. The report outlines agency procurement from diverse business enterprises, as well as strategies for increasing procurement from small, local, and diverse businesses. In 2021, MCE submitted its first [Supplier Diversity Report](#) to the CPUC and 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.

MCE hosted our fourth annual Certify & Amplify event in June 2022, continuing to educate diverse and local businesses about expanding contracting opportunities. In addition to providing a platform for our repeat speakers (Bezawit Dilgassa from the CPUC and Teresa Rubio-Dorsey from Veteran Launch), this year, for the first time, the webinar featured a speaker from the California Department of General Services. Wayne Gross spoke about additional certification opportunities for small businesses and disabled veteran-owned businesses.

Due in part to engagement with the California Hispanic Chamber, this year marked the first year that MCE's Certify & Amplify Webinar was also a bilingual event, with live interpretations provided in Spanish during the event and all pre- and post-event materials available in both languages. By providing bilingual outreach materials, MCE expanded our supplier diversity audience to include more diverse perspectives.

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 OIRP 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 OIRP 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 planning period, MCE must take into account numerous regulatory requirements, some of which are briefly described below. For more detailed information on the regulations underlying this OIRP, see [Appendix C](#).

Renewable Portfolio Standard and Senate Bill 100 (2018)

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. MCE met the 2030 RPS requirement 13 years ahead of schedule.

Resource Adequacy

Resource Adequacy (RA), a California program jointly administered by the CEC, the CPUC, 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 consists of three products: System RA, Local RA, and Flexible RA. Local RA obligations are assigned to a Central Procurement Entity starting in 2023.

In addition, per CPUC Decisions (D.) 19-11-016 and D. 21-06-035, LSEs are required to procure “Incremental System Capacity,” which is new-build RA-eligible capacity that will be available to the CAISO to meet near-, mid-, and long-term reliability needs. Collectively, this procurement represents almost 15,000 MW of net qualifying capacity that is to be online from 2021 through 2026. Between these 2 mandates, MCE is responsible for procuring 420 MW of net qualifying capacity (87.5 MW under D.19-11-016; 332 MW under D.21-06-035), which translates to more than 600 MW of new, wholesale capacity by 2026. MCE is planning to meet this need via procurement of a diverse collection of resources that includes over 200 MW of solar paired with over 150 MW of four-hour battery storage; approximately 200 MW of stand-alone battery storage; 29 MW from clean, baseload resources, such as geothermal; and 29 MW from long-duration storage, which is defined as storage capable of discharging at its full capacity for at least eight hours. MCE’s procurement to date towards these compliance requirements is illustrated in Table 9 below.

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 CEC on an annual basis. A key output of the PSD program is the Power Content Label (PCL, figure 8 above). 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

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 2023 and beyond, subject to market and regulatory changes (see table 3). To structure such a clean Light Green portfolio by 2023, MCE will procure three products: (1) RPS-eligible renewable energy (2) large hydroelectric energy, and (3) Asset Controlling Supplier (ACS) energy, the vast majority of which is large hydroelectric.¹¹ 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.

As shown in table 3 below, 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,¹² and MCE procures 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.

¹¹ The California Air Resources Board (CARB) recognizes three ACSs: Bonneville Power Administration, Powerex, and Tacoma Power. On its website, CARB publishes the emissions factors for each of these three suppliers: [Mandatory GHG Reporting - Asset Controlling Supplier](#).

¹² Technology-specific emissions factors can be found in table A.III.2 of the 2014 IPCC report available at: [Technology-specific Cost and Performance Parameters](#).

Table 3: MCE Light Green portfolio targets¹³

10-Year Light Green Portfolio Targets	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
PCC 1 Renewable	60%	60%	65%	70%	75%	80%	85%	85%	85%	85%
PCC 2 Renewable	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Large Hydro + ACS	37%	37%	32%	27%	22%	17%	12%	12%	12%	12%
Total Renewable	60%	60%	65%	70%	75%	80%	85%	85%	85%	85%
Total Renewable + Large Hydro + ACS	97%	97%	97%	97%	97%	97%	97%	97%	97%	97%
GHG-Free Equivalent	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%

Utility Scale 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 future decommissioning of California's last nuclear power plant, Diablo Canyon. For reliability, energy storage can provide energy to the grid including scheduled energy and regulation energy required by the California Independent System Operator (CAISO) 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.

MCE's 2022 CPUC IRP analysis highlighted a need for 634 MW of grid level storage capacity over the course of the planning period. Some of this storage procurement will be applied to MCE's 332 MW of net qualifying capacity to meet its mid-term reliability procurement mandate from the CPUC. The rest will be above and beyond current mandates and will serve to further balance MCE's portfolio and contribute to grid reliability.

In 2021, the CPUC mandated that jurisdictional LSEs collectively procure a minimum of 1,000 MW of long-duration storage by 2026.¹⁴ MCE's share of this long-duration storage is 29 MW.

¹³ 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.

¹⁴ CPUC Decision 21-06-035.

Joint CCA Procurement Efforts

In 2021 MCE partnered with three other CCAs to launch [California Community Choice Financing Authority \(CCCFA\)](#), a first-of-its-kind renewable energy prepay bond agency. This prepay structure helps MCE reduce the cost of power purchasing and allows us to shift ratepayer dollars to deliver cheaper and local clean energy programs.

In fall 2021, MCE and partners at CCCFA issued California's first ever municipal non-recourse Clean Energy Project Revenue Bonds through the California Community Choice Financing Authority (CCCFA). Since last year, three separate bond issuances, valued at over \$3 billion for thirty-year terms, support the purchase of clean electricity to serve over 2.5 million residents and businesses across the Bay Area and Central Valley. The three Clean Energy Project Revenue Bonds prepay for the purchase of over 650 megawatts of clean electricity – enough to power 265,000 homes and reduce 330,000 metric tons of greenhouse gas emissions annually.

MCE's transaction was underwritten by Goldman Sachs and produced approximately \$700 million in bond proceeds. The issue received an investment grade "A2" rating from Moody's Investors and a "Green Climate Bond" designation from Kestrel Verifiers. The transaction will reduce the cost of the renewable energy from the prepaid projects by over \$2.5 million a year for MCE ratepayers. .

Since 2010, MCE has contributed almost \$214 million in community reinvestment.

Non-Fossil Resource Adequacy

MCE is making meaningful efforts to purchase RA from clean resources in an effort to eliminate the need for polluting fossil-based resources which cause climate change and impact human health. MCE is planning to meet RA targets with renewables, large hydro/ACS and energy storage (see Energy Storage section above). To the extent that the methodologies for calculating Qualifying Capacities and NQCs 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 83 purchase contracts for renewable energy, storage, large hydroelectric/ACS energy, and CAISO load hedging via fixed-price forward contracts. Table 4 excludes MCE's numerous RA-only contracts from existing facilities, and it is only a snapshot in time. MCE's portfolio of contracts is continually evolving.

Table 4: MCE portfolio of resources as of 9/20/2022¹⁵

Counterparty	Generation Facility	Generation Technology	Contract MW	Term	Annual GWh	Generation Location
Renewables: Contract Terms ≥ 10 years						
AES	MCE Solar One	Solar PV	11	2018-2037	22	Contra Costa, CA
AES	Antelope Expansion II	Solar PV	105	2019-2038	284-312	Lancaster, CA
Baywa	Strauss Wind	Wind	99	2022-2041	300	Santa Barbara, CA
Calpine Energy Services, L.P.	Geysers	Geothermal	10	2017-2026	88	Sonoma, CA
Central Marin Sanitation Agency	CMSA (FIT)	Biogas	1.0	2022-2032	4	Marin, CA
Clearway	Daggett	Solar PV + Battery Storage	110 MW PV + 60 MW BESS	2023-2037	319-342	San Bernardino, CA
ConEdison	Great Valley Solar 1	Solar PV	100	2018-2033	279-290	Fresno, CA
Dominion	Goose Lake	Solar PV	12	2015-2040	29-34	Kern, CA
Dominion	Corcoran	Solar PV	11	2015-2040	25-30	Kings, CA
Dominion	Buck Institute	Solar PV	1	2015-2040	2	Marin, CA
DRES Quarry LLC	Cooley Quarry 1 (FIT)	Solar PV	1	2017-2037	3	Marin, CA
DRES Quarry LLC	DRES Quarry 2.4 (FIT)	Solar PV	0.1	2019-2039	0.3	Marin, CA
East Bay Municipal Utility District	Pardee & Camanche Powerhouses	Small Hydro	34	2015-2025	70	San Joaquin, CA
EDF Renewables	Desert Harvest	Solar PV	80	2020-2040	237-262	Riverside, CA
Fallon Two Rock Rd Solar Farm LLC	Fallon Two Rock Rd (FIT)	Solar PV	1	2023-2043	2	Marin, CA
G2 Energy	Ostrom	Landfill Gas	1.7	2013-2031	12	Yuba, CA
G2 Energy	Hay Rd	Landfill Gas	1.4	2013-2033	11	Solano, CA
Genpower	Lincoln Landfill	Landfill Gas	4.8	2013-2033	27	Placer, CA
Hayworth-Fabian, LLC	Oakley RV and Boat Storage (FIT)	Solar PV	1	2018-2038	2	Contra Costa, CA
Hayworth-Fabian, LLC	Oakley Phase 3	Solar PV	1	2022-2042	2	Contra Costa, CA
Kern and Tule Hydro LLC	Kern Hydro	Small Hydro	12	2021-2036	57	Kern, CA
Larkspur Real Estate Partnership I	Cost-Plus (FIT)	Solar PV	0.3	2016-2036	1	Marin, CA
Longroad	Little Bear 4	Solar PV	50	2020-2040	124-137	Fresno, CA
Longroad	Little Bear 1	Solar PV	40	2020-2040	99-109	Fresno, CA
Longroad	Little Bear 3	Solar PV	20	2020-2040	50-55	Fresno, CA
Longroad	Little Bear 5	Solar PV	50	2020-2040	124-137	Fresno, CA
Napa Jamieson Canyon, LLC	Napa Self Storage 2 (FIT)	Solar PV	0.66	2022-2042	1	Napa, CA
Northshore Solar Partners LLC	Freethy Industrial Park 2 (FIT)	Solar PV	1	2016-2036	2	Contra Costa, CA
Northshore Solar Partners LLC	Freethy Industrial Park 1 (FIT)	Solar PV	1	2016-2036	2	Contra Costa, CA
RE Mustang 4 LLC	RE Mustang	Solar PV	30	2015-2032	79-84	Kings, CA
RP Napa Solar 1, LLC	American Canyon Solar A (FIT)	Solar PV	1	2019-2039	3	Napa, CA
RP Napa Solar 1, LLC	American Canyon Solar B (FIT)	Solar PV	1	2019-2039	3	Napa, CA
RP Napa Solar 1, LLC	American Canyon Solar C (FIT)	Solar PV	1	2019-2039	3	Napa, CA
RP Napa Solar 2, LLC	Soscol Ferry C (FIT)	Solar PV	1	2020-2040	3	Napa, CA

¹⁵ Table 4 excludes MCE's RA-only contracts from existing facilities but includes all other purchase contracts.

RP Napa Solar 2, LLC	Soscol Ferry D (FIT)	Solar PV	1	2020-2040	3	Napa, CA
RP Napa Solar 3, LLC	Silveira Ranch A (FIT)	Solar PV	1	2021-2041	2	Napa, CA
RP Napa Solar 3, LLC	Silveira Ranch B (FIT)	Solar PV	1	2021-2041	2	Marin, CA
RP Napa Solar 3, LLC	Silveira Ranch C (FIT)	Solar PV	1	2021-2041	2	Napa, CA
RPCA Solar 2, LLC	Byron Hot Springs (FIT)	Solar PV	1	2021-2041	3	Contra Costa, CA
RPCA Solar 3, LLC	Byron Highway Solar (FIT)	Solar PV	5	2022-2042	14	Contra Costa, CA
RPCA Solar 4, LLC	Lake Herman Solar (FIT)	Solar PV	5	2021-2041	13	Solano, CA
San Rafael Airport LLC	San Rafael Airport 2 (FIT)	Solar PV	1	2020-2040	2	Marin, CA
San Rafael Airport LLC	San Rafael Airport (FIT)	Solar PV	1	2012-2032	2	Marin, CA
Small World Trading CO	EO Products (FIT)	Solar PV	0.056	2018-2038	0.1	Marin, CA
Voyager Wind III, LLC	Voyager	Wind	43	2018-2030	138	Kern, CA
Waste Management	Redwood Landfill	Landfill Gas	4	2017-2037	31	Marin, CA
Golden Fields Solar IV, LLC	Golden Fields	Solar PV	100 MW PV + 75 MW BESS	2025-2040	322	Kern, CA
Ranch Sereno Clean Power LLC	Ranch Sereno	Solar PV	2 MW PV + .8 MW BESS	2024-2044	5	Contra Costa, CA
CES Electron Farm One	Conflitti	Solar PV	4.64	2023-2043	12	Fresno, CA
Counterparty	Generation Facility	Generation Technology	Contract MW	Term	Annual GWh	Generation Location
Renewables: Contract Terms < 10 years						
Pattern Energy Management Services LLC	Various Wind	PCC1	N/A	2022-2023	300	NM
NextEra Energy Marketing, LLC	Biomass	PCC1	N/A	2023	155	CA
Powerex Corp.	Multiple	PCC1	N/A	2021-2023	50-100	British Colombia, Canada
Portland General Electric Company	Multiple	PCC1	N/A	2022	75	WA, OR
Pacific Gas & Electric Company	Multiple	PCC1	N/A	2023-2024	970	Various
Morgan Stanley Capital Group	Multiple	PCC1	N/A	2021-2023	50	CA, WA, OR, ID
Morgan Stanley Capital Group	Multiple	PCC1	N/A	2021-2023	100	CA, WA, OR, ID
Large Hydroelectric / ACS						
Shell Energy North America	Multiple	Large Hydro	N/A	2023	250	WA
Brookfield Energy Marketing LP	Multiple	Large Hydro/ACS	59-1,300	2021-2024	100-225	Pacific Northwest
Shell Energy North America	Multiple	Large Hydro	N/A	2023-2023	200	CA
Morgan Stanley Capital Group	Multiple	Large Hydro	N/A	2021-2024	400	MT, WA, ID
Western Area Power Administration	Central Valley Project	Large Hydro	N/A	2015-2024	25	CA
Western Area Power Administration	Central Valley Project	Large Hydro	N/A	2025-2054	25	CA
Powerex Corp.	Multiple	Large Hydro	N/A	2023-2025	250	British Colombia, Canada
Powerex Corp.	Multiple	Large Hydro/ACS	N/A	2022-2025	150-317	British Colombia, Canada
Tenaska Power Services Co.	Exchequer Hydro	Large Hydro	N/A	2022-2024	300	CA
Shell Energy North America	Multiple	Large Hydro	N/A	2024-2024	200	CA
Fixed Price Forward Contracts						
Direct Energy Business Marketing	N/A	N/A	N/A	2024-2025	55-82	N/A
Direct Energy Business Marketing	N/A	N/A	N/A	2024-2026	24-96	N/A
Exelon Generation Company	N/A	N/A	N/A	2023-2025	28-122	N/A
Exelon Generation Company	N/A	N/A	N/A	2021-2025	73-100	N/A
Shell Energy North America	N/A	N/A	N/A	2020-2024	69-339	N/A
Morgan Stanley Capital Group	N/A	N/A	N/A	2023-2023	545	N/A
Exelon Generation Company, LLC	N/A	N/A	N/A	2021-2023	232-315	N/A
Morgan Stanley Capital Group	N/A	N/A	N/A	2024-2025	20-96	N/A
Morgan Stanley Capital Group	N/A	N/A	N/A	2022-2025	23-123	N/A
Morgan Stanley Capital Group	N/A	N/A	N/A	2022-2025	25-41	N/A
NextEra Energy Marketing, LLC	N/A	N/A	N/A	2023-2024	64-96	N/A
Shell Energy North America	N/A	N/A	N/A	2022-2025	96-193	N/A
Shell Energy North America	N/A	N/A	N/A	2022-2025	62-368	N/A
Shell Energy North America	N/A	N/A	N/A	2022-2026	49-153	N/A
Transalta Energy Marketing (U.S.)	N/A	N/A	N/A	2023	122	N/A
NextEra	N/A	N/A	N/A	2023-2023	621	N/A
New Build Energy Storage						
Hecate Grid Humidor Storage 185 LLC	N/A	N/A	185 MW BESS	2024-2034	N/A	Los Angeles, CA

Projected 2023 Resource Mix

As shown in figure 10 below, MCE anticipates that 98% of its total 2023 retail sales will be sourced from renewables, large hydroelectric, and ACS energy. This estimated retail sales includes all necessary supply to serve retail sales for MCE's Light Green, Deep Green, and Local Sol product offerings.

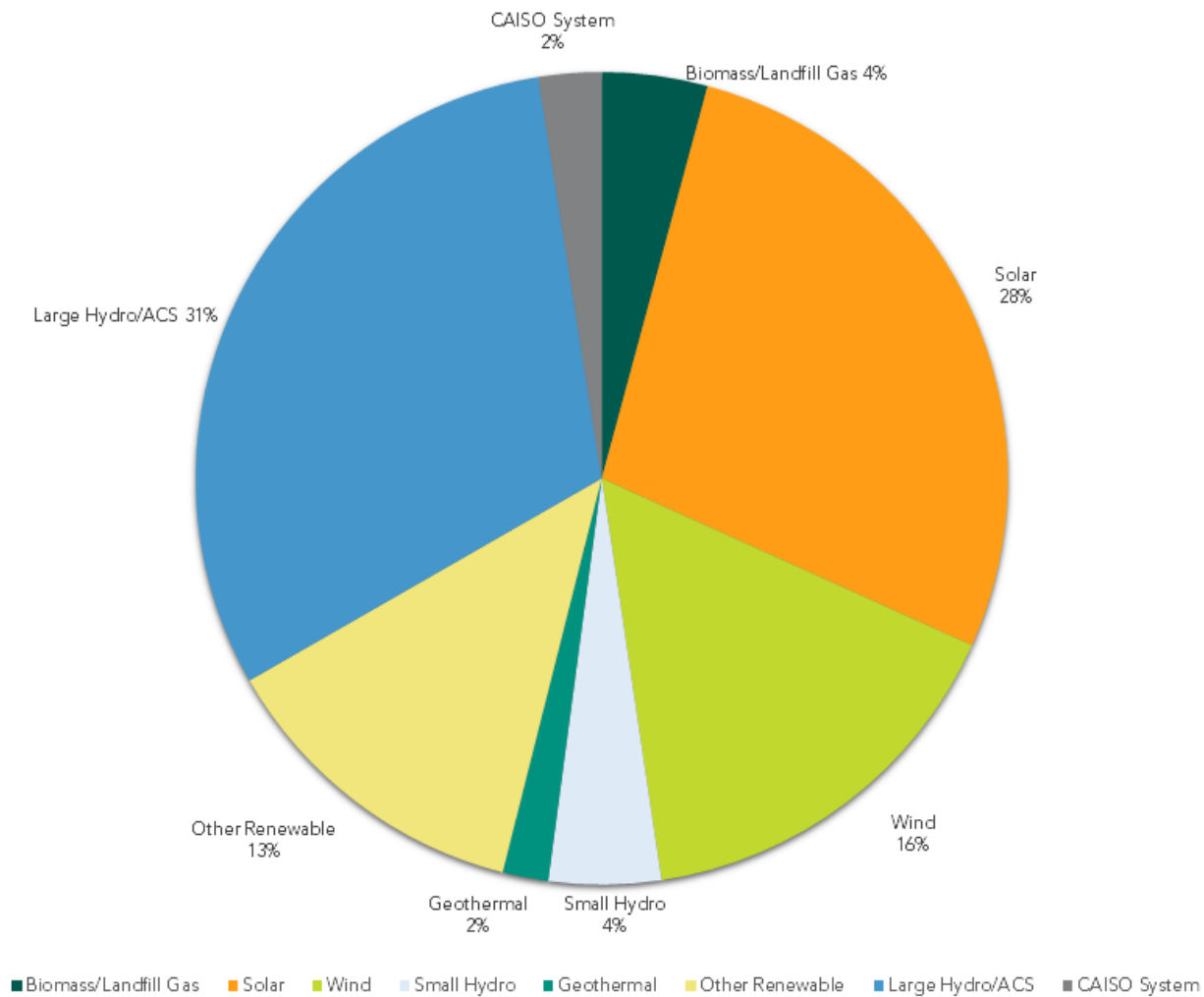


Figure 10: MCE 2023 estimated resource mix¹⁶

¹⁶ The estimated resource mix excludes Energy Efficiency/NEM

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 shown in figure 11, 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.

Renewable Resources

MCE plans to provide Light Green customers with energy that is at least 60% renewable through 2024 and 85% renewable by 2029. 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 plans to procure significant quantities of PCC 1 renewable energy, as figure 11 below illustrates. 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).

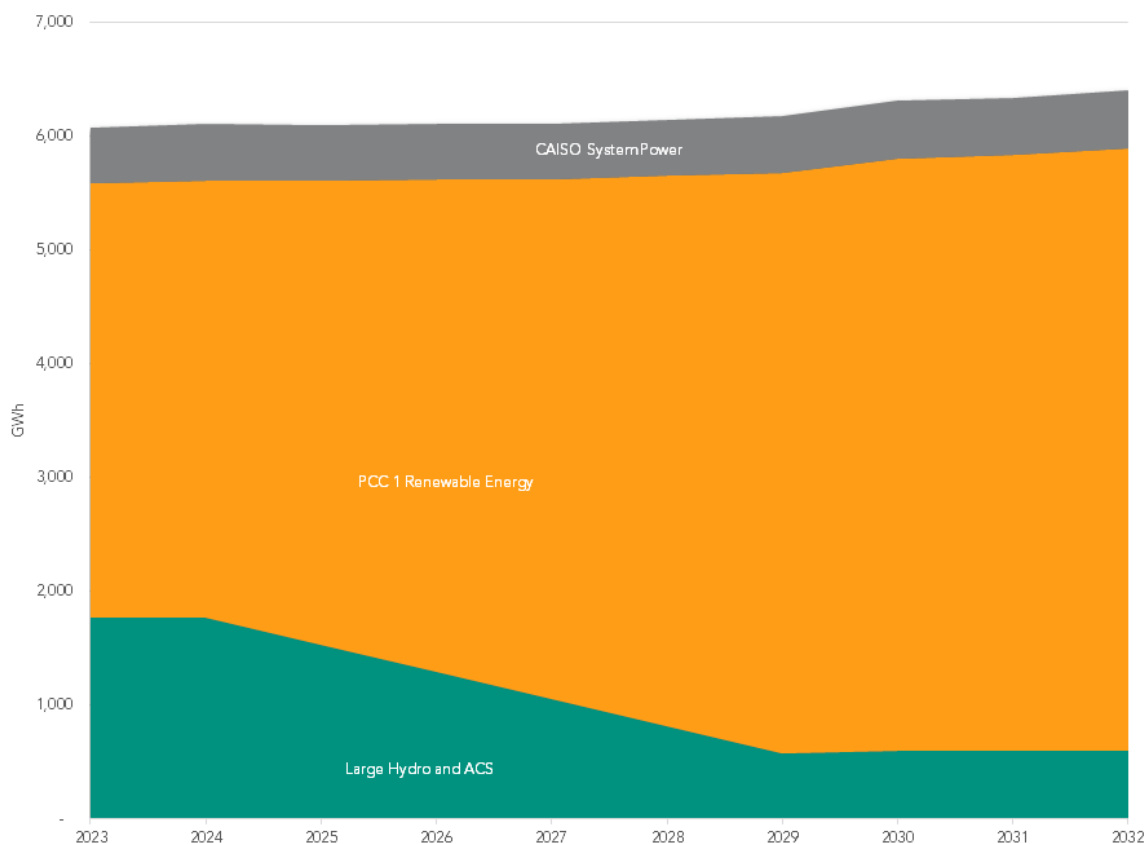


Figure 11: MCE procurement targets (GWh), 2023-2032

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, 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 below, MCE has secured contracts for renewable energy volumes in excess of applicable California RPS procurement requirements through 2025. Relative to its own RPS targets for Light Green and Deep Green, MCE needs additional renewable energy volumes for 2023 and beyond, as shown in the third portion of table 5.

Table 5: MCE renewable energy balance, 2023–2032

	2023	2024	2025	2026	2027	2028	2029	2031	2032
Retail Sales (GWh)	5,729	5,759	5,756	5,759	5,767	5,795	5,827	5,983	6,040
CA RPS Compliance Requirement	41%	44%	47%	49%	52%	55%	57%	62%	63%
MCE Light Green RPS Target	60%	60%	65%	70%	75%	80%	85%	85%	85%
MCE Deep Green RPS Target	100%	100%	100%	100%	100%	100%	100%	100%	100%

CA RPS Compliance Requirement (GWh)	2,366	2,534	2,688	2,839	2,999	3,170	3,339	3,691	3,829
MCE RPS Energy Contracted (GWh)	3,489	3,145	2,877	2,777	2,679	2,670	2,657	2,493	2,477
CA RPS Compliance Net Short/(Long) (GWh)	(1,123)	(611)	(189)	63	320	500	682	1,198	1,353

MCE (LG+DG) RPS Target (GWh)	3,822	3,842	4,082	4,325	4,572	4,835	5,103	5,236	5,285
MCE RPS Energy Contracted (GWh)	3,489	3,145	2,877	2,777	2,679	2,670	2,657	2,493	2,477
MCE (LG+DG) Net Short/(Long) (GWh)	333	697	1,205	1,549	1,893	2,165	2,446	2,743	2,808

¹⁷ Historically, MCE has contracted with PCC 1 resources located in California; however, some resources located outside 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-state, PCC 1-qualified resources to the extent that they offer increased value or other desirable portfolio attributes during the planning period.

Large Hydroelectric and ACS

For its Light Green customers, MCE has outlined a 2023 portfolio, of which 100% will be sourced from renewables, large hydroelectric, and ACS.¹⁸ 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 below. 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 the two existing ACS suppliers: Bonneville Power Administration and Tacoma Power.

Table 6: MCE large hydroelectric/ACS balance, 2023–2032

MCE Light Green Portfolio	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Large Hydro/ACS Target (%)	37%	37%	32%	27%	22%	17%	12%	12%	12%	12%
Large Hydro/ACS Target (GWh)	1,764	1,773	1,530	1,291	1,052	816	579	594	597	604
Large Hydro/ACS Under Contract (GWh)	1,762	1,495	574	24	24	25	24	24	24	25
Large Hydro/ACS Open Position (GWh)	2	278	956	1,266	1,027	792	555	569	573	580

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 that MCE does not have supply contracts that yield CAISO day-ahead revenue, MCE uses fixed-price forward contracts, as much as possible, where MCE pays a fixed price per megawatt-hour 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 (North Path 15) 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 includes contracts where MCE is not entitled to the CAISO revenue.¹⁹ 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-price forward contracts.

Resource Adequacy

MCE meets California's RA program requirements by procuring qualifying RA through PPAs and RA-only contracts. As mentioned in Section IV (and explained in more detail in [Appendix C](#)), MCE currently must secure three types of RA: System RA, Local RA, and Flexible RA, although starting in 2023 the responsibility to procure local RA shifts away from individual LSEs to a Central Procurement Entity (CPE). Importantly, Local RA supply under contract with MCE and any Local RA supply procured

¹⁸ The volume procured for Light Green will be matched by 100% carbon free power from PCC 1 renewables, large hydroelectric, and ACS resources. Dynamic and variable hourly needs may be met with system power.

¹⁹ For example, MCE uses index plus contracts where the supplier schedules power into the CAISO that 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.

by the CPE counts toward 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. Moreover, the RA program is expected to undergo significant structural changes in 2025 as the CPUC's RA framework seeks to meet capacity needs on an hourly basis rather than on a monthly peak load basis. Accordingly, MCE will likely need to re-evaluate and adjust its RA procurement over the planning horizon to ensure it has sufficient capacity under contract to meet its hourly capacity requirements.

Table 7: MCE system and local net RA requirements, 2023–2032

Average Net Requirement Across All Months	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Net System RA Requirement (MW)	970	975	980	985	990	994	999	1,004	1,009	1,015
Forecasted CPE and Other Allocations (MW)	195	196	197	198	199	200	201	202	203	204
Total System RA Requirement (MW)	1,165	1,171	1,177	1,183	1,188	1,194	1,200	1,206	1,212	1,218

Table 8: MCE flexible RA requirements, 2023

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flexible RA Requirement (MW)	469	483	453	447	415	425	361	390	352	375	473	536

Table 9: MCE incremental system capacity

September Net Qualifying Capacity	2020	2021	2022	2023	2024	2025	2026
Cumulative Incremental System Capacity Requirement (MW)	-	43.75	65.63	145.50	173	43	58
Cumulative Incremental System Capacity Contracted (MW)	-	73.41	73.41	159.99	175.7	75	
Cumulative Incremental System Capacity Net Short/(Long) (MW)	-	(29.66)	(7.78)	(14.49)	(2.7)	(32)	58

VI. Procurement

MCE's Procurement Process

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

1. Forecasting load 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 by using a combination of proprietary and public models;
6. Negotiating (and ultimately executing) PPAs, while enabling agreements and confirmations including credit provisions and collateral requirements;
7. Managing pre-Commercial Operation Date (COD) executed contracts and monitoring progress toward key development milestones (such as interconnection status, deliverability studies, siting, zoning, permitting, financing, construction, and commercial operation);
8. Managing post-COD executed contracts: obtaining generation forecasts, bidding and scheduling resources into the CAISO, validating and paying invoices;
9. Bidding and scheduling MCE's load and resources into the CAISO markets; 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 renewable energy, which are based on calendar-year targets. MCE maintains portfolio coverage targets of up to 100% in the near term (zero to five years) and leaves a greater portion open in the medium- to long-term, consistent with generally accepted industry practice.

MCE seeks 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 incremental system capacity over the planning period, resulting in over 600 MW of clean resources by 2026. 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 (NP15) 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 below. 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.

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 began 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.

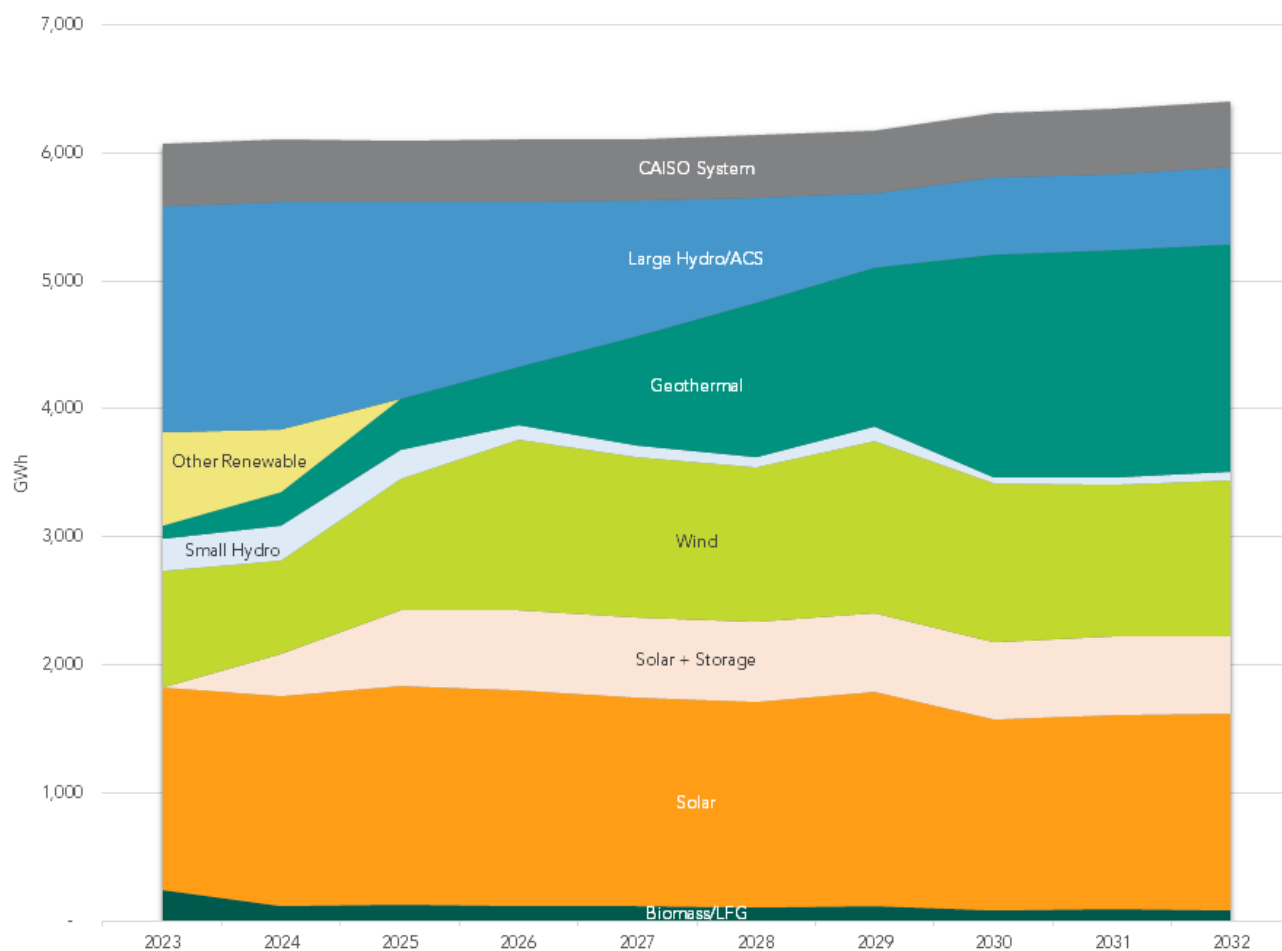


Figure 12: Projected MCE resource mix (GWh), 2023-2032

Feed-In Tariff

[MCE's Feed-in Tariff \(FIT\)](#) Program provides capacity for new renewable energy resources located in MCE's service area on a first-come, first-served basis. 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 MW, with a new applicable Tariff. By 2021 all capacity in the FIT+ Program was fully subscribed. In 2022, the FIT Program for projects sized under 1 MW was closed and the funds were reallocated to the FIT+ Program to add 10 MW of new generation capacity paired with 18 MW of storage. Table 10 provides an update on the status of MCE's FIT and [FIT Plus](#) projects as of September 20, 2022. All FIT-related documents are available on MCE's [FIT website](#).

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	Sep 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
Central Marin Sanitary Agency	0.750	1,314	Jul 2017
Oakley RV & Boat Storage	0.900	1,750	Jul 2018
EO Products	0.056	92	Dec 2018
DRES Quarry 2.4	0.100	285	May 2019
American Canyon Solar A	0.990	2,645	Sept 2019
American Canyon Solar B	0.990	2,645	Sept 2019
San Rafael Airport Unit #2	0.972	2,037	Aug 2020
Soscol Ferry C	0.990	2,601	Jan 2021
Soscol Ferry D	0.990	2,601	Jan 2021

Silveira Ranch A	0.990	2,386	Apr 2021
Silveira Ranch B	0.990	2,386	Apr 2021
Silveira Ranch C	0.990	2,386	Apr 2021
Lake Herman Solar	5.000	13,064	Sept 2021
Oakley Phase 3	0.938	1,622	Apr 2022
Byron Hot Springs	.990	2,739	TBD
Fallon Two Rock Rd Solar Farm	0.960	1,622	TBD
Byron Highway Solar	5.000	14,000	TBD
Napa Self Storage 2	0.658	1,054	TBD
CMSA Expanded Biogas Generator	0.245	2,146	TBD
Ranch Sereno Clean Power	2.000	4,844	TBD
Total	30.708	76,391	

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 load in CAISO. 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 contracting guidelines for fixed-price energy contracts in table 11 below will be used during the planning period:

Table 11: MCE fixed-price energy contracting guidelines

Time Horizon	Fixed-Price Energy Contracting Guidelines
Current Year	90% to 105%
Year Two	60% to 95%
Year Three and Beyond	Up to 70%

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 length, 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 FIT. Through a competitive solicitation, MCE issues an RFO 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. Additionally, starting in 2023, MCE has an option of taking allocations from PG&E's RPS-PCIA portfolio. MCE can take allocations for RPS energy for both short term (within compliance period) and long term (greater than 10 years).²⁰

MCE procures energy and Resource Adequacy consistent with its Board-approved Energy Risk Management Policy 015.

²⁰ On May 20, 2021, the CPUC adopted D.21-05-003, which approved a new allocation process for RPS energy from investor-owned utilities (IOUs) to other load-serving entities (LSEs), including MCE. The allocated RPS energy would come from IOU RPS resources that MCE customers pay for through the PCIA fee. The PCIA fee recovers above-market costs for commitments made by IOUs before their customers departed to other providers, like CCAs.

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 any other delegation of authorities or relevant Board resolutions.

MCE's Investment Grade Credit Ratings

In 2018, MCE was the first CCA to receive a rating. 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. S&P Global Ratings reviewed and [awarded MCE an "A" rating with a Stable Outlook](#) in February of 2021 and affirmed the "A" rating and Stable Outlook in May of 2022.

These 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, ensures full recovery of costs through independent local rate-setting, has strong financial flexibility due to positive cash flows, and adequate liquidity levels. In 2020 MCE increased the targeted liquidity reserve to 240 days cash-on-hand (DCOH) and its target Net Position from 40% to 60% of operating expenses. As of the end of the March 31, 2021 fiscal year, MCE maintained over 196 DCOH and a Net Position of 46% of operating expenses. MCE expects to meet these new targets of 240 DCOH and 60% of operating expenses by June 30, 2023.

Appendix A: Load and Resource Table

Table 12: MCE resource balance

MCE Resource Balance (August 2022)										
	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>
I. Energy Requirements (GWh)										
Baseline Retail Load	6,195	6,248	6,284	6,353	6,448	6,575	6,688	6,799	6,811	6,845
Energy Efficiency	(45)	(60)	(75)	(90)	(109)	(128)	(118)	(118)	(119)	(108)
Distributed Generation	(980)	(1,078)	(1,186)	(1,304)	(1,435)	(1,578)	(1,736)	(1,788)	(1,842)	(1,851)
Electric Vehicle Load	536	613	683	737	785	833	884	937	990	995
Building Electrification	23	36	50	64	78	93	109	125	142	160
Retail Load (Net of EE/DG/EV)	5,729	5,759	5,756	5,759	5,767	5,795	5,827	5,955	5,983	6,040
Distribution Line Losses and Unaccounted For Energy	344	346	345	346	346	348	350	357	359	362
Total Energy Requirements	6,072	6,104	6,101	6,105	6,113	6,143	6,177	6,313	6,342	6,402
II. Volume Targets										
Light Green Renewable Energy Volume Targets (GWh)										
Portfolio Content Category 1	2,861	2,875	3,109	3,346	3,586	3,842	4,104	4,207	4,230	4,279
Portfolio Content Category 2	-	-	-	-	-	-	-	-	-	-
Portfolio Content Category 3 (REC Only)	-	-	-	-	-	-	-	-	-	-
Subtotal, Light Green Renewable Energy Volume Targets	2,861	2,875	3,109	3,346	3,586	3,842	4,104	4,207	4,230	4,279
Deep Green Incremental Renewable Energy Volume Targets (GWh)										
Portfolio Content Category 1	961	967	973	980	986	993	999	1,006	1,006	1,006
Large Hydro/ACS Energy Volume Targets (GWh)	1,764	1,773	1,530	1,291	1,052	816	579	594	597	604
III. Contracted Resources										
Renewable Resources Under Contract (GWh)										
Portfolio Content Category 1	3,489	3,145	2,877	2,777	2,679	2,670	2,657	2,648	2,493	2,477
Portfolio Content Category 2	-	-	-	-	-	-	-	-	-	-
Portfolio Content Category 3 (REC Only)	-	-	-	-	-	-	-	-	-	-
Subtotal, Renewable Resources Under Contract	3,489	3,145	2,877	2,777	2,679	2,670	2,657	2,648	2,493	2,477
Large Hydro/ACS Resources Under Contract (GWh)	1,762	1,495	574	24	24	25	24	24	24	25
IV. Open Positions										
Renewables Open Position (GWh)										
Portfolio Content Category 1	333	697	1,205	1,549	1,893	2,165	2,446	2,565	2,743	2,808
Portfolio Content Category 2	-	-	-	-	-	-	-	-	-	-
Portfolio Content Category 3	-	-	-	-	-	-	-	-	-	-
Total Renewables Open Position (GWh)	333	697	1,205	1,549	1,893	2,165	2,446	2,565	2,743	2,808
Large Hydro/ACS Open Position (GWh)	2	278	956	1,266	1,027	792	555	569	573	580

Appendix B: MCE Enrollment Phases

Table 13: MCE enrollment phases

MCE Phase	Description	Number of Accounts at Enrollment Date	Implementation Date
Phase 1	MCE Member (municipal) accounts and 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	Aug 2011
Phase 2B	Remaining accounts within Marin County	79,000	Jul 2012
Phase 3	Residential, commercial, agricultural, and street lighting accounts within the City of Richmond	35,000	Jul 2013
Phase 4A	Residential, commercial, agricultural, and street lighting accounts within the unincorporated areas of Napa County	14,000	Feb 2015
Phase 4B	Residential, commercial, agricultural, and street lighting accounts within the cities of San Pablo, Benicia, and El Cerrito	30,000	May 2015
Phase 5	Residential, commercial, agricultural, and street lighting accounts within the Town of Yountville and the cities of American Canyon, Calistoga, Lafayette, Napa, St. Helena, and Walnut Creek	83,000	Sep 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	Apr 2018
Phase 7	Residential, commercial, agricultural, and street lighting accounts within unincorporated Solano County	11,000	Apr 2020
Phase 8	Residential, commercial, agricultural, and street lighting accounts within the cities of Pleasant Hill and Vallejo	64,000	Apr 2021
Phase 9	Residential, commercial, agricultural, and street lighting accounts within the City of Fairfield	44,000	Apr 2022

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 below, 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: $[(2021 \text{ sales} \times 35.8\%) + (2022 \text{ sales} \times 38.5\%) + (2023 \text{ sales} \times 41.3\%) + (2024 \text{ sales} \times 44\%)] / [2021 \text{ through } 2024 \text{ sales}]$.

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
2031	7	60.0
2032	7	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 are 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 4.

Table 15: RPS PCC restrictions for compliance period 4

Year	Compliance Period	RPS Requirement (% of Retail Sales)	PCC 1 Minimum (% of RPS)	PCC 3 Maximum (% of RPS)
2021	4	35.8	75	10
2022	4	38.5	75	10
2023	4	41.3	75	10
2024	4	44.0	75	10

Senate Bill 350

Pursuant to the Clean Energy Pollution Reduction Act, SB 350 (2015), and starting with Compliance Period 4 (began 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 Renewables Portfolio Standard, outlined in Senate Bill (SB) 100 (2018), is California's key program that advances renewable energy. SB 100 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 March 2021, California regulators (CEC, California Air Resources Board, and the CPUC) issued 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 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.

AB 1110 (2016), the Greenhouse Gases Emissions Intensity Reporting: Retail Electricity Suppliers, 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 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 system and flexible RA requirements are offset by CPE procurement and other CPUC-directed procurement made on behalf of LSEs by the incumbent utility through a Cost Allocation Mechanism (CAM).

In addition to MCE's monthly RA compliance under the RA program, which is procurement from existing resources and focused on near-term reliability needs, the CPUC administers a biannual IRP process to identify mid- and long-term procurement needs to ensure a sufficient amount of capacity is built and ultimately available to meet RA program needs.

To meet the above-mentioned needs, the CPUC has issued 2 unprecedented procurement orders since 2019. MCE is required to address short-term system reliability pursuant to CPUC Decision 19-11-016. This decision requires LSEs to procure "Incremental System Capacity," which is largely new RA capacity that is in addition to the resources on the CPUC's existing baseline list of resources. MCE's share of the short-term incremental System Capacity compliance obligation is 87.5 MW, 50% of which must have been online by August 1, 2021; 75% online by August 1, 2022; and 100% online by August 1, 2023.

Furthermore, pursuant to CPUC Decision 21-06-035, LSEs are required to procure additional incremental capacity to meet a mid-term reliability procurement order that seeks to address future gas and nuclear generator retirements. MCE's share of this obligation is 332 MW of NQC (this is in addition to the previous 87.5 MW mandated by Decision 19-11-016) of incremental system capacity by 2026. This procurement will include a mix of renewables, stand-alone storage, renewable hybrid configurations, long-duration storage, and renewable baseload resources. Of MCE's 332 MW requirement, 58 MW must be online by or before August 1, 2023; 173 MW must be online by or before June 1, 2024; an additional 43 MW must be online by or before June 1, 2025; and a final 58 MW by June 1, 2026. The latter 58 MW must be split equally between long-duration storage and baseload generation.

System RA: 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.²¹ 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 toward meeting an LSE's RA requirements.

Local RA: To achieve its Local RA requirements through 2022, 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

²¹ 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.

meet this number. 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 have been assigned to a CPE starting in 2023. As such, MCE's RA compliance filings going forward will only reflect MCE's procurement towards its System and Flexible RA requirements.

Flexible RA: 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. 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.

The CPUC recently adopted a "Slice-of-Day" framework²² that will require MCE to procure RA resources to meet its capacity needs in every hour. These hourly capacity requirements will be set on a monthly basis, based on the worst day of the month. The transition to the new RA framework will take place over the next couple of years, with a test year in 2024 and full implementation in 2025. This change will have a significant impact on how MCE does RA procurement and might lead to significant changes in the RA market as well.

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 has filed and must continue to 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.

²²Decision D2206050 - Decision Adopting Local Capacity Obligations 2023-2025, Flexible Capacity Obligations For 2023, And Reform Track Framework.

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 to meet the 2050 goal 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 a determined kWh/month), a customer pays a set \$/kWh price, whereas at 'Tier 2' usage (above a higher determined kWh/month) a customer pays a higher set \$/kWh price.

Key Acronyms

ACS – Asset Controlling Supplier | An ACS is a specific type of power supplier registered with CARB that owns or operates interconnected electricity generating facilities. ACS power can be reported using state-approved emissions factors.

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 the reduction of greenhouse gas emissions (GHG) within their jurisdiction. They document GHG 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 often. 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 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 program | CARE allows low-income energy customers to receive a 30–35% 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). Eligible CCA customers can continue to access the CARE discount with no changes.

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 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 those that provide natural gas and water, electric power, telecommunications, railway services, and for-hire passenger carriers. 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 (rooftop 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, thereby increasing local grid reliability while meeting the constraints of broader grid reliability needs.

DG – Distributed generation | DG refers to small, modular power sources located 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 | DGEMS is a PG&E proposal to implement new distributed energy resources in order to reduce impacts of Public Safety Power Shutoff (PSPS) events.

DR – Demand response | DR is a way of controlling customers’ electricity demand through either voluntary or obligatory programs via 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 real-time electricity supply.

DSM – Demand-side management | DSM is 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, efficient windows keep the heat out in summer so that air conditioners run less often and save electricity.

ESAP – Energy Savings Assistance Program | ESAP provides no-cost weatherization services to low-income households that 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 gasses in Earth’s atmosphere that prevent heat from escaping into space. The burning of fossil fuels, such as coal and oil, and deforestation have 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 generally used to refer to the integration and coordination of various energy technologies and services on the customer’s side of the utility meter. Energy efficiency, energy conservation, demand response, advanced metering, and distributed generation technologies are offered as elements of the IDSMD solution. Services may also include specialized rate structures or 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 four out of five 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. See MUD and POU below.

ITC – Investor Tax Credit | The ITC offers incentives for developers to create more solar resources to stimulate 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 a clean electricity supply instead of being flared.

LIHEAP – Low Income Home Energy Assistance Program | LIHEAP is a federally funded program that will pay a customer’s energy bill once per year if they’re facing shutoff and will provide home weatherization services. Preference for home weatherization is given to those with infants and toddlers under three 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 IOUs, 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 an 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.

OIR – Order Instituting Rulemaking | OIR is a 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 toward 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 (see next entry), 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, and 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’s service area.

POU – Publicly Owned Utility | POU (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). POU are not within the jurisdiction of the CPUC, and are thus subject to different regulation and enforcement than investor-owned utilities (IOUs), electricity service providers (ESPs), and CCAs. See MUD above.

PPA – Power purchase agreement | PPA is the method through which MCE procures wholesale electricity. These agreements are signed with electric generators in California and the Pacific Northwest to ensure that 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 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 jobs 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, RFQ, or RFI – Request For Proposals, Offers, Qualifications, 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, it goes to 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 based on a number of criteria. RFQs and RFIs are simply a request for information from the market and are not directly connected to 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. The legislature and the CPUC are exploring means to adopt 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’s services, they must receive a copy of the T&C within an allocated time period after the 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

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 MCE’s service area, emissions information, financial information, and program information.

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



My community.
My choice.

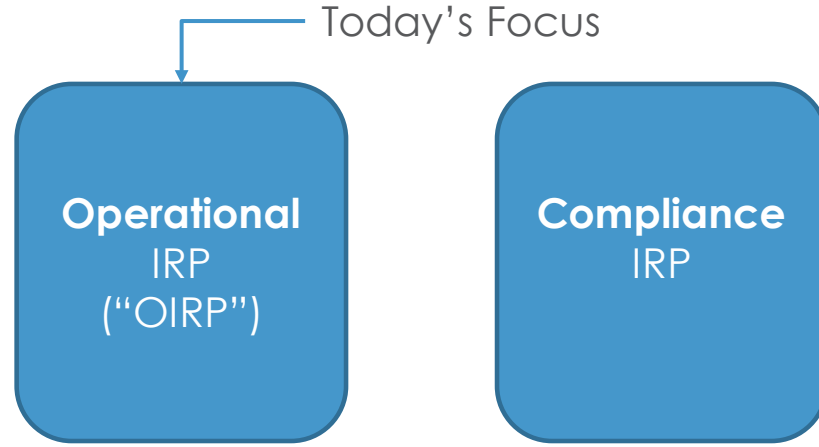
MCE 2023-2032 Operational IRP

MCE Technical Committee - November 3, 2021

MCE Integrated Resource Planning (IRP)

In even years (including this year, 2022), MCE produces two IRPs concurrently:

- Operational IRP
- Compliance IRP



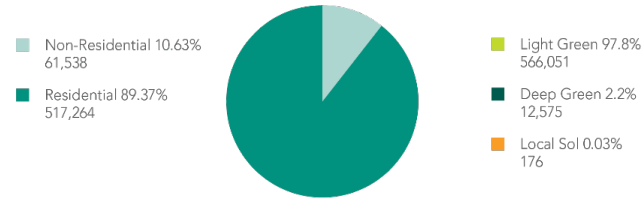
- Produced every year
- 10-year planning horizon
- MCE template
- Submitted to MCE Technical Committee for Approval

- Produced in even years
- Planning through 2035
- CPUC templates
- Submitted to CPUC for certification

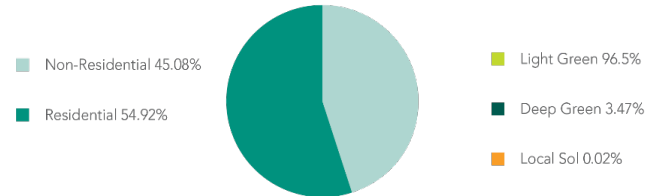
MCE Customers

MCE Currently Has 580,000 Customers

MCE Customers at a Glance - Accounts
As of July 1, 2022



MCE Customers at a Glance - Load
As of July 1, 2022



Customers by Account

- Mostly residential and Light Green

Customers by Load

- Slightly more residential and higher Deep Green percentage

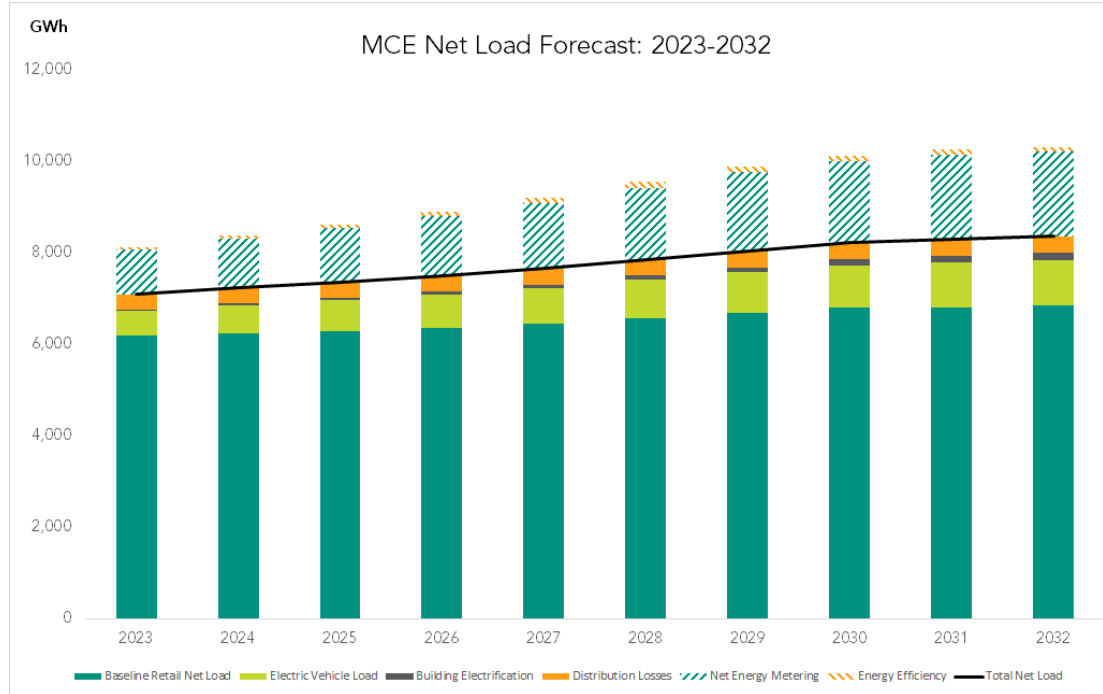
MCE Programs and Community Initiatives

MCE's programs highlight the agency's commitment to energy independence and community benefits.

MCE Programs and Community Initiatives

- Distributed Energy Resources
- Demand Response and Flexibility
- Behind-the-Meter Energy Storage and Resilience
- Transportation Electrification
- Energy Efficiency
- Net Energy Metering and Rooftop Solar Rebates
- Energy Equity
- Workforce and Supplier Diversity

MCE Load Forecast: 2023-2032



MCE's long-term load forecast is a 10-year projection of the energy that its customers will consume annually.

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, net energy metering and electric vehicle load

Power Supply Definitions

Renewable Energy: Renewables Portfolio Standard (RPS)-eligible energy per the CEC RPS Eligibility Guidebook rules

- Example Technologies: Biomass, Biomethane, Fuel Cells, Geothermal, Small Hydro, Municipal Solid Waste, Solar PV/Thermal, Wind

GHG-Free Energy: Non-RPS energy that does not contain GHG emissions

- Example Technologies: Large Hydro, Nuclear, and potentially GHG-free thermal generators (e.g. Green Hydrogen)

Clean Energy: Asset Controlling Supply (ACS) energy registered with CARB and may contain trace GHG emissions

MCE Procurement Targets

Retail Load: Light Green

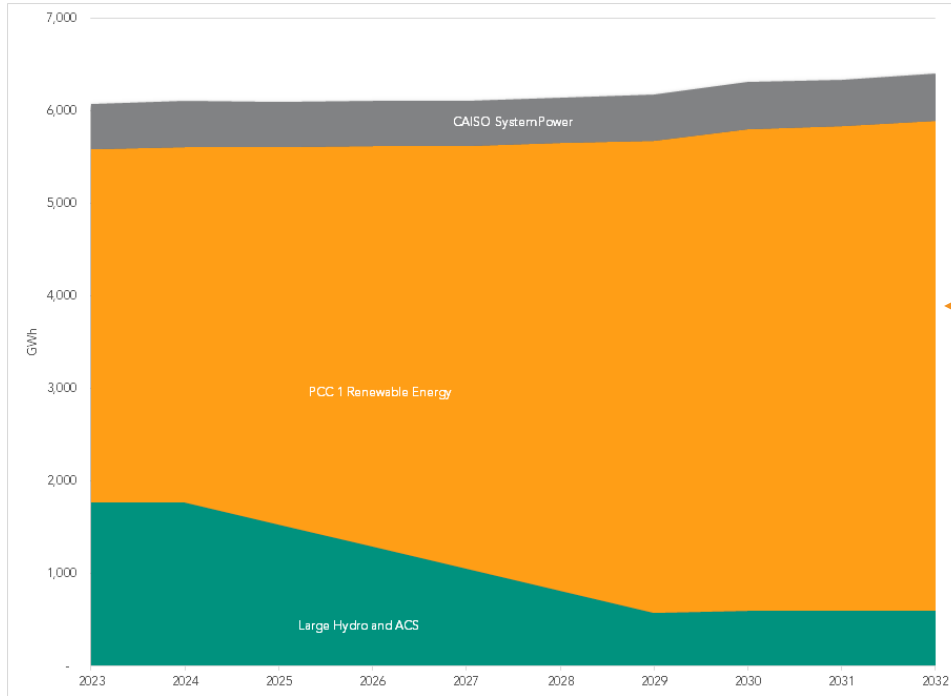
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
PCC 1 Renewable	60%	60%	65%	70%	75%	80%	85%	85%	85%	85%
PCC 2 Renewable	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Large Hydro + ACS	37%	37%	32%	27%	22%	17%	12%	12%	12%	12%
Total Renewable	60%	60%	65%	70%	75%	80%	85%	85%	85%	85%
Total Renewable + Large Hydro + ACS	97%	97%	97%	97%	97%	97%	97%	97%	97%	97%
GHG-Free Equivalent*	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%

- MCE's 2021 OIRP portfolio target was 95% by 2022, but this changed to 95% by 2023 in the 2022 OIRP due to ongoing drought conditions across Western North America and lower than expected hydroelectric production.

*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.

MCE Procurement Targets

Loss-Adjusted Load: Light Green + Deep Green + Local Sol



By 2029, MCE projects that the vast majority of its PCC 1 renewables will be sourced through long-term Power Purchase Agreements for solar, wind, geothermal, and renewables + storage

MCE Procurement Targets

Energy Storage

634 MW Storage Target

366 MW Storage for CPUC Incremental Capacity Need*

29 MW of Long-Duration
(8 hour+) Storage

100 MW of Solar PV
+ 60 MW x 4-hour Storage

185 MW of Standalone
Storage

100 MW of Solar PV
+ 92 MW x 4-hour Storage

268 MW Storage for Future MCE Needs

Future Storage Needs
TBD

Thank You

Bill Pascoe: bpascoe@mcecleanenergy.org

Jenna Tenney: jtenney@mcecleanenergy.org

