

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

# Technical Committee Meeting Thursday, November 4, 2021 8:30 A.M.

This Meeting will be conducted via teleconference pursuant to the requirements of <u>Assembly Bill No. 361</u>. 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/87529253504?pwd=ZFdXRmIvbVVmVjBIVFJIeDBsT202Zz09

Dial: 1-669-900-9128 Meeting ID: 875 2925 3504 Meeting Password: 096067

# Agenda Page 1 of 2

- 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 9.2.21 Meeting Minutes
  - C.2 Approval of the Master Power Purchase and Sale Agreement Confirmation Letters Between Calpine Energy Services, L.P. and

Marin Clean Energy for Generic and Flexible Resource Adequacy

- 6. MCE 2022 Operational Integrated Resource Plan (Discussion/Action)
- 7. Responsible Biomass Electricity Development Principles (Discussion/Action)
- 8. Richmond Green Hydrogen One (Discussion)
- 9. Committee Matters & Staff Matters (Discussion)
- 10. Adjourn

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.

# DRAFT

# MCE TECHNICAL COMMITTEE MEETING MINUTES Thursday, September 2, 2021 8:30 A.M.

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

- Present: Kevin Haroff, City of Larkspur Janelle Kellman, City of Sausalito Katy Miessner, City of Vallejo Devin Murphy, City of Pinole Teresa Onoda, Town of Moraga Scott Perkins, City of San Ramon Katie Rice, County of Marin
- Absent: Gina Dawson, City of Lafayette John Gioia, County of Contra Costa Ford Greene, Town of San Anselmo, Committee Chair

# Staff

& Others: Jesica Brooks, Assistant Board Clerk Kirby Dusel, PEA Consultant Vicken Kasarjian, Chief Operating Officer Sol Phua, Administrative Services Assistant Elyse Thomas, Administrative Services Assistant Dawn Weisz, Chief Executive Officer

# 1. <u>Roll Call</u>

Acting Chair Murphy called the regular Technical Committee meeting to order at 8:32 a.m. with quorum established by roll call.

- 2. <u>Board Announcements (Discussion)</u> There were no announcements.
- 3. <u>Public Open Time (Discussion)</u> There were no speakers.
- 4. <u>Report from Chief Executive Officer (Discussion)</u> CEO, Dawn Weisz, reported the following:

# DRAFT

- Both the Calistoga and American Canyon City Councils voted unanimously to opt-up their city accounts to Deep Green. This makes Napa the second county to have all of its member communities opt-up!
- The August MCE PowerHour was held last Thursday, the 26th with a focus on how the Bay Area's water and energy resources are impacted by this year's drought conditions.
- MCE released the final Evaluation, Measurement and Verification (EM&V) report from the first 3 years of the LIFT program and hosted a webinar to present the following findings.
  - Residents of the participating properties will save over \$192 each year on their electric bill.
  - Over 200 customers have participated in MCE's Home Energy Savings Program this year. Finding also show that 90% of moderate-income audited homes need significant weatherization upgrades (insulation, duct sealing etc.) that our program is able to do free of charge.
- MCE's biomass bill has been progressing through the legislature and may be up for final vote as early as next week.
- MCE's responsible biomass procurement principles were presented to the Community Power Coalition last week for discussion and feedback. This will help direct our efforts to engage local biomass facilities interested in producing SB 1383 compliant renewable energy.
- Staff is pitching the MCE Healthy Homes program to Wells Fargo in an attempt to secure longer-term funds that will allow us to expand from Marin to the other three counties.
- MCE's Board Retreat is currently scheduled for Thursday, October 7, 2021 from 9am-3pm.

# 5. Consent Calendar (Discussion/Action)

- C.1 Approval of 5.6.21 Meeting Minutes
- C.2 Salesforce Subscription Agreements
- C.3 Master Services Agreement with CLEAResult Consulting, Inc.

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

Action: It was M/S/C (Haroff/Perkins) to **approve Consent Calendar items C.1 – C.3.** Motion carried by unanimous roll call vote. (Absent: Directors Dawson, Gioia, and Greene).

6. <u>2020 Power Statistics Update and Requisite Attestation Related to California's</u> <u>Power Source Disclosure Program (Discussion/Action)</u>

# DRAFT

Kirby Dusel, PEA Consultant, presented this item and addressed questions from Committee members.

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

Action: It was M/S/C (Perkins/Haroff) to endorse the accuracy of information presented in MCE's 2020 PSD reports for Light Green, Deep Green and Local Sol service as well as related PCLs for such products. Motion carried by unanimous roll call vote. (Absent: Directors Dawson, Gioia, Greene, and Kellman).

# 7. <u>Committee & Staff Matters (Discussion)</u> There were none.

# 8. <u>Adjournment</u>

Acting Chair Murphy adjourned the meeting at 10:07 a.m. to the next scheduled Technical Committee Meeting on October 7, 2021.

Devin Murphy, Acting Chair

Attest:

Dawn Weisz, Secretary



November 4, 2021

TO:	MCE Technical Committee
FROM:	Brian Goldstein, Pacific Energy Advisors
RE:	Approval of the Master Power Purchase and Sale Agreement Confirmation Letters Between Calpine Energy Services, L.P. and Marin Clean Energy for Generic and Flexible Resource Adequacy (Agenda Item #05 C.2)
ATTACHMENTS:	A: Master Power Purchase and Sale Agreement Confirmation Letter Between Calpine Energy Services, L.P. and Marin Clean Energy for Generic Resource Adequacy
	B: Master Power Purchase and Sale Agreement Confirmation Letter Between Calpine Energy Services, L.P. and Marin Clean Energy for Flexible Resource Adequacy

Dear Technical Committee Members:

Attached for the Technical Committee's consideration and approval are two, 9-year confirmation agreements with Calpine Energy Services for generic and flexible resource adequacy. These resource adequacy transactions will serve as a hedge for MCE's compliance obligations out through 2030. More specifically, these transactions provide MCE and its customers with a level of price certainty for some of its future resource adequacy requirements. Additionally, the assets MCE is contracting for through this transaction are baseload resources that will be available 24/7, which is expected to provide the most compliance value in future years.

# SUMMARY:

As a California load-serving entity and Community Choice Aggregation program, MCE engages in monthly and annual resource adequacy procurement (115% of MCE's monthly peak demand) in order to fulfill compliance obligations with the CAISO and CPUC to ensure grid reliability. These requirements are intended to secure sufficient commitments from actual, physical generating resources to ensure electrical system reliability during the peak demand months of the summer. Since launching in 2010,

MCE has complied with all of its resource adequacy obligations, and in order to do so, MCE has entered into many short-, mid-, and long-term resource adequacy transactions. The varying length of MCE's resource adequacy contracts helps to minimize MCE's exposure to short-term price increases as well as possible future downturns in prices.

Over the last five years, the California resource mix has changed dramatically with the retirement of baseload generating resources such as natural gas generators and the addition of thousands of megawatts of new solar generation. The quick transition to clean energy resources, combined with significant changes to the CPUC's Resource Adequacy Program, has created a constrained resource adequacy market, which has increased resource adequacy prices by four-fold over the last five years. Additionally, there have been more reoccurring instances of load-serving entities unable to meet resource adequacy compliance obligations and in turn incurring CAISO and CPUC fines and penalties. Due to the constraints of the current resource adequacy market, combined with high short-term prices, MCE continues to pursue opportunities to minimize its exposure to resource adequacy price volatility.

# Fiscal Impact:

Costs in FY 2021/22 associated with the Agreements for Generic RA and Flexible RA are \$0. The cost of both Agreements starting in FY 2022/23 would be incorporated into FY 2022/23 and future year budgets and would have a combined cost of approximately \$3,944,444 per year.

# **Recommendation:**

Approve the following Agreements:

- 1. Master Power Purchase and Sale Agreement Confirmation Letter Between Calpine Energy Services, L.P. and Marin Clean Energy for Generic Resource Adequacy
- 2. Master Power Purchase and Sale Agreement Confirmation Letter Between Calpine Energy Services, L.P. and Marin Clean Energy for Flexible Resource Adequacy

#### MASTER POWER PURCHASE AND SALE AGREEMENT CONFIRMATION LETTER BETWEEN CALPINE ENERGY SERVICES, L.P. AND MARIN CLEAN ENERGY

This confirmation letter ("Confirmation") confirms the Transaction between **Calpine Energy Services, L.P.**, a Delaware limited partnership ("Seller"), and **Marin Clean Energy**, a California joint powers authority ("Buyer"), each individually a "Party" and together the "Parties", dated as of October 14, 2021 (the "Confirmation Effective Date"), in which Seller agrees to provide to Buyer the right to the Product, as such term is defined in Article 3 of this Confirmation. This Transaction is governed by the Edison Electric Institute Master Power Purchase and Sale Agreement between the Parties, and that certain Cover Sheet, effective as of July 11, 2013, along with any annexes and amendments thereto (collectively, the "Master Agreement"). The Master Agreement and this Confirmation shall be collectively referred to herein as the "Agreement". Capitalized terms used but not otherwise defined in this Confirmation have the meanings ascribed to them in the Master Agreement or the Tariff (as defined herein).

#### 1. DEFINITIONS

- **1.1** "Alternate Capacity" means any replacement Product which Seller has elected to provide to Buyer in accordance with the terms of Section 4.5.
- **1.2** "Annual Supply Plan" has the meaning set forth in the Tariff.
- **1.3** "Applicable Laws" means any law, rule, regulation, order, decision, judgment, or other legal or regulatory determination by any Governmental Body having jurisdiction over one or both Parties or this Transaction, including without limitation, the Tariff.
- **1.4** "Availability Incentive Payments" has the meaning set forth in the Tariff.
- **1.5** "Availability Standards" shall mean Availability Standards as defined in Section 40.9 of the Tariff or otherwise applicable to CAISO.
- **1.6** "Buyer" has the meaning specified in the introductory paragraph hereof.
- **1.7** "CAISO" means the California Independent System Operator or its successor.
- **1.8** "Capacity Replacement Price" means (a) the price actually paid for any Replacement Capacity purchased by Buyer pursuant to Section 4.7 hereof, plus costs reasonably incurred by Buyer in purchasing such Replacement Capacity, or (b) absent a purchase of any Replacement Capacity, the market price for such Designated RA Capacity not provided at the Delivery Point. The Buyer shall determine such market prices in a commercially reasonable manner. For purposes of the definition of Section 1.51 of the Master Agreement, "Capacity Replacement Price" shall be deemed to be the "Replacement Price."
- **1.9** "CIRA Tool" means the CAISO Customer Interface for Resource Adequacy application, or its successor platform.
- **1.10** "Compliance Showings" means the Flexible RAR Showings, LAR Showings, and RAR Showings, as applicable to the Product.
- **1.11** "Confirmation" has the meaning specified in the introductory paragraph hereof.

- **1.12** "Confirmation Effective Date" has the meaning specified in the introductory paragraph hereof.
- **1.13** "Contingent Firm RA Product" has the meaning specified in Section 3.4 hereof.
- **1.14** "Contract Price" means, for any Monthly Delivery Period, the price specified under the RA Capacity Price Table in Section 4.9.
- **1.15** "Contract Quantity" means, with respect to any particular Showing Month of the Delivery Period, the amount of Product (in MWs) set forth in the "Contract Quantity (MWs)" table in Section 4.3 which Seller has agreed to provide to Buyer from the Unit for such Showing Month.
- **1.16** "Control Area" has the meaning set forth in the Tariff.
- 1.17 "CPUC Decisions" means CPUC Decisions 04-01-050, 04-10-035, 05-10-042, 06-06-064, 06-07-031, 07-06-029, 08-06-031, 09-06-028, 10-06-036, 11-06-022, 12-06-025, 13-06-024, 14-06-050, 15-06-063, 16-06-045, 17-06-027, 19-02-022, 19-06-026, D.19-10-021, D.20-06-002, D.20-06-028, 20-06-031, and 20-12-006 and subsequent decisions related to resource adequacy issued from time to time by the CPUC.
- **1.18** "CPUC Filing Guide" means the annual document issued by the CPUC which sets forth the guidelines, requirements and instructions for LSE's to demonstrate compliance with the CPUC's resource adequacy program.
- **1.19** "Delivery Period" has the meaning specified in Section 4.1 hereof.
- **1.20** "Delivery Point" has the meaning specified in Section 4.2 hereof.
- **1.21** "Designated RA Capacity" shall be equal to, with respect to any particular Showing Month of the Delivery Period, the Contract Quantity of Product for such Showing Month including the amount of Contract Quantity that Seller has elected to provide Alternate Capacity with respect to, minus any reductions to Contract Quantity specified in Section 4.4 with respect to which Seller has not elected to provide Alternate Capacity.
- **1.22** "Effective Flexible Capacity" means the flexible capacity of a resource that can be counted towards an LSE's FCR obligation, as identified from time to time by the Tariff, the CPUC Decisions, LRA, or other Governmental Body having jurisdiction.
- **1.23** "FCR Attributes" means, with respect to a Unit, any and all FCR attributes that can be counted toward an LSE's FCR, as they are identified from time to time by the CPUC Decisions, the Tariff, an LRA, or other Governmental Body having jurisdiction that can be counted toward FCR and are consistent with the operational limitations and physical characteristics of such Unit. For clarity, it should be understood that if the CAISO, LRA, or other Governmental Body, defines new or redefines the FCR Attributes of a Unit, then such change will not result in a change in obligations or payments made pursuant to this Transaction.
- **1.24** "FCR Showings" means the FCR compliance showings (or similar or successor showings) an LSE is required to make to the CPUC (and, to the extent authorized by the CPUC, to the CAISO) pursuant to the CPUC Decisions and the Tariff, or to an LRA having jurisdiction over the LSE.
- **1.25** "Firm RA Product" has the meaning specified in the Section 3.3 hereof.
- **1.26** "Flexible Capacity Category" shall be as described in the annual CPUC Filing Guide, as such may be modified, amended, supplemented or updated from time to time.

- **1.27** "Flexible Capacity Requirements" or "FCR" means the flexible capacity requirements established for LSEs by the CPUC pursuant to the CPUC Decisions, or by an LRA or other Governmental Body having jurisdiction.
- **1.28** "Flexible RA Product" has the meaning specified in the Section 3.2 hereof.
- **1.29** "GADS" means the Generating Availability Data System or its successor.
- **1.30** "Generic RA Product" means Designated RA Capacity consisting of RAR Attributes and, if applicable, LAR Attributes, which does not include FCR Attributes.
- **1.31** "Governmental Body" means (i) any federal, state, local, municipal or other government; (ii) any governmental, regulatory or administrative agency, commission or other authority lawfully exercising or entitled to exercise any administrative, executive, judicial, legislative, police, regulatory or taxing authority or power; and (iii) any court or governmental tribunal.
- **1.32** "LAR" means local area reliability, which is any program of localized resource adequacy requirements established for jurisdictional LSEs by the CPUC pursuant to the CPUC Decisions, or by another LRA having jurisdiction over the LSE, as implemented in the Tariff. LAR may also be known as local resource adequacy, local RAR, or local capacity requirement in other regulatory proceedings or legislative actions.
- **1.33** "LAR Attributes" means, with respect to a Unit, any and all resource adequacy attributes (or other locational attributes related to system reliability), as they are identified as of the Confirmation Effective Date by the CPUC Decisions, CAISO, LRA, or other Governmental Body having jurisdiction, associated with the physical location or point of electrical interconnection of the Unit within the CAISO Control Area, that can be counted toward LAR and are consistent with the operational limitations and physical characteristics of such Unit, but exclusive of any RAR Attributes which are not associated with where in the CAISO Control Area the Unit is physically located or electrically interconnected. For clarity, it should be understood that if the CAISO, LRA, or other Governmental Body, defines new or re-defines existing local areas, then such change will not result in a change in obligations or payments made pursuant to this Transaction.
- **1.34** "LAR Showings" means the LAR compliance showings (or similar or successor showings) an LSE is required to make to the CPUC (and, to the extent authorized by the CPUC, to the CAISO) pursuant to the CPUC Decisions, or to an LRA having jurisdiction over the LSE.
- **1.35** "LRA" has the meaning set forth in the Tariff.
- **1.36** "LSE" means load-serving entity. LSEs may be an investor-owned utility, an electric service provider, a community aggregator or community choice aggregator, or a municipality serving load in the CAISO Control Area (excluding exports).
- **1.37** "Master Agreement" has the meaning specified in the introductory paragraph hereof.
- **1.38** "Maximum Cumulative Capacity" or "MCC" shall have the meaning specified in Section 2.1 hereof.
- **1.39** "Monthly Delivery Period" means each calendar month during the Delivery Period and shall correspond to each Showing Month.
- **1.40** "Monthly RA Capacity Payment" has the meaning specified in Section 4.9 hereof.
- **1.41** "Monthly Supply Plan" has the meaning set forth in the Tariff.
- **1.42** "NERC" means the North American Electric Reliability Council, or its successor.

- **1.43** "NERC/GADS Protocols" means the GADS protocols established by NERC, as may be updated from time to time.
- **1.44** "Net Qualifying Capacity" has the meaning set forth in the Tariff.
- **1.45** "Non-Availability Charges" has the meaning set forth in the Tariff.
- 1.46 "Notification Deadline" means in respect of a Showing Month the day that is fifteen (15) Business Days before the Compliance Showing deadlines. For illustrative purposes only, as of the Confirmation Effective Date, the applicable Compliance Showing deadlines are as follows: (A) forty-five (45) days prior to the Showing Month covered by the Supply Plan for the Monthly Supply Plan; and (B) the last Business Day of October that is prior to commencement of the year for the Annual Supply Plan. The Parties acknowledge and agree that such dates may be modified by the CAISO from time to time throughout the Delivery Period
- **1.47** "Outage" means disconnection, separation, or reduction in the capacity of any Unit that relieves all or part of the offer obligations of the Unit consistent with the Tariff. For the avoidance of doubt, Outage shall be deemed to include Planned Outage (defined below).
- **1.48** "Planned Outage" means, subject to and as further described in the CPUC Decisions and the Tariff (Planned Outage referred to as "Approved Maintenance Outage" under the Tariff), a CAISO-approved planned or scheduled disconnection, separation or reduction in capacity of the Unit that is conducted for the purposes of carrying out routine repair or maintenance of such Unit, or for the purposes of new construction work for such Unit.
- **1.49** "Product" has the meaning specified in Article 3 hereof.
- **1.50** "RA Capacity" means the qualifying and deliverable capacity of the Unit for RAR, LAR, and FCR purposes for the Delivery Period, as determined by the CAISO, or other Governmental Body authorized to make such determination under Applicable Laws. RA Capacity encompasses the RAR Attributes, LAR Attributes and FCR Attributes of the capacity provided by a Unit, as applicable pursuant to this Confirmation.
- **1.51** "RA Capacity Price" means the price specified in the RA Capacity Price Table in Section 4.9 hereof.
- **1.52** "RAR" or "Resource Adequacy Requirements" means the resource adequacy requirements, exclusive of LAR and FCR, established for LSEs by the CPUC pursuant to the CPUC Decisions, by the CAISO under the Tariff, or by an LRA or other Governmental Body having jurisdiction.
- **1.53** "RAR Attributes" means, with respect to a Unit, any and all resource adequacy attributes, as they are identified as of the Confirmation Effective Date by the Tariff, the CPUC Decisions, LRA, or any Governmental Body having jurisdiction, that can be counted toward RAR and are consistent with the operational limitations and physical characteristics of such Unit, exclusive of any LAR Attributes or FCR Attributes.
- **1.54** "RAR Showings" means the RAR compliance showings (or similar or successor showings) an LSE is required to make to the CPUC (and/or, to the extent authorized by the CPUC, to the CAISO), pursuant to the Tariff, the CPUC Decisions or LRA having jurisdiction.
- **1.55** "Replacement Capacity" has the meaning specified in Section 4.7 hereof.
- **1.56** "Replacement Unit" means a generating unit having the same capacity attributes as a Shown Unit, including the requirements set forth in Articles 3 and 4, and the Resource Category requirements set forth in Section 2.1(c), and meeting the requirements specified in Section 4.5.

- **1.57** "Resource Adequacy Plan" has the meaning set forth in the Tariff.
- **1.58** "Resource Category" shall be as described in the CPUC Filing Guide, as such may be modified, amended, supplemented or updated from time to time.
- **1.59** "Scheduling Coordinator" or "SC" has the same meaning as in the Tariff.
- **1.60** "Seller" has the meaning specified in the introductory paragraph hereof.
- **1.61** "Showing Month" is the calendar month during the Delivery Period that is the subject of the Compliance Showing. For illustrative purposes only, pursuant to the CPUC Decisions in effect as of the Confirmation Effective Date, the monthly Compliance Showing made in June is for the Showing Month of August.
- **1.62** "Shown Unit" means a generating unit that meets Product characteristics and Contract Quantity specified in Articles 3 and 4 and the Resource Category requirements set forth in Section 2.1(c) from which RA Capacity will be provided by Seller to Buyer and that Seller identifies annually pursuant to Article 2.
- **1.63** "Subsequent Buyer" means the purchaser of Product from Buyer in a re-sale of Product by Buyer.
- **1.64** "Substitute Capacity" has the meaning set forth in the Tariff for "RA Substitute Capacity."
- **1.65** "Supply Plan" has the meaning set forth in the Tariff.
- **1.66** "Tariff" means the tariff and protocol provisions of the CAISO, including associated rules, procedures and business practice manuals, as amended or supplemented from time to time.
- **1.67** "Transaction" has the meaning specified in the introductory paragraph hereof.
- **1.68** "Unit" or "Units" shall mean the Shown Unit described in Article 2 hereof (and any Replacement Units), from which RA Capacity is provided by Seller to Buyer.
- 1.69 "Unit EFC" means the Effective Flexible Capacity set by the CAISO for the applicable Unit. If the CAISO adjusts the Effective Flexible Capacity of a Unit after the Confirmation Effective Date, then for the period in which the adjustment is effective, the Unit EFC shall be deemed the lesser of (i) the Unit EFC as of the Confirmation Effective Date, and (ii) the CAISO-adjusted Effective Flexible Capacity. To the extent the Confirmation Effective Date of this Confirmation occurs prior to the CAISO's setting of a Unit EFC for the applicable Unit, the Unit EFC shall be as agreed to by the Parties and specified in Article 2, and Seller represents that, to the best of its knowledge, this Unit EFC is consistent with the CAISO's methodology for determining Unit EFC as of the Confirmation Effective Date. To the extent the CAISO creates new categories of flexible capacity during the term of this Transaction and a Unit can count toward such new categories of flexible capacity while operating consistent with the operational limitation and physical characteristics of such Unit, any and all such new categories of flexible capacity shall be deemed to be part of the Effective Flexible Capacity of that Unit. The above notwithstanding, to the extent the CAISO decides to reduce the applicable Unit EFC. Seller shall not be liable for any costs or damages related to such reduction and the Unit EFC shall be reduced per Section 4.4 of this Confirmation.
- **1.70** "Unit NQC" means the Net Qualifying Capacity set by the CAISO for the applicable Unit. If the CAISO adjusts the Net Qualifying Capacity of a Unit after the Confirmation Effective Date, then for the period in which the adjustment is effective, the Unit NQC shall be deemed the lesser of (i) the Unit NQC as of the Confirmation Effective Date, and (ii) the CAISO-adjusted Net Qualifying Capacity.

#### 2. UNIT DESIGNATION

## 2.1 Seller to Annually Designate Shown Unit

(a) On an annual basis during the term of this Transaction, Seller shall designate the Shown Unit(s) from which RA Capacity will be provided to Buyer for the following calendar year by providing Buyer with the specific Unit information contained in Appendix A by no later than the earlier of (i) October 1, or (ii) thirty (30) calendar days before the deadline for the yearahead Compliance Showing.



3. RESOURCE ADEQUACY CAPACITY PRODUCT

During the Delivery Period, Seller shall provide to Buyer, pursuant to the terms of this Confirmation, the Designated RA Capacity in the amount of the Contract Quantity of (i) RAR Attributes and, if applicable, LAR Attributes, and (ii) FCR Attributes, if Flexible RA Product is specified in Section 3.2, and the Contract Quantity shall be either a Firm RA Product or a Contingent Firm RA Product, as specified in either Section 3.3 or 3.4 (the "Product"). The Product does not confer to Buyer any right to the electrical output from the Units, other than the right to include the Designated RA Capacity associated with the Contract Quantity in RAR Showings, LAR Showings, and FCR Showings, as applicable, and any other capacity or resource adequacy markets or proceedings as specified in this Confirmation. Specifically, no energy or ancillary services associated with any Unit is required to be made available to Buyer as part of this Transaction and Buyer shall not be responsible for compensating Seller for Seller's commitments to the CAISO required by this Confirmation. Seller retains the right to sell pursuant to the Tariff any RA Capacity from a Unit that is in excess of that Unit's Contract Quantity and any RAR Attributes, LAR Attributes or FCR Attributes not otherwise transferred, conveyed, or sold to Buyer under this Confirmation.

## 3.1 RAR and LAR Attributes

Seller shall provide Buyer with the Designated RA Capacity of RAR Attributes and, if applicable, LAR Attributes from each Unit, as measured in MWs, in accordance with the terms and conditions of this Agreement.

## 3.2 **Flexible RA Product**

Seller shall provide Buyer with Designated RA Capacity of FCR Attributes from the Units in the amount of the applicable Contract Quantity.

## 3.3 **Firm RA Product**

Seller shall provide Buyer with Designated RA Capacity from the Units in the amount of the Contract Quantity. If the Units are not available to provide the full amount of the Contract Quantity for any reason other than Force Majeure, including without limitation any Outage or any adjustment of the RA Capacity of any Unit, pursuant to Section 4.4, then, Seller shall provide Buyer with Designated RA Capacity from one or more Replacement Units pursuant to Section 4.5 hereof. If Seller fails to provide Buyer with replacement Designated RA Capacity from Replacement Units pursuant to Section 4.5, then Seller shall be liable for damages and/or required to indemnify Buyer for penalties or fines pursuant to the terms of Sections 4.7 and 4.8 hereof.

### 3.4 **Contingent Firm RA Product**

Seller shall provide Buyer with Product from the Unit in the amount of the applicable Contract Quantity; provided, however, that if, and to the extent that the Shown Unit is not available to provide the full amount of the Contract Quantity due to any reduction in Contract Quantity in accordance with Section 4.4, Seller shall have the option to notify Buyer that either (a) Seller will not provide the portion of the Contract Quantity attributable to such reduction during the period of such non-availability; or (b) Seller will supply Alternate Capacity to fulfill the remainder of the Contract Quantity during such period pursuant to Section 4.5. If Seller fails to provide Buyer with the Designated RA Capacity from the Unit and has failed to supply Alternate Capacity to fulfill the remainder of the Designated RA Capacity during such period, Seller shall be liable for damages and/or required to indemnify Buyer for penalties or fines pursuant to the terms of Section 4.7 and 4.8.

#### 4. DELIVERY AND PAYMENT

#### 4.1 <u>Delivery Period</u>

The Delivery Period shall be July 1, 2022 through September 30, 2022, inclusive, and then January 1, 2023 through December 31, 2030, inclusive.

#### 4.2 <u>Delivery Point</u>

The Delivery Point for each Unit shall be the CAISO Control Area, and if applicable, the LAR region in which the Unit is electrically interconnected.

## 4.3 <u>Contract Quantity</u>

The Contract Quantity of each Unit for each Monthly Delivery Period shall be:

# Contract Year/MonthContract Quantity (MWs)July 2022 – September 2022Image: Contract Quantity (MWs)October 2022 – December 2022Image: Contract Quantity (MWs)January 2023 – December 2023Image: Contract Quantity (MWs)January 2024 – December 2030Image: Contract Quantity (MWs)

# **Contract Quantity (MWs)**

## 4.4 Adjustments to Contract Quantity

- (a) <u>Planned Outages</u>: If Seller is providing Contingent Firm RA Product and is unable to provide the applicable Contract Quantity for a portion of a Showing Month due to a Planned Outage of the Unit, then Seller shall have the option, but not the obligation, upon written notice to Buyer by the Notification Deadline, to either (i) reduce the Contract Quantity in accordance with the Planned Outage for such portion of the Showing Month, provided such reduction is able to be reflected on the Supply Plans in accordance with the Tariff; or (ii) provide Alternate Capacity in accordance with Section 4.5 up to the Contract Quantity for the applicable portion of such Showing Month.
- (b) <u>Reductions in Unit NQC</u>: If Product is both (i) Generic RA Product, and (ii) Contingent Firm RA Product specified under Section 3.4, then Seller's obligation to deliver the applicable Contract Quantity for any Showing Month may also be reduced if the Shown Unit experiences a reduction in Unit NQC after the Confirmation Effective Date as determined by the CAISO. Seller's potential reduction in Contract Quantity for each remaining Showing Month shall equal the product of (a) the applicable Showing Month Contract Quantity and (b) the total amount (in MW) Unit NQC was reduced since Confirmation Effective Date, divided by (c) Unit NQC as of the Confirmation Effective Date. If the Shown Unit experiences such a reduction in Unit NQC, then Seller has the option, but not the obligation, to provide the applicable Contract Quantity for such Showing Month from (i) the same Unit, provided the Unit has sufficient remaining and available Product and/or (ii) from Replacement Units, provided, that in each case Seller provides and identifies such Replacement Units in accordance with Section 4.5.
- (c) <u>Reductions in Unit EFC</u>: If Product is both (i) Flexible RA Product specified under Section 3.2, and (ii) Contingent Firm RA Product specified under Section 3.4, then Seller's obligation to deliver the applicable Contract Quantity of Product for any Showing Month may also be reduced if the Shown Unit experiences a reduction in Unit EFC as determined by the CAISO. Seller's potential reduction in Contract Quantity for each remaining Showing Month shall equal the product of (a) the applicable Showing Month Contract Quantity and (b) the total amount (in MW) Unit EFC was reduced since Confirmation Effective Date, divided by (c) Unit EFC as of the Confirmation Effective Date. If the Shown Unit experiences such a reduction in Unit EFC, then Seller has the option, but not the obligation, to provide the applicable Contract Quantity for such Showing Month from (i) the same Unit, provided the Unit has sufficient remaining and available Product and/or (ii) from Replacement Units, provided, that in each case Seller provides and identifies such Replacement Units in accordance with Section 4.5.



#### 4.5 <u>Alternate Capacity and Replacement Units</u>

- (a) If Seller is unable to provide the full Contract Quantity for any Showing Month for any reason, including, without limitation, due to one of the reasons specified in Section 4.4, or Seller desires to provide the Contract Quantity for any Showing Month from a different generating unit other than the Shown Unit, then Seller may, at no cost to Buyer, provide Buyer with Alternate Capacity from one or more Replacement Units, with the total amount of Product provided to Buyer from the Shown Unit and Replacement Units up to an amount equal to the Contract Quantity for the applicable Showing Month; provided that in each case, Seller shall notify Buyer of its intent (i) not to provide or (ii) to provide Alternate Capacity and identify Replacement Units meeting the above requirements and the Resource Category requirements set forth in Section 2.1(c), no later than the Notification Deadline. If Seller notifies Buyer in writing as to the particular Replacement Units shall be automatically deemed a Unit for purposes of this Confirmation for that Showing Month.
- (b) With respect to a Contingent Firm RA Product, if Seller does not provide Alternate Capacity in an amount equal to the Contract Quantity for that Showing Month, then Buyer may, but shall not be required to, purchase replacement Product. Seller shall not be liable for damages and/or required to indemnify Buyer for penalties or fines pursuant to the terms of Sections 4.7 and 4.8 hereof if (i) the failure to deliver the full Contract Quantity is due to a reduction in Contract Quantity in accordance with Section 4.4 and (ii) Seller has notified Buyer, no later than the Notification Deadline, of Seller's intent not to provide Alternate Capacity in an amount equal to the Contract Quantity of that Showing Month.

## 4.6 <u>Delivery of Product</u>

Seller shall provide Buyer with the Designated RA Capacity of Product for each Showing Month consistent with the following:

- (a) Seller shall submit, or cause the Unit's Scheduling Coordinator to submit, by the Notification Deadline (i) Monthly Supply Plans and (ii) Annual Supply Plans if the Confirmation Effective Date is prior to the year-ahead Compliance Showing deadline applicable for the Showing Months as specified in Section 4.1, in accordance with the CAISO Tariff, identifying and confirming the transfer of the Designated RA Capacity to Buyer for each Showing Month, unless Buyer specifically requests in writing that Seller not do so (it being understood that any Designated RA Capacity subject to such a request from Buyer will be deemed to have been provided to Buyer for all purposes under this Confirmation).
- (b) The Product is delivered and received when the CIRA Tool shows the Supply Plan accepted for the Product from the Unit by CAISO or Seller complies with Buyer's instruction to withhold all or part of the Contract Quantity from Seller's Supply Plan for any Showing Month during the Delivery Period. Seller has failed to deliver the Product if (i) Buyer has elected to submit the Product from the Unit in its Resource Adequacy Plan and such submission is accepted by the CPUC and the CAISO but the Supply Plan and Resource

Adequacy Plan are not matched in the CIRA Tool due solely to a Seller error, and are rejected by CAISO, or (ii) Seller fails to submit the volume of Designated RA Capacity for any Showing Month pursuant to this Confirmation. Buyer will have received the Contract Quantity if (x) Seller's Supply Plan is accepted by the CAISO for the applicable Showing Month, (y) Seller correctly submits the Supply Plan and the Supply Plan and/or Resource Adequacy Plan are not matched in the CIRA Tool due solely to a Buyer error or (z) Seller complies with Buyer's instruction to withhold all or part of the Contract Quantity from Seller's Supply Plan for the applicable Showing Month. Seller will not have failed to deliver the Contract Quantity if Buyer fails or chooses not to submit the Unit and the Product in its Resource Adequacy Plan with the CPUC or CAISO.

### 4.7 Damages for Failure to Provide Designated RA Capacity

If Seller fails to provide Buyer with the Designated RA Capacity of Product for any Showing Month and such failure is not excused under the terms of this Confirmation, then the following shall apply:

- Buyer may, but shall not be required to, replace any portion of the Designated RA Capacity (a) not provided by Seller with capacity having equivalent RAR Attributes, LAR Attributes and/or FCR Attributes as the Designated RA Capacity not provided by Seller, provided, that, if any portion of the Designated RA Capacity that Buyer is seeking to replace is Designated RA Capacity having RAR Attributes and no LAR Attributes (such capacity shall also include FCR Attributes if this is a Flexible Capacity Product) and no such RAR capacity is available, then Buyer may replace such portion of the Designated RA Capacity with other capacity having RAR Attributes and LAR Attributes (as well as FCR Attributes if this is a Flexible Capacity Product) ("Replacement Capacity"). Such Replacement Capacity may be provided by CAISO to Buyer pursuant to the Tariff. Buyer may enter into purchase transactions with one or more parties to replace any portion of Designated RA Capacity not provided by Seller. Additionally, Buyer may enter into one or more arrangements to repurchase its obligation to sell and deliver capacity to another party and, to the extent such transactions are done at prevailing market prices, such arrangements shall be considered equivalent to the procurement of Replacement Capacity. Buyer shall use commercially reasonable efforts to minimize damages when procuring any Replacement Capacity.
- (b) Seller shall pay to Buyer at the time set forth in Section 4.1 of the Master Agreement, the following damages in lieu of damages specified in Section 4.1 of the Master Agreement: an amount equal to the positive difference, if any, between (i) the sum of (A) the actual cost paid by Buyer for any Replacement Capacity, plus (B) each Capacity Replacement Price times the amount of the Designated RA Capacity neither provided by Seller nor purchased by Buyer pursuant to Section 4.7(a), and (ii) the Designated RA Capacity not provided for the applicable Showing Month times the Contract Price for that month. If Seller fails to pay these damages, then Buyer may offset those damages owed it against any future amounts it may owe to Seller under this Confirmation pursuant to Article Six of the Master Agreement.

#### 4.8 Indemnities for Failure to Deliver Contract Quantity

Subject to any adjustments made pursuant to Section 4.4 and requests from Buyer pursuant to Section 4.6(b)(i), Seller agrees to indemnify, defend and hold harmless Buyer from any penalties, fines or costs assessed against Buyer by the CPUC or the CAISO, to the extent not otherwise paid by Seller to Buyer under Section 4.7(b), resulting from any of the following:

- (a) Seller's failure to provide any portion of the Designated RA Capacity;
- (b) Seller's failure to provide notice of the non-availability of any portion of Designated RA Capacity as required under Sections 4.4 and 4.5;

- (c) A Unit Scheduling Coordinator's failure to timely submit Supply Plans that identify Buyer's right to the Designated RA Capacity purchased hereunder; or
- (d) A Unit Scheduling Coordinator's failure to submit accurate Supply Plans that identify Buyer's right to the Designated RA Capacity purchased hereunder.

With respect to the foregoing, the Parties shall use commercially reasonable efforts to minimize such penalties, fines and costs; provided, that in no event shall Buyer be required to use or change its utilization of its owned or controlled assets or market positions to minimize these penalties and fines. If Seller fails to pay the foregoing penalties, fines or costs, or fails to reimburse Buyer for those penalties, fines or costs, then Buyer may offset those penalties, fines or costs against any future amounts it may owe to Seller under this Confirmation.

# 4.9 Monthly RA Capacity Payment

Each Unit's

Monthly RA Capacity Payment shall be equal to the product of (a) the applicable Contract Price for that Monthly Delivery Period, (b) the Designated RA Capacity actually delivered by Seller to Buyer for the Monthly Delivery Period, and (c) 1,000; provided, however, that the Monthly RA Capacity Payment shall be prorated to reflect any portion of Designated RA Capacity that was not delivered pursuant to Section 4.6 at the time of the CAISO filing for the respective Showing Month. The final product of this Monthly RA Capacity Payment calculation shall be rounded to the nearest penny (i.e., two decimal places).

# RA CAPACITY PRICE TABLE

Contract Year/Month	RA Capacity Price (\$/kW-month)
July 2022 – September 2022	
October 2022 – December 2022	
January 2023 – December 2023	
January 2024 – December 2030	

## 4.10 Allocation of Other Payments and Costs

Seller may retain any revenues it may receive from the CAISO or any other third party with respect to any Unit for (a) start-up, shut-down, and minimum load costs, (b) capacity revenue for ancillary services, (c) energy sales, (d) any revenues for black start or reactive power services, or (e) the sale of the unitcontingent call rights on the generation capacity of the Unit to provide energy to a third party, so long as such rights do not confer on such third party the right to claim any portion of the RA Capacity sold hereunder in order to make an RAR Showing, LAR Showing, FCR Showing, or any similar capacity or resource adequacy showing with the CAISO or CPUC. Buyer acknowledges and agrees that all Availability Incentive Payments are for the benefit of Seller and for Seller's account, and that Seller shall receive, retain, or be entitled to receive all credits, payments, and revenues, if any, resulting from Seller achieving or exceeding Availability Standards. The Parties acknowledge and agree that any Non-Availability Charges are the responsibility of Seller, and for Seller's account and Seller shall be responsible for all fees, charges, or penalties, if any, resulting from Seller failing to achieve Availability Standards. However, Buyer shall be entitled to receive and retain all revenues associated with the Designated RA Capacity of any Unit during the Delivery Period (including any capacity or availability revenues from RMR Agreements for any Unit, Reliability Compensation Services Tariff, and Residual Unit Commitment capacity payments, but excluding payments described in clauses (a) through (c) above). In accordance with Section 4.9 of this Confirmation and Article Six of the Master Agreement, all such revenues received by Seller, or a Unit's SC, owner, or operator shall be remitted to Buyer, and Seller shall indemnify Buyer for any such revenues that Buyer does

not receive, and Seller shall pay such revenues to Buyer if the Unit's SC, owner, or operator fails to remit those revenues to Buyer. If Seller fails to pay such revenues to Buyer, Buyer may offset any amounts owing to it for such revenues pursuant to Article Six of the Master Agreement against any future amounts it may owe to Seller under this Confirmation.



During the Delivery Period, except to the extent any Unit is in an Outage, or is affected by an event of Force Majeure that results in a partial or full Outage of that Unit, Seller shall either schedule or cause the Unit's Scheduling Coordinator to schedule with, or make available to, the CAISO each Unit's Designated RA Capacity in compliance with the Tariff, and shall perform all, or cause the Unit's Scheduling Coordinator, owner, or operator, as applicable, to perform all obligations under the Tariff that are associated with the sale of Designated RA Capacity hereunder. Buyer shall have no liability for the failure of Seller or the failure of any Unit's Scheduling Coordinator, owner, or operator to comply with such Tariff provisions, including any penalties or fines imposed on Seller or the Unit's Scheduling Coordinator, owner, or operator for such noncompliance.



7. OTHER BUYER AND SELLER COVENANTS

7.1. Buyer and Seller shall, throughout the Delivery Period, take all commercially reasonable actions and execute any and all documents or instruments reasonably necessary to ensure Buyer's right to the use of the Contract Quantity for the sole benefit of Buyer's RAR, LAR and/or FCR, as applicable, or that of a Subsequent Buyer under Article 9. Such commercially reasonable actions (neither Party shall be required to spend spend under the Agreement in support of such actions) shall include, without limitation:

- (a) Cooperating with and providing, and in the case of Seller causing each Unit's Scheduling Coordinator, owner, or operator to cooperate with and provide requested supporting documentation to the CAISO, the CPUC, or any other Governmental Body responsible for administering RAR, LAR and/or FCR under Applicable Laws, to certify or qualify the Contract Quantity as RA Capacity and Designated RA Capacity. Such actions shall include, without limitation, providing information requested by the CAISO, the CPUC, or by an LRA having jurisdiction, to demonstrate for each month of the Delivery Period the ability to deliver the Contract Quantity from each Unit to the CAISO Controlled Grid for the minimum hours required to qualify as RA Capacity, and providing information requested by the CPUC, the CAISO or other Governmental Body having jurisdiction to administer RAR, LAR or FCR to demonstrate that the Contract Quantity can be delivered to the CAISO Controlled Grid, pursuant to "deliverability" standards established by the CAISO, or other Governmental Body having jurisdiction to administer RAR, LAR and/or FCR; and
- (b) Subject to Section 4.4, negotiating in good faith to make necessary amendments, if any, to this Confirmation to conform this Transaction to subsequent clarifications, revisions, or decisions rendered by the CPUC, CAISO, FERC, or other Governmental Body having jurisdiction to administer RAR, LAR and FCR, in each case occurring after the Confirmation Effective Date, so as to maintain the benefits of the bargain struck by the Parties on the Confirmation Effective Date.

#### 7.2 Seller represents, warrants and covenants to Buyer that, throughout the Delivery Period:

- (a) Seller owns or has the exclusive right to the RA Capacity sold under this Confirmation from each Unit, and shall furnish Buyer, CAISO, CPUC or other jurisdictional LRA, or other Governmental Body with such evidence as may reasonably be requested to demonstrate such ownership or exclusive right;
- (b) No portion of the Contract Quantity has been committed by Seller to any third party in order to satisfy RAR, LAR, FCR or such analogous capacity obligations in CAISO markets, other than pursuant to an RMR Agreement between the CAISO and either Seller or the Unit's owner or operator;
- (c) No portion of the Contract Quantity has been committed by Seller in order to satisfy RAR, LAR, FCR, or analogous capacity obligations in any non-CAISO market;
- (d) Each Unit is connected to the CAISO Controlled Grid, is within the CAISO Control Area, or is under the control of CAISO;
- (e) The owner or operator of each Unit is obligated to maintain and operate each Unit using Good Utility Practice and, if applicable, General Order 167 as outlined by the CPUC in the Enforcement of Maintenance and Operation Standards for Electric Generating Facilities Adopted May 6, 2004, and is obligated to abide by all Applicable Laws in operating such Unit; provided, that the owner or operator of any Unit is not required to undertake capital improvements, facility enhancements, or the construction of new facilities;
- (f) The owner or operator of each Unit is obligated to comply with Applicable Laws, including the Tariff, relating to RA Capacity and, as applicable, RAR, LAR and/or FCR;
- (g) If Seller is the owner of any Unit, the respective cumulative sums of LAR Attributes, RAR Attributes, and FCR Attributes that Seller has sold, assigned or transferred for any Unit does not exceed that Unit's RA Capacity;

- (h) With respect to the RA Capacity provided under this Confirmation, Seller shall, and each Unit's SC is obligated to, comply with Applicable Laws, including the Tariff, relating to RA Capacity, and RAR, LAR and FCR;
- (i) Seller has notified the SC of each Unit that Seller has transferred the Designated RA Capacity to Buyer, and the SC is obligated to deliver the Supply Plans in accordance with the Tariff;
- (j) Seller has notified the SC of each Unit that Seller is obligated to cause each Unit's SC to provide to the Buyer, by the Notification Deadline, the Designated RA Capacity of each Unit that is to be submitted in the Supply Plan associated with this Agreement for the applicable period; and
- (k) Seller has notified each Unit's SC that Buyer is entitled to the revenues set forth in Section 4.10 of this Confirmation, and such SC is obligated to promptly deliver those revenues to Buyer, along with appropriate documentation supporting the amount of those revenues.

# 8.

# CONFIDENTIALITY

Notwithstanding Section 10.11 of the Master Agreement, the Parties agree that Buyer may disclose information regarding this Transaction to any Governmental Body, the CPUC, the CAISO or any LRA having jurisdiction as necessary to support its LAR Showings, RAR Showings, and/or FCR Showings, as applicable, or to a Subsequent Buyer in connection with Article 9, and Seller may disclose information regarding this Transaction to the SC of each Unit in order for such SC to timely submit accurate Supply Plans. Buyer may also disclose to any Subsequent Buyer whatever information regarding this Transaction is commercially reasonable for such party to evaluate the re-sale; provided that any Subsequent Buyer agrees in writing to maintain the confidentiality of such information consistent with this Section 8. Upon request or demand of any third person or entity not a Party hereto to Buyer pursuant to the California Public Records Act for production, inspection and/or copying of confidential information regarding this Transaction, Buyer will as soon as practical notify Seller in writing via email that such request has been made. Seller will be responsible for taking whatever legal steps are necessary to prevent Buyer's release of such information to the third party. Seller acknowledges that Buyer is a public agency subject to the requirements of the California Public Records Act (Cal. Gov. Code section 6250 et seq.).

### 9. BUYER'S RE-SALE OF PRODUCT

- (a) Buyer may re-sell all or a portion of the Contract Quantity of Product hereunder; provided, however, that (i) any Subsequent Buyer assumes all of Buyer's obligations and liabilities hereunder, and (ii) any such re-sale does not increase Seller's obligations or liabilities hereunder. Seller will, or will cause the Unit's SC, to follow Buyer's instructions with respect to providing such resold Product to Subsequent Buyers, to the extent such instructions are consistent with Seller's obligations under this Confirmation. Seller will, and will cause the Unit's SC, to take all commercially reasonable actions and execute all documents or instruments reasonably necessary to allow such Subsequent Buyers to use such resold Product in a manner consistent with Buyer's rights under this Confirmation. If Buyer incurs any liability to a Subsequent Buyer due to the failure of Seller or the Unit's SC to comply with this Confirmation, Seller will be liable to Buyer for the same amounts Seller would have owed Buyer under this Confirmation if Buyer had not resold the Product.
- (b) Buyer will notify Seller in writing of any resale of Product and the Subsequent Buyer no later than two (2) Business Days before the Notification Deadline for the Showing Month. Buyer will notify Seller of any subsequent changes or further resales no later than two (2) Business Days before the Notification Deadline for the Showing Month. Seller agrees, and agrees to cause the Unit's SC, to: (i) follow Buyer's reasonable instructions with respect to

providing such resold Product to Subsequent Buyers of such resold Product; and (ii) take all commercially reasonable actions and execute any and all documents or instruments reasonably necessary to allow such Subsequent Buyers to use such resold Product.

(c) If CAISO or CPUC develops a centralized capacity market, Buyer will have exclusive rights to direct Seller to offer, bid, or otherwise submit the applicable Contract Quantity of Product for each day during the Delivery Period provided to Buyer pursuant to this Confirmation for re-sale in such market, and Seller and the Unit's SC shall comply with Buyer's direction and Buyer shall retain and receive all revenues from such re-sale. Seller agrees to take all commercially reasonable actions to assist Buyer with such re-sale, provided that Seller's obligation to assist shall not require modification of any of the commercial terms of this Confirmation.

#### 10. MARKET BASED RATE AUTHORITY

Seller agrees, in accordance with Federal Energy Regulatory Commission (FERC) Order No. 697, to, upon request of Buyer, submit a letter of concurrence in support of any affirmative statement by Buyer that this contractual arrangement does not transfer "ownership or control of generation capacity" from Seller to Buyer as the term "ownership or control of generation capacity" is used in 18 CFR Section 35.42. Seller also agrees that it will not, in filings, if any, made subject to Order Nos. 652 and 697, claim that this contractual arrangement conveys ownership or control of generation capacity from Seller to Buyer.

#### 11. COLLATERAL REQUIREMENTS

[Signatures appear on the following page.]

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# ACKNOWLEDGED AND AGREED TO AS OF THE CONFIRMATION EFFECTIVE DATE

Calpine Energy Services, L.P.

Marin Clean Energy, a California joint powers authority

Ву:	Ву:	
Name:	Name:	
Title:	Title:	

Approved as to form:

Ву:	 	 
Name:	 	 
Title:	 	 

# Appendix A

# Shown Unit Information

Name:	
Location:	
CAISO Resource ID:	
Unit SCID:	
Unit NQC:	
Unit EFC:	
Resource Type:	
Resource Category (MCC 1, 2, 3 or 4):	
Flexible Capacity Category (1, 2 or 3):	
Path 26 (North or South):	
Local Capacity Area (if any, as of Confirmation Effective Date):	
Deliverability restrictions, if any, as described in most recent CAISO deliverability assessment:	
Run Hour Restrictions:	

#### MASTER POWER PURCHASE AND SALE AGREEMENT CONFIRMATION LETTER BETWEEN CALPINE ENERGY SERVICES, L.P. AND MARIN CLEAN ENERGY

This confirmation letter ("Confirmation") confirms the Transaction between **Calpine Energy Services, L.P.**, a Delaware limited partnership ("Seller"), and **Marin Clean Energy**, a California joint powers authority ("Buyer"), each individually a "Party" and together the "Parties", dated as of October 14, 2021 (the "Confirmation Effective Date"), in which Seller agrees to provide to Buyer the right to the Product, as such term is defined in Article 3 of this Confirmation. This Transaction is governed by the Edison Electric Institute Master Power Purchase and Sale Agreement between the Parties, and that certain Cover Sheet, effective as of July 11, 2013, along with any annexes and amendments thereto (collectively, the "Master Agreement"). The Master Agreement and this Confirmation shall be collectively referred to herein as the "Agreement". Capitalized terms used but not otherwise defined in this Confirmation have the meanings ascribed to them in the Master Agreement or the Tariff (as defined herein).

#### 1. DEFINITIONS

- **1.1** "Alternate Capacity" means any replacement Product which Seller has elected to provide to Buyer in accordance with the terms of Section 4.5.
- **1.2** "Annual Supply Plan" has the meaning set forth in the Tariff.
- **1.3** "Applicable Laws" means any law, rule, regulation, order, decision, judgment, or other legal or regulatory determination by any Governmental Body having jurisdiction over one or both Parties or this Transaction, including without limitation, the Tariff.
- **1.4** "Availability Incentive Payments" has the meaning set forth in the Tariff.
- **1.5** "Availability Standards" shall mean Availability Standards as defined in Section 40.9 of the Tariff or otherwise applicable to CAISO.
- **1.6** "Buyer" has the meaning specified in the introductory paragraph hereof.
- **1.7** "CAISO" means the California Independent System Operator or its successor.
- **1.8** "Capacity Replacement Price" means (a) the price actually paid for any Replacement Capacity purchased by Buyer pursuant to Section 4.7 hereof, plus costs reasonably incurred by Buyer in purchasing such Replacement Capacity, or (b) absent a purchase of any Replacement Capacity, the market price for such Designated RA Capacity not provided at the Delivery Point. The Buyer shall determine such market prices in a commercially reasonable manner. For purposes of the definition of Section 1.51 of the Master Agreement, "Capacity Replacement Price" shall be deemed to be the "Replacement Price."
- **1.9** "CIRA Tool" means the CAISO Customer Interface for Resource Adequacy application, or its successor platform.
- **1.10** "Compliance Showings" means the Flexible RAR Showings, LAR Showings, and RAR Showings, as applicable to the Product.
- **1.11** "Confirmation" has the meaning specified in the introductory paragraph hereof.

- **1.12** "Confirmation Effective Date" has the meaning specified in the introductory paragraph hereof.
- **1.13** "Contingent Firm RA Product" has the meaning specified in Section 3.4 hereof.
- **1.14** "Contract Price" means, for any Monthly Delivery Period, the price specified under the RA Capacity Price Table in Section 4.9.
- **1.15** "Contract Quantity" means, with respect to any particular Showing Month of the Delivery Period, the amount of Product (in MWs) set forth in the "Contract Quantity (MWs)" table in Section 4.3 which Seller has agreed to provide to Buyer from the Unit for such Showing Month.
- **1.16** "Control Area" has the meaning set forth in the Tariff.
- 1.17 "CPUC Decisions" means CPUC Decisions 04-01-050, 04-10-035, 05-10-042, 06-06-064, 06-07-031, 07-06-029, 08-06-031, 09-06-028, 10-06-036, 11-06-022, 12-06-025, 13-06-024, 14-06-050, 15-06-063, 16-06-045, 17-06-027, 19-02-022, 19-06-026, D.19-10-021, D.20-06-002, D.20-06-028, 20-06-031, and 20-12-006 and subsequent decisions related to resource adequacy issued from time to time by the CPUC.
- **1.18** "CPUC Filing Guide" means the annual document issued by the CPUC which sets forth the guidelines, requirements and instructions for LSE's to demonstrate compliance with the CPUC's resource adequacy program.
- **1.19** "Delivery Period" has the meaning specified in Section 4.1 hereof.
- **1.20** "Delivery Point" has the meaning specified in Section 4.2 hereof.
- **1.21** "Designated RA Capacity" shall be equal to, with respect to any particular Showing Month of the Delivery Period, the Contract Quantity of Product for such Showing Month including the amount of Contract Quantity that Seller has elected to provide Alternate Capacity with respect to, minus any reductions to Contract Quantity specified in Section 4.4 with respect to which Seller has not elected to provide Alternate Capacity.
- **1.22** "Effective Flexible Capacity" means the flexible capacity of a resource that can be counted towards an LSE's FCR obligation, as identified from time to time by the Tariff, the CPUC Decisions, LRA, or other Governmental Body having jurisdiction.
- **1.23** "FCR Attributes" means, with respect to a Unit, any and all FCR attributes that can be counted toward an LSE's FCR, as they are identified from time to time by the CPUC Decisions, the Tariff, an LRA, or other Governmental Body having jurisdiction that can be counted toward FCR and are consistent with the operational limitations and physical characteristics of such Unit. For clarity, it should be understood that if the CAISO, LRA, or other Governmental Body, defines new or redefines the FCR Attributes of a Unit, then such change will not result in a change in obligations or payments made pursuant to this Transaction.
- **1.24** "FCR Showings" means the FCR compliance showings (or similar or successor showings) an LSE is required to make to the CPUC (and, to the extent authorized by the CPUC, to the CAISO) pursuant to the CPUC Decisions and the Tariff, or to an LRA having jurisdiction over the LSE.
- **1.25** "Firm RA Product" has the meaning specified in the Section 3.3 hereof.
- **1.26** "Flexible Capacity Category" shall be as described in the annual CPUC Filing Guide, as such may be modified, amended, supplemented or updated from time to time.

- **1.27** "Flexible Capacity Requirements" or "FCR" means the flexible capacity requirements established for LSEs by the CPUC pursuant to the CPUC Decisions, or by an LRA or other Governmental Body having jurisdiction.
- **1.28** "Flexible RA Product" has the meaning specified in the Section 3.2 hereof.
- **1.29** "GADS" means the Generating Availability Data System or its successor.
- **1.30** "Generic RA Product" means Designated RA Capacity consisting of RAR Attributes and, if applicable, LAR Attributes, which does not include FCR Attributes.
- **1.31** "Governmental Body" means (i) any federal, state, local, municipal or other government; (ii) any governmental, regulatory or administrative agency, commission or other authority lawfully exercising or entitled to exercise any administrative, executive, judicial, legislative, police, regulatory or taxing authority or power; and (iii) any court or governmental tribunal.
- **1.32** "LAR" means local area reliability, which is any program of localized resource adequacy requirements established for jurisdictional LSEs by the CPUC pursuant to the CPUC Decisions, or by another LRA having jurisdiction over the LSE, as implemented in the Tariff. LAR may also be known as local resource adequacy, local RAR, or local capacity requirement in other regulatory proceedings or legislative actions.
- **1.33** "LAR Attributes" means, with respect to a Unit, any and all resource adequacy attributes (or other locational attributes related to system reliability), as they are identified as of the Confirmation Effective Date by the CPUC Decisions, CAISO, LRA, or other Governmental Body having jurisdiction, associated with the physical location or point of electrical interconnection of the Unit within the CAISO Control Area, that can be counted toward LAR and are consistent with the operational limitations and physical characteristics of such Unit, but exclusive of any RAR Attributes which are not associated with where in the CAISO Control Area the Unit is physically located or electrically interconnected. For clarity, it should be understood that if the CAISO, LRA, or other Governmental Body, defines new or re-defines existing local areas, then such change will not result in a change in obligations or payments made pursuant to this Transaction.
- **1.34** "LAR Showings" means the LAR compliance showings (or similar or successor showings) an LSE is required to make to the CPUC (and, to the extent authorized by the CPUC, to the CAISO) pursuant to the CPUC Decisions, or to an LRA having jurisdiction over the LSE.
- **1.35** "LRA" has the meaning set forth in the Tariff.
- **1.36** "LSE" means load-serving entity. LSEs may be an investor-owned utility, an electric service provider, a community aggregator or community choice aggregator, or a municipality serving load in the CAISO Control Area (excluding exports).
- **1.37** "Master Agreement" has the meaning specified in the introductory paragraph hereof.
- **1.38** "Maximum Cumulative Capacity" or "MCC" shall have the meaning specified in Section 2.1 hereof.
- **1.39** "Monthly Delivery Period" means each calendar month during the Delivery Period and shall correspond to each Showing Month.
- **1.40** "Monthly RA Capacity Payment" has the meaning specified in Section 4.9 hereof.
- **1.41** "Monthly Supply Plan" has the meaning set forth in the Tariff.
- **1.42** "NERC" means the North American Electric Reliability Council, or its successor.

- **1.43** "NERC/GADS Protocols" means the GADS protocols established by NERC, as may be updated from time to time.
- **1.44** "Net Qualifying Capacity" has the meaning set forth in the Tariff.
- **1.45** "Non-Availability Charges" has the meaning set forth in the Tariff.
- 1.46 "Notification Deadline" means in respect of a Showing Month the day that is fifteen (15) Business Days before the Compliance Showing deadlines. For illustrative purposes only, as of the Confirmation Effective Date, the applicable Compliance Showing deadlines are as follows: (A) forty-five (45) days prior to the Showing Month covered by the Supply Plan for the Monthly Supply Plan; and (B) the last Business Day of October that is prior to commencement of the year for the Annual Supply Plan. The Parties acknowledge and agree that such dates may be modified by the CAISO from time to time throughout the Delivery Period
- **1.47** "Outage" means disconnection, separation, or reduction in the capacity of any Unit that relieves all or part of the offer obligations of the Unit consistent with the Tariff. For the avoidance of doubt, Outage shall be deemed to include Planned Outage (defined below).
- **1.48** "Planned Outage" means, subject to and as further described in the CPUC Decisions and the Tariff (Planned Outage referred to as "Approved Maintenance Outage" under the Tariff), a CAISO-approved planned or scheduled disconnection, separation or reduction in capacity of the Unit that is conducted for the purposes of carrying out routine repair or maintenance of such Unit, or for the purposes of new construction work for such Unit.
- **1.49** "Product" has the meaning specified in Article 3 hereof.
- **1.50** "RA Capacity" means the qualifying and deliverable capacity of the Unit for RAR, LAR, and FCR purposes for the Delivery Period, as determined by the CAISO, or other Governmental Body authorized to make such determination under Applicable Laws. RA Capacity encompasses the RAR Attributes, LAR Attributes and FCR Attributes of the capacity provided by a Unit, as applicable pursuant to this Confirmation.
- **1.51** "RA Capacity Price" means the price specified in the RA Capacity Price Table in Section 4.9 hereof.
- **1.52** "RAR" or "Resource Adequacy Requirements" means the resource adequacy requirements, exclusive of LAR and FCR, established for LSEs by the CPUC pursuant to the CPUC Decisions, by the CAISO under the Tariff, or by an LRA or other Governmental Body having jurisdiction.
- **1.53** "RAR Attributes" means, with respect to a Unit, any and all resource adequacy attributes, as they are identified as of the Confirmation Effective Date by the Tariff, the CPUC Decisions, LRA, or any Governmental Body having jurisdiction, that can be counted toward RAR and are consistent with the operational limitations and physical characteristics of such Unit, exclusive of any LAR Attributes or FCR Attributes.
- **1.54** "RAR Showings" means the RAR compliance showings (or similar or successor showings) an LSE is required to make to the CPUC (and/or, to the extent authorized by the CPUC, to the CAISO), pursuant to the Tariff, the CPUC Decisions or LRA having jurisdiction.
- **1.55** "Replacement Capacity" has the meaning specified in Section 4.7 hereof.
- **1.56** "Replacement Unit" means a generating unit having the same capacity attributes as a Shown Unit, including the requirements set forth in Articles 3 and 4, and the Resource Category requirements set forth in Section 2.1(c), and meeting the requirements specified in Section 4.5.

- **1.57** "Resource Adequacy Plan" has the meaning set forth in the Tariff.
- **1.58** "Resource Category" shall be as described in the CPUC Filing Guide, as such may be modified, amended, supplemented or updated from time to time.
- **1.59** "Scheduling Coordinator" or "SC" has the same meaning as in the Tariff.
- **1.60** "Seller" has the meaning specified in the introductory paragraph hereof.
- **1.61** "Showing Month" is the calendar month during the Delivery Period that is the subject of the Compliance Showing. For illustrative purposes only, pursuant to the CPUC Decisions in effect as of the Confirmation Effective Date, the monthly Compliance Showing made in June is for the Showing Month of August.
- **1.62** "Shown Unit" means a generating unit that meets Product characteristics and Contract Quantity specified in Articles 3 and 4 and the Resource Category requirements set forth in Section 2.1(c) from which RA Capacity will be provided by Seller to Buyer and that Seller identifies annually pursuant to Article 2.
- **1.63** "Subsequent Buyer" means the purchaser of Product from Buyer in a re-sale of Product by Buyer.
- **1.64** "Substitute Capacity" has the meaning set forth in the Tariff for "RA Substitute Capacity."
- **1.65** "Supply Plan" has the meaning set forth in the Tariff.
- **1.66** "Tariff" means the tariff and protocol provisions of the CAISO, including associated rules, procedures and business practice manuals, as amended or supplemented from time to time.
- **1.67** "Transaction" has the meaning specified in the introductory paragraph hereof.
- **1.68** "Unit" or "Units" shall mean the Shown Unit described in Article 2 hereof (and any Replacement Units), from which RA Capacity is provided by Seller to Buyer.
- 1.69 "Unit EFC" means the Effective Flexible Capacity set by the CAISO for the applicable Unit. If the CAISO adjusts the Effective Flexible Capacity of a Unit after the Confirmation Effective Date, then for the period in which the adjustment is effective, the Unit EFC shall be deemed the lesser of (i) the Unit EFC as of the Confirmation Effective Date, and (ii) the CAISO-adjusted Effective Flexible Capacity. To the extent the Confirmation Effective Date of this Confirmation occurs prior to the CAISO's setting of a Unit EFC for the applicable Unit, the Unit EFC shall be as agreed to by the Parties and specified in Article 2, and Seller represents that, to the best of its knowledge, this Unit EFC is consistent with the CAISO's methodology for determining Unit EFC as of the Confirmation Effective Date. To the extent the CAISO creates new categories of flexible capacity during the term of this Transaction and a Unit can count toward such new categories of flexible capacity while operating consistent with the operational limitation and physical characteristics of such Unit, any and all such new categories of flexible capacity shall be deemed to be part of the Effective Flexible Capacity of that Unit. The above notwithstanding, to the extent the CAISO decides to reduce the applicable Unit EFC. Seller shall not be liable for any costs or damages related to such reduction and the Unit EFC shall be reduced per Section 4.4 of this Confirmation.
- **1.70** "Unit NQC" means the Net Qualifying Capacity set by the CAISO for the applicable Unit. If the CAISO adjusts the Net Qualifying Capacity of a Unit after the Confirmation Effective Date, then for the period in which the adjustment is effective, the Unit NQC shall be deemed the lesser of (i) the Unit NQC as of the Confirmation Effective Date, and (ii) the CAISO-adjusted Net Qualifying Capacity.

#### 2. UNIT DESIGNATION

## 2.1 Seller to Annually Designate Shown Unit

(a) On an annual basis during the term of this Transaction, Seller shall designate the Shown Unit(s) from which RA Capacity will be provided to Buyer for the following calendar year by providing Buyer with the specific Unit information contained in Appendix A by no later than the earlier of (i) October 1, or (ii) thirty (30) calendar days before the deadline for the yearahead Compliance Showing.



3. RESOURCE ADEQUACY CAPACITY PRODUCT

During the Delivery Period, Seller shall provide to Buyer, pursuant to the terms of this Confirmation, the Designated RA Capacity in the amount of the Contract Quantity of (i) RAR Attributes and, if applicable, LAR Attributes, and (ii) FCR Attributes, if Flexible RA Product is specified in Section 3.2, and the Contract Quantity shall be either a Firm RA Product or a Contingent Firm RA Product, as specified in either Section 3.3 or 3.4 (the "Product"). The Product does not confer to Buyer any right to the electrical output from the Units, other than the right to include the Designated RA Capacity associated with the Contract Quantity in RAR Showings, LAR Showings, and FCR Showings, as applicable, and any other capacity or resource adequacy markets or proceedings as specified in this Confirmation. Specifically, no energy or ancillary services associated with any Unit is required to be made available to Buyer as part of this Transaction and Buyer shall not be responsible for compensating Seller for Seller's commitments to the CAISO required by this Confirmation. Seller retains the right to sell pursuant to the Tariff any RA Capacity from a Unit that is in excess of that Unit's Contract Quantity and any RAR Attributes, LAR Attributes or FCR Attributes not otherwise transferred, conveyed, or sold to Buyer under this Confirmation.

## 3.1 RAR and LAR Attributes

Seller shall provide Buyer with the Designated RA Capacity of RAR Attributes and, if applicable, LAR Attributes from each Unit, as measured in MWs, in accordance with the terms and conditions of this Agreement.

## 3.2 X Flexible RA Product

Seller shall provide Buyer with Designated RA Capacity of FCR Attributes from the Units in the amount of the applicable Contract Quantity.

## 3.3 **Firm RA Product**

Seller shall provide Buyer with Designated RA Capacity from the Units in the amount of the Contract Quantity. If the Units are not available to provide the full amount of the Contract Quantity for any reason other than Force Majeure, including without limitation any Outage or any adjustment of the RA Capacity of any Unit, pursuant to Section 4.4, then, Seller shall provide Buyer with Designated RA Capacity from one or more Replacement Units pursuant to Section 4.5 hereof. If Seller fails to provide Buyer with replacement Designated RA Capacity from Replacement Units pursuant to Section 4.5, then Seller shall be liable for damages and/or required to indemnify Buyer for penalties or fines pursuant to the terms of Sections 4.7 and 4.8 hereof.

### 3.4 **Contingent Firm RA Product**

Seller shall provide Buyer with Product from the Unit in the amount of the applicable Contract Quantity; provided, however, that if, and to the extent that the Shown Unit is not available to provide the full amount of the Contract Quantity due to any reduction in Contract Quantity in accordance with Section 4.4, Seller shall have the option to notify Buyer that either (a) Seller will not provide the portion of the Contract Quantity attributable to such reduction during the period of such non-availability; or (b) Seller will supply Alternate Capacity to fulfill the remainder of the Contract Quantity during such period pursuant to Section 4.5. If Seller fails to provide Buyer with the Designated RA Capacity from the Unit and has failed to supply Alternate Capacity to fulfill the remainder of the Designated RA Capacity during such period, Seller shall be liable for damages and/or required to indemnify Buyer for penalties or fines pursuant to the terms of Section 4.7 and 4.8.

#### 4. DELIVERY AND PAYMENT

#### 4.1 <u>Delivery Period</u>

The Delivery Period shall be January 1, 2023 through December 31, 2030, inclusive.

## 4.2 Delivery Point

The Delivery Point for each Unit shall be the CAISO Control Area, and if applicable, the LAR region in which the Unit is electrically interconnected.

## 4.3 <u>Contract Quantity</u>

The Contract Quantity of each Unit for each Monthly Delivery Period shall be:

# **Contract Quantity (MWs)**

Contract Year/Month	Contract Quantity (MWs)
January 2023 – December 2023	
January 2024 – December 2030	

# 4.4 Adjustments to Contract Quantity

- (a) <u>Planned Outages</u>: If Seller is providing Contingent Firm RA Product and is unable to provide the applicable Contract Quantity for a portion of a Showing Month due to a Planned Outage of the Unit, then Seller shall have the option, but not the obligation, upon written notice to Buyer by the Notification Deadline, to either (i) reduce the Contract Quantity in accordance with the Planned Outage for such portion of the Showing Month, provided such reduction is able to be reflected on the Supply Plans in accordance with the Tariff; or (ii) provide Alternate Capacity in accordance with Section 4.5 up to the Contract Quantity for the applicable portion of such Showing Month.
- (b) <u>Reductions in Unit NQC</u>: If Product is both (i) Generic RA Product, and (ii) Contingent Firm RA Product specified under Section 3.4, then Seller's obligation to deliver the applicable Contract Quantity for any Showing Month may also be reduced if the Shown Unit experiences a reduction in Unit NQC after the Confirmation Effective Date as determined by the CAISO. Seller's potential reduction in Contract Quantity for each remaining Showing Month shall equal the product of (a) the applicable Showing Month Contract Quantity and (b) the total amount (in MW) Unit NQC was reduced since Confirmation Effective Date, divided by (c) Unit NQC as of the Confirmation Effective Date. If the Shown Unit experiences such a reduction in Unit NQC, then Seller has the option, but not the obligation, to provide the applicable Contract Quantity for such Showing Month from (i) the same Unit, provided the Unit has sufficient remaining and available Product and/or (ii) from Replacement Units, provided, that in each case Seller provides and identifies such Replacement Units in accordance with Section 4.5.
- (c) <u>Reductions in Unit EFC</u>: If Product is both (i) Flexible RA Product specified under Section 3.2, and (ii) Contingent Firm RA Product specified under Section 3.4, then Seller's obligation to deliver the applicable Contract Quantity of Product for any Showing Month may also be reduced if the Shown Unit experiences a reduction in Unit EFC as determined by the CAISO. Seller's potential reduction in Contract Quantity for each remaining Showing Month shall equal the product of (a) the applicable Showing Month Contract Quantity and (b) the total amount (in MW) Unit EFC was reduced since Confirmation Effective Date, divided by (c) Unit EFC as of the Confirmation Effective Date. If the Shown Unit experiences such a reduction in Unit EFC, then Seller has the option, but not the obligation, to provide the applicable Contract Quantity for such Showing Month from (i) the same Unit, provided the Unit has sufficient remaining and available Product and/or (ii) from Replacement Units, provided, that in each case Seller provides and identifies such Replacement Units in accordance with Section 4.5.



## 4.5 Alternate Capacity and Replacement Units

- (a) If Seller is unable to provide the full Contract Quantity for any Showing Month for any reason, including, without limitation, due to one of the reasons specified in Section 4.4, or Seller desires to provide the Contract Quantity for any Showing Month from a different generating unit other than the Shown Unit, then Seller may, at no cost to Buyer, provide Buyer with Alternate Capacity from one or more Replacement Units, with the total amount of Product provided to Buyer from the Shown Unit and Replacement Units up to an amount equal to the Contract Quantity for the applicable Showing Month; provided that in each case, Seller shall notify Buyer of its intent (i) not to provide or (ii) to provide Alternate Capacity and identify Replacement Units meeting the above requirements and the Resource Category requirements set forth in Section 2.1(c), no later than the Notification Deadline. If Seller notifies Buyer in writing as to the particular Replacement Units shall be automatically deemed a Unit for purposes of this Confirmation for that Showing Month.
- (b) With respect to a Contingent Firm RA Product, if Seller does not provide Alternate Capacity in an amount equal to the Contract Quantity for that Showing Month, then Buyer may, but shall not be required to, purchase replacement Product. Seller shall not be liable for damages and/or required to indemnify Buyer for penalties or fines pursuant to the terms of Sections 4.7 and 4.8 hereof if (i) the failure to deliver the full Contract Quantity is due to a reduction in Contract Quantity in accordance with Section 4.4 and (ii) Seller has notified Buyer, no later than the Notification Deadline, of Seller's intent not to provide Alternate Capacity in an amount equal to the Contract Quantity of that Showing Month.

## 4.6 <u>Delivery of Product</u>

Seller shall provide Buyer with the Designated RA Capacity of Product for each Showing Month consistent with the following:

- (a) Seller shall submit, or cause the Unit's Scheduling Coordinator to submit, by the Notification Deadline (i) Monthly Supply Plans and (ii) Annual Supply Plans if the Confirmation Effective Date is prior to the year-ahead Compliance Showing deadline applicable for the Showing Months as specified in Section 4.1, in accordance with the CAISO Tariff, identifying and confirming the transfer of the Designated RA Capacity to Buyer for each Showing Month, unless Buyer specifically requests in writing that Seller not do so (it being understood that any Designated RA Capacity subject to such a request from Buyer will be deemed to have been provided to Buyer for all purposes under this Confirmation).
- (b) The Product is delivered and received when the CIRA Tool shows the Supply Plan accepted for the Product from the Unit by CAISO or Seller complies with Buyer's instruction to withhold all or part of the Contract Quantity from Seller's Supply Plan for any Showing Month during the Delivery Period. Seller has failed to deliver the Product if (i) Buyer has elected to submit the Product from the Unit in its Resource Adequacy Plan and such submission is accepted by the CPUC and the CAISO but the Supply Plan and Resource Adequacy Plan are not matched in the CIRA Tool due solely to a Seller error, and are rejected by CAISO, or (ii) Seller fails to submit the volume of Designated RA Capacity for any Showing Month pursuant to this Confirmation. Buyer will have received the Contract

Quantity if (x) Seller's Supply Plan is accepted by the CAISO for the applicable Showing Month, (y) Seller correctly submits the Supply Plan and the Supply Plan and/or Resource Adequacy Plan are not matched in the CIRA Tool due solely to a Buyer error or (z) Seller complies with Buyer's instruction to withhold all or part of the Contract Quantity from Seller's Supply Plan for the applicable Showing Month. Seller will not have failed to deliver the Contract Quantity if Buyer fails or chooses not to submit the Unit and the Product in its Resource Adequacy Plan with the CPUC or CAISO.

### 4.7 <u>Damages for Failure to Provide Designated RA Capacity</u>

If Seller fails to provide Buyer with the Designated RA Capacity of Product for any Showing Month and such failure is not excused under the terms of this Confirmation, then the following shall apply:

- Buyer may, but shall not be required to, replace any portion of the Designated RA Capacity (a) not provided by Seller with capacity having equivalent RAR Attributes, LAR Attributes and/or FCR Attributes as the Designated RA Capacity not provided by Seller, provided, that, if any portion of the Designated RA Capacity that Buyer is seeking to replace is Designated RA Capacity having RAR Attributes and no LAR Attributes (such capacity shall also include FCR Attributes if this is a Flexible Capacity Product) and no such RAR capacity is available, then Buyer may replace such portion of the Designated RA Capacity with other capacity having RAR Attributes and LAR Attributes (as well as FCR Attributes if this is a Flexible Capacity Product) ("Replacement Capacity"). Such Replacement Capacity may be provided by CAISO to Buyer pursuant to the Tariff. Buyer may enter into purchase transactions with one or more parties to replace any portion of Designated RA Capacity not provided by Seller. Additionally, Buyer may enter into one or more arrangements to repurchase its obligation to sell and deliver capacity to another party and, to the extent such transactions are done at prevailing market prices, such arrangements shall be considered equivalent to the procurement of Replacement Capacity. Buyer shall use commercially reasonable efforts to minimize damages when procuring any Replacement Capacity.
- (b) Seller shall pay to Buyer at the time set forth in Section 4.1 of the Master Agreement, the following damages in lieu of damages specified in Section 4.1 of the Master Agreement: an amount equal to the positive difference, if any, between (i) the sum of (A) the actual cost paid by Buyer for any Replacement Capacity, plus (B) each Capacity Replacement Price times the amount of the Designated RA Capacity neither provided by Seller nor purchased by Buyer pursuant to Section 4.7(a), and (ii) the Designated RA Capacity not provided for the applicable Showing Month times the Contract Price for that month. If Seller fails to pay these damages, then Buyer may offset those damages owed it against any future amounts it may owe to Seller under this Confirmation pursuant to Article Six of the Master Agreement.

## 4.8 Indemnities for Failure to Deliver Contract Quantity

Subject to any adjustments made pursuant to Section 4.4 and requests from Buyer pursuant to Section 4.6(b)(i), Seller agrees to indemnify, defend and hold harmless Buyer from any penalties, fines or costs assessed against Buyer by the CPUC or the CAISO, to the extent not otherwise paid by Seller to Buyer under Section 4.7(b), resulting from any of the following:

- (a) Seller's failure to provide any portion of the Designated RA Capacity;
- (b) Seller's failure to provide notice of the non-availability of any portion of Designated RA Capacity as required under Sections 4.4 and 4.5;

- (c) A Unit Scheduling Coordinator's failure to timely submit Supply Plans that identify Buyer's right to the Designated RA Capacity purchased hereunder; or
- (d) A Unit Scheduling Coordinator's failure to submit accurate Supply Plans that identify Buyer's right to the Designated RA Capacity purchased hereunder.

With respect to the foregoing, the Parties shall use commercially reasonable efforts to minimize such penalties, fines and costs; provided, that in no event shall Buyer be required to use or change its utilization of its owned or controlled assets or market positions to minimize these penalties and fines. If Seller fails to pay the foregoing penalties, fines or costs, or fails to reimburse Buyer for those penalties, fines or costs, then Buyer may offset those penalties, fines or costs against any future amounts it may owe to Seller under this Confirmation.

# 4.9 Monthly RA Capacity Payment

Each Unit's

Monthly RA Capacity Payment shall be equal to the product of (a) the applicable Contract Price for that Monthly Delivery Period, (b) the Designated RA Capacity actually delivered by Seller to Buyer for the Monthly Delivery Period, and (c) 1,000; provided, however, that the Monthly RA Capacity Payment shall be prorated to reflect any portion of Designated RA Capacity that was not delivered pursuant to Section 4.6 at the time of the CAISO filing for the respective Showing Month. The final product of this Monthly RA Capacity Payment calculation shall be rounded to the nearest penny (i.e., two decimal places).

# RA CAPACITY PRICE TABLE

Contract Year/Month	RA Capacity Price (\$/kW-month)
January 2023 – December 2023	
January 2024 – December 2030	

## 4.10 Allocation of Other Payments and Costs

Seller may retain any revenues it may receive from the CAISO or any other third party with respect to any Unit for (a) start-up, shut-down, and minimum load costs, (b) capacity revenue for ancillary services, (c) energy sales, (d) any revenues for black start or reactive power services, or (e) the sale of the unitcontingent call rights on the generation capacity of the Unit to provide energy to a third party, so long as such rights do not confer on such third party the right to claim any portion of the RA Capacity sold hereunder in order to make an RAR Showing. LAR Showing, FCR Showing, or any similar capacity or resource adequacy showing with the CAISO or CPUC. Buyer acknowledges and agrees that all Availability Incentive Payments are for the benefit of Seller and for Seller's account, and that Seller shall receive, retain, or be entitled to receive all credits, payments, and revenues, if any, resulting from Seller achieving or exceeding Availability Standards. The Parties acknowledge and agree that any Non-Availability Charges are the responsibility of Seller, and for Seller's account and Seller shall be responsible for all fees, charges, or penalties, if any, resulting from Seller failing to achieve Availability Standards, However, Buyer shall be entitled to receive and retain all revenues associated with the Designated RA Capacity of any Unit during the Delivery Period (including any capacity or availability revenues from RMR Agreements for any Unit, Reliability Compensation Services Tariff, and Residual Unit Commitment capacity payments, but excluding payments described in clauses (a) through (c) above). In accordance with Section 4.9 of this Confirmation and Article Six of the Master Agreement, all such revenues received by Seller, or a Unit's SC, owner, or operator shall be remitted to Buyer, and Seller shall indemnify Buyer for any such revenues that Buyer does not receive, and Seller shall pay such revenues to Buyer if the Unit's SC, owner, or operator fails to remit those revenues to Buyer. If Seller fails to pay such revenues to Buyer, Buyer may offset any amounts

owing to it for such revenues pursuant to Article Six of the Master Agreement against any future amounts it may owe to Seller under this Confirmation.

#### 5. CAISO OFFER REQUIREMENTS

During the Delivery Period, except to the extent any Unit is in an Outage, or is affected by an event of Force Majeure that results in a partial or full Outage of that Unit, Seller shall either schedule or cause the Unit's Scheduling Coordinator to schedule with, or make available to, the CAISO each Unit's Designated RA Capacity in compliance with the Tariff, and shall perform all, or cause the Unit's Scheduling Coordinator, owner, or operator, as applicable, to perform all obligations under the Tariff that are associated with the sale of Designated RA Capacity hereunder. Buyer shall have no liability for the failure of Seller or the failure of any Unit's Scheduling Coordinator, owner, or operator to comply with such Tariff provisions, including any penalties or fines imposed on Seller or the Unit's Scheduling Coordinator, owner, or operator for such noncompliance.



7. OTHER BUYER AND SELLER COVENANTS

- 7.1. Buyer and Seller shall, throughout the Delivery Period, take all commercially reasonable actions and execute any and all documents or instruments reasonably necessary to ensure Buyer's right to the use of the Contract Quantity for the sole benefit of Buyer's RAR, LAR and/or FCR, as applicable, or that of a Subsequent Buyer under Article 9. Such commercially reasonable actions (neither Party shall be required to spend **Security Security Security** 
  - (a) Cooperating with and providing, and in the case of Seller causing each Unit's Scheduling Coordinator, owner, or operator to cooperate with and provide requested supporting
documentation to the CAISO, the CPUC, or any other Governmental Body responsible for administering RAR, LAR and/or FCR under Applicable Laws, to certify or qualify the Contract Quantity as RA Capacity and Designated RA Capacity. Such actions shall include, without limitation, providing information requested by the CAISO, the CPUC, or by an LRA having jurisdiction, to demonstrate for each month of the Delivery Period the ability to deliver the Contract Quantity from each Unit to the CAISO Controlled Grid for the minimum hours required to qualify as RA Capacity, and providing information requested by the CPUC, the CAISO or other Governmental Body having jurisdiction to administer RAR, LAR or FCR to demonstrate that the Contract Quantity can be delivered to the CAISO Controlled Grid, pursuant to "deliverability" standards established by the CAISO, or other Governmental Body having jurisdiction to administer RAR, LAR and/or FCR; and

(b) Subject to Section 4.4, negotiating in good faith to make necessary amendments, if any, to this Confirmation to conform this Transaction to subsequent clarifications, revisions, or decisions rendered by the CPUC, CAISO, FERC, or other Governmental Body having jurisdiction to administer RAR, LAR and FCR, in each case occurring after the Confirmation Effective Date, so as to maintain the benefits of the bargain struck by the Parties on the Confirmation Effective Date.

#### 7.2 Seller represents, warrants and covenants to Buyer that, throughout the Delivery Period:

- (a) Seller owns or has the exclusive right to the RA Capacity sold under this Confirmation from each Unit, and shall furnish Buyer, CAISO, CPUC or other jurisdictional LRA, or other Governmental Body with such evidence as may reasonably be requested to demonstrate such ownership or exclusive right;
- (b) No portion of the Contract Quantity has been committed by Seller to any third party in order to satisfy RAR, LAR, FCR or such analogous capacity obligations in CAISO markets, other than pursuant to an RMR Agreement between the CAISO and either Seller or the Unit's owner or operator;
- (c) No portion of the Contract Quantity has been committed by Seller in order to satisfy RAR, LAR, FCR, or analogous capacity obligations in any non-CAISO market;
- (d) Each Unit is connected to the CAISO Controlled Grid, is within the CAISO Control Area, or is under the control of CAISO;
- (e) The owner or operator of each Unit is obligated to maintain and operate each Unit using Good Utility Practice and, if applicable, General Order 167 as outlined by the CPUC in the Enforcement of Maintenance and Operation Standards for Electric Generating Facilities Adopted May 6, 2004, and is obligated to abide by all Applicable Laws in operating such Unit; provided, that the owner or operator of any Unit is not required to undertake capital improvements, facility enhancements, or the construction of new facilities;
- (f) The owner or operator of each Unit is obligated to comply with Applicable Laws, including the Tariff, relating to RA Capacity and, as applicable, RAR, LAR and/or FCR;
- (g) If Seller is the owner of any Unit, the respective cumulative sums of LAR Attributes, RAR Attributes, and FCR Attributes that Seller has sold, assigned or transferred for any Unit does not exceed that Unit's RA Capacity;
- (h) With respect to the RA Capacity provided under this Confirmation, Seller shall, and each Unit's SC is obligated to, comply with Applicable Laws, including the Tariff, relating to RA Capacity, and RAR, LAR and FCR;

- (i) Seller has notified the SC of each Unit that Seller has transferred the Designated RA Capacity to Buyer, and the SC is obligated to deliver the Supply Plans in accordance with the Tariff;
- (j) Seller has notified the SC of each Unit that Seller is obligated to cause each Unit's SC to provide to the Buyer, by the Notification Deadline, the Designated RA Capacity of each Unit that is to be submitted in the Supply Plan associated with this Agreement for the applicable period; and
- (k) Seller has notified each Unit's SC that Buyer is entitled to the revenues set forth in Section 4.10 of this Confirmation, and such SC is obligated to promptly deliver those revenues to Buyer, along with appropriate documentation supporting the amount of those revenues.

#### 8. CONFIDENTIALITY

Notwithstanding Section 10.11 of the Master Agreement, the Parties agree that Buyer may disclose information regarding this Transaction to any Governmental Body, the CPUC, the CAISO or any LRA having jurisdiction as necessary to support its LAR Showings, RAR Showings, and/or FCR Showings, as applicable, or to a Subsequent Buyer in connection with Article 9, and Seller may disclose information regarding this Transaction to the SC of each Unit in order for such SC to timely submit accurate Supply Plans. Buyer may also disclose to any Subsequent Buyer whatever information regarding this Transaction is commercially reasonable for such party to evaluate the re-sale; provided that any Subsequent Buyer agrees in writing to maintain the confidentiality of such information consistent with this Section 8. Upon request or demand of any third person or entity not a Party hereto to Buyer pursuant to the California Public Records Act for production, inspection and/or copying of confidential information regarding this Transaction, Buyer will as soon as practical notify Seller in writing via email that such request has been made. Seller will be responsible for taking whatever legal steps are necessary to prevent Buyer's release of such information to the third party. Seller acknowledges that Buyer is a public agency subject to the requirements of the California Public Records Act (Cal. Gov. Code section 6250 et seq.).

#### 9.

### **BUYER'S RE-SALE OF PRODUCT**

- (a) Buyer may re-sell all or a portion of the Contract Quantity of Product hereunder; provided, however, that (i) any Subsequent Buyer assumes all of Buyer's obligations and liabilities hereunder, and (ii) any such re-sale does not increase Seller's obligations or liabilities hereunder. Seller will, or will cause the Unit's SC, to follow Buyer's instructions with respect to providing such resold Product to Subsequent Buyers, to the extent such instructions are consistent with Seller's obligations under this Confirmation. Seller will, and will cause the Unit's SC, to take all commercially reasonable actions and execute all documents or instruments reasonably necessary to allow such Subsequent Buyers to use such resold Product in a manner consistent with Buyer's rights under this Confirmation. If Buyer incurs any liability to a Subsequent Buyer due to the failure of Seller or the Unit's SC to comply with this Confirmation, Seller will be liable to Buyer for the same amounts Seller would have owed Buyer under this Confirmation if Buyer had not resold the Product.
- (b) Buyer will notify Seller in writing of any resale of Product and the Subsequent Buyer no later than two (2) Business Days before the Notification Deadline for the Showing Month. Buyer will notify Seller of any subsequent changes or further resales no later than two (2) Business Days before the Notification Deadline for the Showing Month. Seller agrees, and agrees to cause the Unit's SC, to: (i) follow Buyer's reasonable instructions with respect to providing such resold Product to Subsequent Buyers of such resold Product; and (ii) take all commercially reasonable actions and execute any and all documents or instruments reasonably necessary to allow such Subsequent Buyers to use such resold Product.

(c) If CAISO or CPUC develops a centralized capacity market, Buyer will have exclusive rights to direct Seller to offer, bid, or otherwise submit the applicable Contract Quantity of Product for each day during the Delivery Period provided to Buyer pursuant to this Confirmation for re-sale in such market, and Seller and the Unit's SC shall comply with Buyer's direction and Buyer shall retain and receive all revenues from such re-sale. Seller agrees to take all commercially reasonable actions to assist Buyer with such re-sale, provided that Seller's obligation to assist shall not require modification of any of the commercial terms of this Confirmation.

#### 10. MARKET BASED RATE AUTHORITY

Seller agrees, in accordance with Federal Energy Regulatory Commission (FERC) Order No. 697, to, upon request of Buyer, submit a letter of concurrence in support of any affirmative statement by Buyer that this contractual arrangement does not transfer "ownership or control of generation capacity" from Seller to Buyer as the term "ownership or control of generation capacity" is used in 18 CFR Section 35.42. Seller also agrees that it will not, in filings, if any, made subject to Order Nos. 652 and 697, claim that this contractual arrangement conveys ownership or control of generation capacity from Seller to Buyer.

11. COLLATERAL REQUIREMENTS

[Signatures appear on the following page.]

Calpine Deal:

\_\_\_\_

### ACKNOWLEDGED AND AGREED TO AS OF THE CONFIRMATION EFFECTIVE DATE

Calpine Energy Services, L.P.

Marin Clean Energy, a California joint powers authority

Ву:	Ву:	
Name:	Name:	_
Title:	Title:	

Approved as to form:

Ву:	 	 
Name:	 	 
Title:	 	 

Calpine Deal:

### Appendix A

### Shown Unit Information

Name:	
Location:	
CAISO Resource ID:	
Unit SCID:	
Unit NQC:	
Unit EFC:	
Resource Type:	
Resource Category (MCC 1, 2, 3 or 4):	
Flexible Capacity Category (1, 2 or 3):	
Path 26 (North or South):	
Local Capacity Area (if any, as of Confirmation Effective Date):	
Deliverability restrictions, if any, as described in most recent CAISO deliverability assessment:	
Run Hour Restrictions:	



November 4, 2021

TO:	MCE Technical Committee
FROM:	Lewis Bichkoff, Sr. Power Procurement Manager Jenna Tenney, Marketing and Communications Manager
RE:	MCE 2022 Operational Integrated Resource Plan (Agenda Item #06)
ATTACHMENT:	MCE 2022 Operational Integrated Resource Plan

Dear Technical Committee Members:

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

The OIRP has four primary purposes:

- 1. Quantify resource needs, in conjunction with load expectations, over the Planning Period;
- 2. Prioritize resource preferences and articulate 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 2022 OIRP has a planning period of 2022 through 2031, 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 2022 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 our Energy Storage Program, Demand Flex Program, Workforce, Education & Training Program, and increased focus on vulnerable customer populations including those in disadvantaged communities.

The 2022 OIRP affirms MCE's goal of providing 100% of its Light Green portfolio with renewables, large hydroelectric and ACS energy by 2022, and 85% of its Light Green portfolio with renewables by 2029. It also affirms MCE's goal for such renewables to be comprised entirely of Portfolio Content Category 1 ("PCC 1") products by 2022, in order to mitigate the greenhouse gas accounting impacts of Assembly Bill 1110 on PCC 2 products.

MCE's 2022 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 570 MW of new, nameplate generation capacity that MCE plans to meet with:

- At least 100 MW of new solar paired with 75 MW of five-hour storage;
- 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;<sup>1</sup>
- At least 175 MW of standalone four-hour storage; and
- 110 MW of new solar paired with 60 MW of four-hour storage.

The 339 MW of standalone and hybrid storage described above will contribute towards the 585 MW of wholesale storage capacity MCE plans to procure to complement its PCC 1 renewable energy targets.

On a related note, the OIRP also highlights MCE's goal to structure a RA portfolio with non-fossil resources comprising 50% of the Net Qualifying Capacity by 2030. To this end, MCE launched a Clean RA Request for Offers ("RFO") in April 2020 and long duration storage RFO in June 2021, resulting in MCE further pursuing clean RA technologies, such as green hydrogen generation and carbon-free long duration storage through follow-on procurement efforts.

### Recommendation:

Approve MCE's 2022 Operational Integrated Resource Plan.

<sup>&</sup>lt;sup>1</sup> Defined by the CPUC in Decision 21-06-035 as having no on-site emissions or being eligible under the Renewables Portfolio Standard program with at least an 80% capacity factor. The resource may not be use limited or weather dependent, and storage projects do not qualify.





# I. Executive Summary

As California's first Community Choice Aggregation (CCA) program, MCE is a groundbreaking, not-for-profit, public agency that has been setting the standard for energy innovation in its member communities since 2010. MCE offers more renewable energy at cost-competitive rates, significantly reducing energy-related greenhouse gas (GHG) emissions and enabling millions of dollars of reinvestment in local energy programs. MCE is a load-serving entity that serves more than 1,200 MW of peak load. MCE provides electricity service to more than 540,000 customer accounts and more than one million residents and businesses in 36 member communities across four Bay Area counties: Contra Costa, Marin, Napa, and Solano. For more information about MCE, visit mceCleanEnergy.org.

MCE's mission is to address climate change by reducing energy-related GHG emissions by providing renewable energy and energy efficiency services at cost-competitive rates. MCE offers almost twice the amount of renewable energy than traditional electricity service, while delivering economic and workforce benefits that create more equitable communities.



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.

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

## **MCE Energy Services**

MCE's standard service, <u>Light Green</u>, currently represents 97.8% of MCE customer accounts (95.9% of load) and has consisted of at least 60% renewable energy since 2017, meeting state goals 13 years ahead of schedule (see figure 2 below). 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 below).

MCE offers two 100% renewable service options: <u>Deep Green</u>, sourced solely from California wind and solar energy and representing 2.2% of MCE accounts (4.1% of load); and <u>Local Sol</u>, sourced exclusively from local solar energy produced from within MCE's service area and representing 0.04% of MCE accounts (0.02% of load).



MCE Trendline for Renewable and GHG–Free Content

Figure 2: MCE trendline for renewable and GHG-free content<sup>1</sup>

### **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 energy efficiency, energy storage, electric vehicle charging and incomequalifying electric vehicle, solar and heat pump hot water heater rebates. Through these programs, MCE has:

<sup>&</sup>lt;sup>1</sup> As reported to the California Energy Commission via the Power Source Disclosure Program

- Launched a \$6 million <u>resiliency</u> fund to help mitigate the impacts of grid outages which threaten the community's safety, health, and welfare, and disproportionately affect vulnerable populations;
- Saved our customers \$3.96 million in <u>energy efficiency</u> rebates since 2013;
- Procured and helped develop 49 MW of new renewable projects in MCE's service area including <u>MCE Solar Charge</u>, an 80-kW solar carport system at MCE's San Rafael office with ten, Level 2 electric vehicle charging ports available to MCE staff and the public;
- Distributed \$725,000 for <u>solar rebates</u> since 2012 for 653 income-qualified solar installations equal to 1300 kW;
- Spent \$250,000 to <u>distribute 100 portable</u>, <u>off-grid batteries</u> in partnership with regional Centers for Independent Living at no cost to recipients;
- Provided more than \$1.5 million in funding for <u>over 1,000 electric vehicle charging ports</u> throughout MCE's service area; and
- Provided <u>rebates</u> for homeowners of properties destroyed in the 2017 and 2018 Napa County fires to include energy efficiency and electrification measures in their new homes.

## MCE's Equity Commitment

MCE has been <u>committed to environmental justice</u> since its founding 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 through multiple programs that support customers who have been underserved by traditional energy programs, or are most impacted from the front-line effects of fossil fuel generation. These programs include the <u>MCE Cares Credit</u> <u>Program</u> which is expected to offer customers ~\$2.5 million in bill relief, and MCE's <u>Low-Income</u> <u>Families and Tenants Pilot Program</u> which helps families reduce pollution impacts and increase health and prosperity. MCE's commitment to <u>energy equity</u> is reflected in:

- Partnerships with CBOs including schools and programs in support of underserved and vulnerable individuals;
- Strategic recruiting and hiring practices such as targeted job postings, partnerships with community-based organizations (CBOs), education and employment organizations, physical attendance at job recruitment fairs, and blind résumé reviews; and
- MCE's programs and policies described in Sections III and IV including:
  - o <u>Distributed Energy Resources</u>
  - o <u>Demand Response and Flexibility</u>
  - o Behind-the-Meter Energy Storage and Resilience
  - o Green Access and Community Solar Connection
  - o <u>Community Power Coalition</u>
  - o <u>COVID-19 Customer Support</u>
  - o <u>Equity In Power Purchasing</u>
  - Sustainable Workforce and Diversity Policy
  - o Workforce Education & Training Program, and
  - o <u>Supplier Diversity</u>.

Over MCE's 11 years of operation, these programs have:

- Contributed ~\$35 million in local renewable energy development;
- Invested more than \$3 million directly into workforce development in MCE's service area;
- Supported more than 2,250 work hours and trained 60 individuals; and

- Generated <u>strong community partnerships</u> with workforce development agencies such as RichmondBUILD, Marin City Community Development Corporation, Rising Sun Center for Opportunity, Future Build, Association for Energy Affordability, Strategic Energy Innovations, and North Bay Workforce Alliance.
- Overall, since 2010 MCE has contributed more than \$180 million in community reinvestment through cost savings (~\$68 million), local renewable energy projects (~\$62 million), energy efficiency (~\$12 million), energy resiliency (~\$11 million), solar incentives (~\$10 million), local employment and vendor contracts (~\$9 million), and customer programs (~\$8 million)





### **MCE Energy Procurement**

In 2020, MCE procured approximately 5.2 million MWh of electricity for its customers.<sup>2</sup> MCE projects that its 2031 loss-adjusted load will be approximately 6 million MWh. MCE anticipates that 100% of its total 2022 retail sales will be sourced from Power Content Category 1 (PCC 1) renewables, large hydroelectric,<sup>3</sup> and Asset Controlling Supplier (ACS) energy.<sup>4</sup> PCC 1 power is produced from renewable resources located within California. As mentioned above and shown in table 1 below, MCE's Light Green service option is expected to be 95% GHG-free by 2023, and is expected to reach 85% renewable energy by 2029.<sup>5</sup> MCE's procurement strategy through 2031 includes:

<sup>2</sup> In 2020, MCE provided its customers with 5,262,209 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.

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

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

<sup>5</sup> MCE's 2021 OIRP portfolio target was 95% by 2022, but this has now been changed to 95% by 2023 due to ongoing drought conditions across Western North America and lower than expected hydroelectric production availability.

- Procuring at least 332 MW of incremental net qualifying system capacity<sup>6</sup> by 2026 to meet the California Public Utilities Commission's (CPUC) mid-term reliability Integrated Resource Planning (IRP) mandate. When translating the 332 MW of net qualifying capacity into a wholesale procurement amount, MCE expects to procure more than 570 MW of new, wholesale capacity, which will include renewables paired with storage, standalone storage, and clean firm/baseload capacity. This procurement will be in addition to the 810 MW of new California renewables that MCE has already procured. To meet the CPUC mid-term reliability mandate, MCE plans to procure:
  - At least 100 MW of new solar paired with 75 MW of five-hour storage;
  - 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 175 MW of standalone four-hour storage; and
  - o 110 MW of new solar paired with 60 MW of four-hour storage.
- The 339 MW of standalone and hybrid storage described above will contribute toward the 585 MW of wholesale storage capacity MCE plans to procure to complement its PCC1 renewable energy targets.
- Targeting a 2030 Resource Adequacy (RA) portfolio with non-fossil resources comprising 50% of the Net Qualifying Capacity.

10-Year Light Green Portfolio Targets (%)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PCC 1 Renewable	60%	60%	60%	65%	70%	75%	80%	85%	85%	85%
PCC 2 Renewable	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Large Hydro + ACS	40%	40%	40%	35%	30%	25%	20%	15%	15%	15%
Total Renewable	60%	60%	60%	65%	70%	75%	80%	85%	85%	85%
Total Renewable + Large Hydro + ACS	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GHG-Free Equivalent	90%	95%	95%	95%	95%	95%	95%	95%	95%	95%

### **Table 1:** MCE Light Green portfolio targets<sup>7</sup>

<sup>&</sup>lt;sup>6</sup> Net qualifying capacity measures the regulatory compliance value of the procurement, which is oftentimes less than the wholesale number of MW procured. As such, MCE will procure significantly more than 332 MW in order to meet the CPUC mandate.

<sup>&</sup>lt;sup>7</sup> Actual content percentages may differ from projections if resource availability or market conditions preclude costeffective 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 for the express purpose of empowering 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 2022 OIRP (this document) has a planning period of 2022 through 2031, 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 by staff annually and submitted for approval to MCE's Technical Committee, which includes a subset of MCE Board members. Approval is made in consideration of applicable regulatory requirements, MCE's resource planning policies, energy market conditions, anticipated changes in electricity consumption, planned inclusion of new member communities, ongoing procurement activities, and any other considerations that may affect the manner in which MCE carries out its resource planning activities.

MCE's OIRP has four primary purposes:

- To quantify resource needs, in conjunction with load expectations, over the planning period<sup>8</sup>;
- 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 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. 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 Community Choice Aggregators.

<sup>&</sup>lt;sup>8</sup> Within this OIRP, resources include renewable energy, large hydroelectric energy, Asset Controlling Supplier energy, energy storage, Resource Adequacy, hedges against CAISO load payments, behind-the-meter generation and/or storage, demand response, and energy efficiency.

# **III. MCE Customers and Load Forecast**

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



MCE Net Load Forecast: 2022-2031

### Figure 4: MCE loss-adjusted load forecast, 2022-2031<sup>9</sup>

### **Enrolled Customers**

GWh

MCE has been serving customers since 2010, and now supports a peak load of approximately 1,200 MW. MCE provides electricity service to approximately 540,000 customer accounts and more than one million residents and businesses in 36 member communities across four Bay Area counties: Contra Costa, Marin, Napa, and Solano. MCE has an average customer participation rate of 86.5% 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, please see figure 5. Figures 6 and 7 provide a breakdown of customer enrollment rates by community.

<sup>&</sup>lt;sup>9</sup> MCE is responsible for procuring the electricity that is lost to the distribution system. For this reason, MCE must procure towards its "loss-adjusted load," which is approximately 106% of its retail sales.

The scope of this 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 please refer to <u>Appendix B</u> at the end of this document.



### Figure 5: MCE customer accounts and load





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 (residential, commercial, etc.). 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 electric vehicle (EV) charging, 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% California 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 would prefer to purchase power exclusively from within MCE's service area.

#### Table 2: MCE customer energy choices

#### LIGHT GREEN SERVICE

Default Option

97.8% of MCE accounts, 95.9% of load

- 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, 4.1% of load

- 25 of MCE's member municipalities have chosen to enroll in MCE Deep Green
- 100% RPS-qualifying renewable energy (California solar and wind only)
   Half of the premium charged to customers is allocated to MCE's
- Half of the premium charged to customers is allocated to MCE's Local Renewable Energy and Program Development Fund

#### LOCAL SOL SERVICE

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

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

#### 2020 Electric Power Generation Mix\*

Specific Purchases	MCE Light Green	MCE Deep Green	MCE Local Sol
Renewable	61%	100%	100%
Biomass & Biowaste	2%	0%	0%
Geothermal	6%	0%	0%
Eligible Hydroelectric	3%	0%	0%
Solar	23%	50%	100%
Wind	27%	50%	0%
Coal	0%	0%	0%
Large Hydroelectric	36%	0%	0%
Natural Gas	0%	0%	0%
Nuclear	1%	0%	0%
Other	0%	0%	0%
Unspecificed Sources of Power **	1%	0%	0%
Total	100%	100%	100%

#### Percent of Total Retail Sales (kWh)

\*As reported to the California Energy Commission's Power Source Disclosure Program. MCE and PG&E data is subject to an independent audit and verification that will not be completed until October 1, 2021. 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 2020 electric power generation mix

### **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, electric vehicles, and energy efficiency.

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

### **Demand Response and Flexibility**

In April 2021, MCE launched the <u>Peak Flex Program</u> (formerly Demand FLEXmarket), a first-of-itskind marketplace program platform aimed at shifting energy use in its service area away from times of extreme demand. Created in partnership with Recurve, the Peak Flex Program provides tools to measure hourly reductions in energy use that will allow MCE to compensate businesses working locally with customers for energy savings during peak demand hours.

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

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

### **Behind-the-Meter Energy Storage and Resilience**

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

In 2020, MCE launched its <u>Energy Storage Program</u> to deploy 15 MWh of customer-sited battery storage systems which 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, coupled with gap funding and performance-based payments provided through MCE's \$6 million Resiliency Fund.

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

To extend the impact of this program, MCE is working with the Marin Community Foundation. Through a two-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 emergency services to vulnerable communities during planned or unplanned outages.

## **Transportation Electrification**

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

MCE has identified workplace EV charging as an opportunity to shift the demand of the 43,389 (and growing) EV drivers in its service area to hours of the day when energy is frequently cheaper and cleaner. <u>MCE Solar Charge</u>, a public electric-vehicle charging station that opened in 2019 at MCE's San Rafael office, demonstrates that vision to MCE's staff and customers.

SINCE 2018 850+ LEVEL 2 CHARGING PORTS INSTALLED 56% OF CHARGING STATIONS IN MCE'S SERVICE AREA 320+ PLANNED OR UNDER CONSTRUCTION

Since 2018, MCE has supported or funded 1,176 Level 2 charging

ports for workplaces or multifamily properties. More than 850 ports have been installed — equivalent to 56% of all public Level 2 charging ports in the four counties MCE serves — and more than 320 ports under planning and construction. MCE is coordinating with PG&E on their EV Charge Network program and providing a supplemental rebate to customers who participate in that program. More than 69% 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 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 launched a <u>rebate program for income-qualified customers</u> 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 170 customers purchase or lease a new EV and will expand in fiscal year 2021/2022 to include used EVs as well.

# **Energy Efficiency**

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

MCE also invests in multiple workforce development initiatives to encourage the growth of greencollar jobs. Through the approval of its <u>Energy Efficiency Business Plan</u>, MCE has been able to allocate non-resource dollars to fund workforce development initiatives beyond the Multifamily Energy Savings Direct Install service. MCE is also coordinating closely with PG&E to maximize community benefits.



Figure 9: MCE cumulative energy efficiency impacts (GWh)

## **Net Energy Metering and Rooftop Solar Rebates**

Through its <u>Net Energy Metering (NEM) program</u>, 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 50,000 customers (9.3% of all MCE accounts) with aggregate-installed renewable generating capacity of approximately 483 MW.

Beyond NEM, <u>MCE incentivizes local rooftop solar development for low-income customers</u>. MCE has a long-standing partnership with California's Single Family Affordable Solar Housing (SASH) program administrator, GRID Alternatives. MCE contributes \$900 per solar installation to low-income, single-family customers who qualify for GRID's program or are California Alternate Rates for Energy (CARE) customers. By leveraging multiple sources of funding, GRID Alternatives installs these systems in disadvantaged communities at little to no cost for the customer. In addition to MCE's single-family solar rebate program, MCE offers \$0.41 per watt (AC) rebate to low-income, multifamily properties that install solar that benefits their tenants. From 2012-2021, MCE allocated \$725,000 toward these two rebate programs, and has supported the installation of 287 residential solar photovoltaic systems on low-income multifamily homes. These represent 800 kW of new, local renewable capacity that helps reduce monthly energy bills for low-income families.

## **Energy Equity**

### **Green Access and Community Solar Connection Programs**

MCE is collaborating with the CPUC, IOUs, and other CCAs to develop <u>community solar</u> <u>programs</u> for customers in disadvantaged communities (DACs). These programs will be supported by the development of an additional 5.92 megawatts of new, local clean energy capacity.

The Green Access program will supply 100% renewable power to customers located in a disadvantaged community with an accompanying 20% bill discount. 2,900 customers were automatically enrolled beginning in September 2021, and MCE will prioritize customers who live in the highest scoring disadvantaged communities, are currently participating in either the CARE or FERA discount program, and who have the need for 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. At least 50% of the program's participation capacity will be reserved for customers who are enrolled in CARE or Federal Emergency Relief Administration (FERA) discount programs. Customers will be eligible to enroll in this program as soon as the solar resources come online, potentially as early as the end of 2022.

MCE estimates it will be able to provide almost 2,900 customers with bill discounts and access to more renewable energy.

#### **Community Power Coalition**

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

- Expand access to renewable energy services,
- Accelerate the transition to a clean energy future through workforce development training, and
- Develop inclusive programs and policies at MCE.

Adding these voices and their questions to the Community Power Coalition working group is one way to deepen MCE's understanding about the groups' challenges and the measures or types of support that are needed. MCE's Community Power Coalition connects MCE to the community, and offers expert advice on the needs of constituents and how MCE can best support underserved customers and environmental equity through its programs, policies, and procurement.

### **COVID-19 Customer Support**

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

MCE's on-going COVID relief efforts include <u>suspension of collections</u>; direct outreach to customers to encourage enrollment in <u>existing discount and utility bill assistance programs</u>; an education and awareness program to spread the word about community resources and programs for financial assistance; and <u>free EV charging</u> at MCE's San Rafael office. MCE also recently launched two new webpages providing a comprehensive list of COVID support resources for <u>residential</u> and <u>small business</u> customers.

### Equity in Power Purchasing

MCE's <u>2021 Open Season solicitation</u> was the first year that suppliers were encouraged to consider community benefits and equity metrics when submitting offers. Some of the optional elements that MCE is soliciting in offers as part of this Open Season include:

- 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 Disadvantaged Community, or employing workers living in a designated Disadvantaged Community; 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 Power Purchase Agreement (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 Open Season, Green Access, and Community Solar Connection PPAs, and will continue to be an MCE procurement requirement.

## Workforce and Supplier Diversity

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

- To the extent allowed by state law, MCE seeks to create market incentives and partnerships to encourage diversity and a sustainable workforce through its support for:
- Fair compensation in direct hiring, renewable development projects, customer programs, internships and procurement services;
- Development of locally generated renewable energy within the MCE service area;
- Direct use of union members from multiple trades;
- Quality training, apprenticeship, and pre-apprenticeship programs;
- Direct use of businesses local to the MCE service area;
- Development of California-based job opportunities;
- Business and workforce initiatives located in low-income and disadvantaged communities;
- Direct use of disabled Veteran-owned Enterprises and LGBT-owned Business Enterprises;
- Direct use of green and sustainable businesses; and
- Hiring practices that promote diversity in the workplace.

With the passage of Senate Bill 255, Community Choice agencies such as MCE are now included in the CPUC's General Order (GO) 156. Commonly referred to as "Supplier Diversity," this program encourages load serving entities to increase their procurement from diverse businesses such as those owned by women, LGBTs, or minorities. To this end, and among other efforts, MCE has held a free informational workshop named "Certify & Amplify" since 2019. This annual workshop seeks to educate the local business community on the opportunities of certifying as a GO 156 eligible business, making them eligible to help utilities meet quotas through California's contracting clearinghouse. Staff once again hosted a Certify & Amplify event in 2021, complimenting the efforts outlined in MCE's first ever Supplier Diversity report, submitted to the CPUC on March 1, 2021.

### Workforce Education & Training (WE&T)

Growing the green economy, supporting local contractors, and providing access to workforce development opportunities are core to MCE's mission. Energy efficiency (EE) lowers energy consumption, saves customers money, and reduces greenhouse gas pollution. Importantly, improving the built environment through EE also creates strong job opportunities, including among populations facing additional barriers to workforce entry. Encouraging the creation of

local green-collar job opportunities is rooted in the history of MCE efforts to create more equitable communities, while also reducing greenhouse gas emissions through renewable energy projects and electrification of the built environment and the transportation sector. For example, MCE has:

- Partnered with the Marin City Community Development Corporation in 2012 to train 62 disadvantaged community members and connect them to solar installation and energy efficiency jobs.
- Partnered with RichmondBUILD in 2015 to help students develop construction, numeracy, and literacy skills, and later connect them with related jobs for MCE Solar One and an LED retrofit project for city streetlights.
- Partnered with Rising Sun Energy Center in 2016 to train youth to provide no-cost energy and water-saving assessments in the cities of Richmond, El Cerrito, and San Pablo.
- 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 (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 the North Bay Workforce Alliance in 2018 to hire trainees for multiple largescale solar installations in American Canyon.
- In all MCE communities, new renewable energy project developers must certify that 100% of employees hired during construction are paid a prevailing wage, and that at least 50% of the construction work-hours from its workforce (including contractors and subcontractors) are obtained from permanent residents who live within the same county.

Most recently, MCE launched the Workforce, Education, and Training (WE&T) program to create a geographically diverse pool of training partners able to provide job seekers with the skills necessary to be competitive in the EE 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 onramp for job seekers, the WE&T program concurrently allows vetted contractors working in MCE's service area to be matched with these pre-qualified, 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.

This effort compliment's MCE's participation in the regional High Roads Training Partnership (HRTP) being led by the Rising Sun Center for Opportunity starting in 2021.

### **Creating Energy Efficiency Jobs**

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

With engagement from local partners, community colleges, and the existing contractor workforce, MCE is in the process of developing a mentorship and internship program to achieve the following goals:

- Upgrade the technical expertise of the existing contractor workforce on energy efficiency and electrification technology;
- Fund the training of job-seekers;
- Match qualified job-seeker trainees with trained contractors and pay for a local internship in a "learn and earn" model; and
- Provide project site opportunities where the mentor and intern can install efficiency measures while helping MCE customers increase the efficiency, health, and safety of their homes and businesses.

Long term, MCE hopes to solidify this trainee-to-employee pipeline so it can continue investing in 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 has included MCE staff attending CPUC symposiums and hosting annual "<u>Certify & Amplify</u>" 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 supplier 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 strengthen equity in the electric service provider sector. The bill requires CCAs to submit an annual plan to the CPUC reporting on agency procurement from small, local, and diverse business enterprises, as well as reporting on diverse suppliers. MCE was supportive of this bill and will submit its plan and report to the CPUC when requested. MCE continues to explore ways in which it can ensure that diverse communities have access to MCE's contracting opportunities, within the constraints of Proposition 209.

In 2021, MCE submitted its first <u>Supplier Diversity Report</u> to the California Public Utilities Commission outlining MCE's voluntary work.

# **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 period, MCE must take into account numerous regulatory requirements, some of which are very briefly described below. For more detailed information on the regulations underlying this OIRP, please see <u>Appendix C</u>.

### 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.

### **Resource Adequacy**

Resource Adequacy (RA), a California program jointly administered by the California Energy Commission (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 will be assigned to a Central Procurement Entity starting in 2023. In addition, per CPUC Decision 19-11-016, LSEs are required to procure "Incremental System Capacity," which is RA capacity that is in addition to the identified resources already on the system, or expected to be on the system, and capable of

delivering energy. Separate, but related to LSE RA requirements, in June 2021, the CPUC directed all jurisdictional LSEs to collectively procure 11,500 MW of new, clean capacity to be online between 2023 and 2026. Of this 11,500 MW, MCE is responsible for procuring 332 MW of net qualifying capacity, which translates to more than 570 MW of new, wholesale capacity. This capacity is expected to come from approximately 100 MW of solar paired with 60 MW of five-hour 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, The balance is expected to come from a projects representing approximately 110 MW of solar paired with 60MW of at least eight hours.

#### 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). The PCL is an LSE-specific document that shows the breakdown of power resource types for each of the LSE's energy products used to serve retail load, as well as a breakdown of resource types for the overall California grid. The PCL is distributed to customers each summer.

## **MCE Light Green Procurement Targets**

### 95% GHG-free by 2023 and 85% renewable by 2029

Reducing GHG emissions is at the heart of MCE's mission. With this in mind, MCE is structuring a Light Green portfolio that will be approximately 95% GHG-free in 2023 and beyond, subject to market and regulatory changes (see table 3).<sup>10</sup> 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 energy, the vast majority of which is large hydroelectric.<sup>11</sup> RPS-qualifying renewable energy will continue to account for at least 60% of MCE's Light Green portfolio and will ramp up to 85% by 2029. MCE is planning to phase out its use of Portfolio Content Category 2 (PCC 2) renewables by 2022 and will ramp up its use of Portfolio Content Category 1 (PCC 1) renewables to make up the difference.<sup>12</sup> This steady phase-out of PCC 2 renewables is a decision by MCE to mitigate the impact of AB 1110 implementation (explained in <u>Appendix C</u>), where PCC 2 renewables are assigned the GHG emissions of the associated substitute power.

<sup>&</sup>lt;sup>10</sup> MCE's 2021 OIRP portfolio target was 95% by 2022, but this has now been changed to 95% by 2023 due to ongoing drought conditions across Western North America and lower than expected hydroelectric production availability.

<sup>&</sup>lt;sup>11</sup> The California Air Resources Board (CARB) recognizes three asset-controlling suppliers: Bonneville Power Administration, Powerex, and Tacoma Power. On its website, CARB publishes the emissions factors for each of these three suppliers: <u>https://ww2.arb.ca.gov/mrr-acs</u>.

<sup>&</sup>lt;sup>12</sup> PCC 1 renewable energy is produced by generating facilities with a first point of interconnection within a California Balancing Authority (CBA), or by facilities that schedule electricity into a CBA, and without substitute energy. PCC 2 renewable energy is produced by generating facilities located outside of any CBA, where the generation output is also sunk outside of a CBA, and substitute energy is imported into a CBA within the same calendar year. For more information and context, please see <u>Appendix C</u>.

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,<sup>13</sup> and MCE procures Asset Controlling Supplier (ACS) energy that includes relatively small portions of GHG-emitting power. A significant portion of the large hydroelectric power in the Pacific Northwest is embedded in ACS, and MCE has determined that the benefit of access to this hydroelectric supply outweighs the downside of taking these embedded emissions.

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10-Year Light Green Portfolio Targets	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PCC 1 Renewable	60%	60%	60%	65%	70%	75%	80%	85%	85%	85%
PCC 2 Renewable	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Large Hydro + ACS	40%	40%	40%	35%	30%	25%	20%	15%	15%	15%
Total Renewable	60%	60%	60%	65%	70%	75%	80%	85%	85%	85%
Total Renewable + Large Hydro + ACS	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GHG-Free Equivalent	90%	95%	95%	95%	95%	95%	95%	95%	95%	95%

 Table 3: MCE Light Green portfolio targets<sup>14</sup>

## **Energy Storage**

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

For the reasons outlined above, MCE has committed to develop 585 MW of wholesale (i.e., in front of the meter) storage capacity over the course of the planning period. Some of this storage procurement will be applied towards MCE's 332 MW of net qualifying capacity to meet its mid-

<sup>&</sup>lt;sup>13</sup> Technology-specific emissions factors can be found in table A.III.2 of the 2014 IPCC report available at: <u>https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc wg3 ar5 annex-iii.pdf</u>.

<sup>&</sup>lt;sup>14</sup> Actual content percentages may differ from projections if resource availability or market conditions preclude costeffective 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.

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.

With respect to long-duration storage, the CPUC's 2020 Integrated Resource Plan identified a need for between 973 MW and 1,605 MW of long-duration storage by 2026.<sup>15</sup> In 2021, the CPUC deviated from the Reference System Plan and mandated jurisdictional LSEs collectively procure a minimum of 1,000 MW of long-duration storage by 2026.<sup>16</sup> MCE's share of this long-duration storage is 29 MW.

## Joint CCA Procurement Efforts

In response to the CPUC's analysis in the Reference System Plan, MCE and seven other CCAs (the Joint CCAs) formed <u>California Community Power</u>, a new Joint Power Authority (JPA) for the purpose of combining the agencies' buying power to procure new, cost-effective clean energy and reliability resources. The Joint CCAs issued a Request For Information (RFI) for long-duration storage projects in fall 2020 to procure over 500 MW of long-duration storage. This RFI defined long-duration storage resources as those with the capability to discharge at full capacity for at least eight hours. This was the largest known single procurement effort for this amount of long-duration storage. Fifty-one developers submitted offers with over 300 unique pricing options and 18 different long-duration storage technologies.

The CCAs forming California Community Power represent 2.6 million customer accounts and 6.6 million people across more than 140 municipalities spanning from Humboldt County to Santa Barbara County. The CCAs serve a combined annual load of 32,600 gigawatt hours, which is equal to about 40% of PG&E's annual electric load. Benefits of the new JPA include enhanced negotiating power, larger renewable and storage project procurement, shared risk mitigation, and increased opportunities for innovation.

In June 2021, MCE partnered with three other CCAs to launch the <u>California Community Choice</u> <u>Financing Authority</u> (CCCFA), a first-of-its-kind, renewable energy prepay bond agency. CCCFA enables MCE to use a prepay structure that has historically been used to benefit the fossil fuel industry, primarily through natural gas transactions, which has decreased the competitiveness of renewable contracts. Using prepay bonds to lower the cost of renewable energy procurement can reduce costs up to 10%, helping MCE shift ratepayer dollars to deliver more, and cheaper, local clean energy programs.

### **Non-Fossil Resource Adequacy**

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

<sup>&</sup>lt;sup>15</sup> In CPUC Decision 20-03-028, the 973 MW long-duration storage target is associated with a Reference System Plan that limits system-wide GHG emissions to 46 MMT by 2030, whereas the 1,605 MW long-duration storage target is associated with a Reference System Plan that limits system-wide GHG emissions to 38 MMT by 2030. <sup>16</sup> CPUC Decision 21-06-035.

Qualifying Capacities are significantly changed over the course of the planning period, MCE may have to adjust its non-fossil RA target.

On April 6, 2020, MCE issued our first Clean Resource Adequacy Request for Offers (RFO) for suppliers offering creative and non-fossil fuel technologies to supply clean RA, such as green hydrogen generation, renewable natural gas, and carbon-free/neutral long duration storage. MCE evaluated the various bids submitted with an emphasis on pairing renewable projects with innovative technologies while continuing to reduce GHG emissions, increase grid reliability, and further develop community resources to support economic growth and clean energy jobs. This RFO resulted in MCE further pursuing some of these technologies in the solicitation through follow-on procurement efforts.

As part of the California Clean Resource Adequacy Coalition, MCE cosigned a letter to Chris Holden, Chair of the Assembly Utilities and Energy Committee, in October of 2020. This letter outlined several immediate steps for state regulators to increase the clean resources supporting grid reliability. These steps would increase grid resiliency and reliability by providing regulatory support for procurement of clean energy resources including batteries, behind-the-meter storage, demand response, and renewable hybrid resource technologies.

Lastly, in 2020, MCE became a North American Energy Standards Board-registered purchasing and selling entity and an official importer of record, making it easier to import clean energy from out of state.

# **V. Resources**

## **Existing Resource Commitments**

Table 4 lists MCE's 76 purchase contracts for renewable energy, large hydroelectric/ACS energy, and CAISO load hedging (via fixed-price forward contracts) in 2022 and beyond. Table 4 excludes MCE's numerous RA-only contracts, and it is only a snapshot in time. MCE's portfolio of contracts is continually evolving.

Counterparty 🗸	Generation Facility 🗾 👻	Generation Technolo	Contract MW 💌	Term 👻	Annual GW 👻	Generation Locatic 🗸
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
Byron Solar Farm, LLC	Byron Solar Farm (FIT)	Solar PV	3	2022-2042	8	Contra Costa,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 + 55 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	2022-2041	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
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

#### Table 4: MCE portfolio of resources as of 8/25/2021<sup>17</sup>

<sup>17</sup> Table 4 excludes MCE's RA-only contracts but includes all other purchase contracts

Counterparty	Generation Facility	Generation Technology	Contract MW	Term	Annual GWh	<b>Generation Location</b>
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	29	2022-2022	165-180	Colusa, CA
Pacific Gas & Electric Company	Multiple	PCC1	N/A	2021-2022	30-300	CA, AZ, NV
NextEra	Multiple	PCC1	N/A	2020-2022	183-229	CA
Powerex Corp.	Multiple	PCC1	N/A	2021-2023	50-100	British Colombia, Canada
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
NextEra	Green Power Wind	Wind	17	2019-2023	25	Riverside, CA
TGP Energy Management, LLC	Multiple	PCC1	N/A	2018-2022	300	CA, AZ
Large Hydroelectric / ACS						
Bonneville Power Administation	BPA ACS	BPA ACS	25	2022-2022	219	Pacific Northwest
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
Tenaska Power Services Co.	Middle Fork / Ralston	Large Hydro	210	2018-2022	300	Placer, CA
Shell Energy North America	Multiple	Large Hydro	N/A	2024-2024	200	CA
Fixed Price Forward Contracts						
Morgan Stanley Capital Group	N/A	N/A	N/A	2021-2022	100	N/A
Morgan Stanley Capital Group	N/A	N/A	N/A	2021-2022	231	N/A
Exelon Generation Company, LLC	N/A	N/A	N/A	2020-2022	536	N/A
Exelon Generation Company	N/A	N/A	N/A	2021-2025	73-100	N/A
Morgan Stanley Capital Group	N/A	N/A	N/A	2021-2022	464	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
Shell Energy North America	N/A	N/A	N/A	2019-2022	70-420	N/A
NextEra	N/A	N/A	N/A	2023-2023	621	N/A

## **Projected 2021 Resource Mix**

As shown in figure 10 below, MCE anticipates that 92% of its total 2022 retail sales will be sourced from renewables, large hydroelectric and Asset Controlling Supplier (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 2022 estimated resource mix

#### **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 above, MCE has established procurement targets for renewable energy, large hydroelectric and ACS, and established targets for planning reserves. To the extent that MCE's energy needs are not fulfilled through the use of renewable, large hydroelectric and ACS, it should be assumed that such supply will be sourced from CAISO system power, which represents energy purchases from the wholesale market that are not directly associated with specific generators.

#### **Renewable Resources**

MCE plans to provide Light Green customers with energy that is at least 60% renewable through 2024 and 85% renewable by 2029. Importantly, MCE plans to change the underlying composition of this renewable energy by eliminating its use of PCC 2 renewables and relying completely on PCC 1 renewables starting in 2022. MCE will also procure PCC 1 renewable energy for its Deep Green customers, and is projecting that the number of such Deep Green customers will grow steadily over the planning period. In summary, MCE 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), 2022-2031

#### **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.<sup>18</sup> 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 2024. 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.

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Retail Sales (GWh)	5,665	5,788	5,810	5,779	5,739	5,677	5,631	5,540	5,583	5,617
CA RPS Compliance Requirement	39%	41%	44%	47%	49%	52%	55%	57%	60%	60%
MCE Light Green RPS Target	60%	60%	60%	60%	65%	70%	75%	80%	85%	85%
MCE Deep Green RPS Target	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

### Table 5: MCE renewable energy balance, 2022-2031

CA RPS Compliance Requirement (GWh)	2,181	2,390	2,556	2,699	2,829	2,952	3,080	3,174	3,350	3,466
MCE RPS Energy Contracted (GWh)	3,551	2,953	2,670	2,598	2,466	2,370	2,363	2,354	2,336	2,184
CA RPS Compliance Net Short/(Long)	(1,370)	(562)	(114)	101	363	582	717	821	1,013	1,281

MCE (LG+DG) RPS Target (GWh)	3,506	3,594	3,610	3,867	4,114	4,340	4,572	4,761	4,798	4,827
MCE RPS Energy Contracted (GWh)	3,551	2,953	2,670	2,598	2,466	2,370	2,363	2,354	2,336	2,184
MCE (LG+DG) Net Short/(Long)	(45)	641	940	1,269	1,648	1,970	2,209	2,407	2,462	2,643

<sup>&</sup>lt;sup>18</sup> Historically, MCE has contracted with PCC1 resources located within California; however, some resources located outside of California are eligible for PCC1, 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, PCC1-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 2022 portfolio, 100% of which will be sourced from renewables, large hydroelectric, and ACS<sup>19</sup> by ramping up its use of large hydroelectric and ACS power from 38% in 2021 to 40% in 2022. Then starting in 2025, MCE plans to steadily ramp down its use of large hydroelectric and ACS power as it correspondingly ramps up its use of PCC 1 renewables. MCE's large hydroelectric/ACS targets and open positions are shown in table 6 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 all three of the existing ACS suppliers: Bonneville Power Administration, Powerex, and Tacoma Power.

MCE Light Green Portfolio	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Large Hydro/ACS Target (%)	40%	40%	40%	35%	30%	25%	20%	15%	15%	15%
Large Hydro/ACS Target (GWh)	1,727	2,029	2,035	1,748	1,463	1,177	900	624	628	632
Large Hydro/ACS Under Contract (GWh)	825	825	825	-	-	-	-	-	-	-
Large Hydro/ACS Open Position (GWh)	902	1,204	1,210	1,748	1,463	1,177	900	624	628	632

**Table 6:** MCE large hydroelectric/ACS balance, 2022-2031

#### **Fixed-Price Forward Contracts**

MCE uses fixed-price forward contracts (i.e., "fixed for floating" contracts) to hedge CAISO dayahead 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 where MCE pays a fixed price per MWh in order to receive a floating price that clears for each hour. This helps hedge MCE's CAISO day-ahead market price exposure because the floating price (NP15) is correlated with MCE's CAISO load price (PG&E's defaultload aggregation point). These contracts are an important complement to MCE's portfolio, which includes contracts where MCE is not entitled to the CAISO revenue.<sup>20</sup> As MCE procures increasing portions of fixed-price renewables with storage and fixed-price large hydroelectric/ACS, MCE will ramp down its use of fixed-for-floating contracts.

#### **Resource Adequacy**

MCE meets California's RA program requirements by procuring qualifying RA through PPAs and RA-only contracts. As mentioned in Section IV (and explained in more detail in <u>Appendix C</u>), MCE currently must secure three types of RA: System RA; Local RA; and Flexible RA. Importantly, MCE's Local RA supply counts towards MCE's System RA requirement, and MCE's Flexible RA requirement is fulfilled with local or system resources. In other words, MCE's total System RA

<sup>&</sup>lt;sup>19</sup> 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.

<sup>&</sup>lt;sup>20</sup> 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.

requirement represents the total capacity that MCE must buy under the RA program, as shown in tables 7 and 8 below.

Average Net Requirement Across All Months	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Non-Local RA Requirement (MW)	700	700	704	707	711	714	718	721	725	728
Local RA Requirement (MW)	650	-	-	-	-	-	-	-	-	-
Total System RA Requirement (MW)	1,350	700	704	707	711	714	718	721	725	728

 Table 7: MCE system and local net RA requirements, 2022-2031

#### Table 8: MCE flexible RA requirements, 2022

2021 Flexible RA Requirements	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flexible RA Requirements (MW)	467	481	452	458	415	425	361	390	351	376	474	535

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

#### **Table 9:** MCE incremental system capacity

September Net Qualifying Capacity (MW)	2020	2021	2022	2023
Cumulative Incremental System Capacity Requirement	-	43.75	65.63	87.50
Cumulative Incremental System Capacity Contracted	-	88.23	88.23	88.23
Cumulative Incremental System Capacity Net Short/(Long)	-	(43.75)	(22.6)	(0.73)

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

#### Renewable Energy Purchases

MCE uses a portfolio risk-management approach in its power purchasing program, seeking lowcost 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 has no explicit preference for specific renewable energy technologies. MCE's supply preference is for a mix of renewable energy technologies that will deliver energy in a profile that is generally consistent with its load shape. On that note, and as shown in figure 12 below, MCE is planning to procure significant quantities of new incremental system capacity over the planning

period, resulting in at least 570 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 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.



Figure 12: Projected MCE resource mix (GWh), 2022-2031

### Feed-In Tariff

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

MCE's initial FIT program, which offered 15 MW of capacity to projects sized up to 1 MW, is fully subscribed. Starting in 2018, MCE began the second phase of its FIT program, adding an additional 10 MW of capacity and an updated Tariff for projects in MCE's service area up to 1 MW. Another 20 MW of capacity was offered for new FIT Plus projects sized between 1 MW to 5 MW, with a new applicable Tariff. Table 10 provides an update on the status of MCE's FIT and <u>FIT Plus</u> projects as of June 30, 2021. All FIT related documents are available on MCE's <u>FIT website</u>.

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
Oakley RV & Boat Storage	0.990	1,750	Jul 2018
EO Products	0.056	92	Dec 2018
Central Marin Sanitary Agency	0.750	1,314	Apr 2019
DRES Quarry 2.4	0.100	285	May 2019
American Canyon Solar A	0.990	2,645	Sep 2019
American Canyon Solar B	0.990	2,645	Sep 2019
American Canyon Solar C	0.990	2,645	Sep 2019
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	0.999	2,386	Apr 2021
Silveira Ranch B	0.999	2,386	Apr 2021
Silveira Ranch C	0.999	2,386	Apr 2021
Lake Herman Solar	5.000	13,604	TBD
Byron Solar Farm	3.000	8,563	TBD
Byron Hot Springs	0.990	2,739	TBD
Oakley Phase 3	0.938	1,622	TBD
Fallon Two Rock Rd Solar Farm	0.960	1,898	TBD
Byron Highway Solar	5.000	14,000	TBD
Napa Self Storage 2	0.658	1,054	TBD
Total	31.553	77,864	

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

#### Large Hydroelectric and ACS

MCE anticipates that its large hydroelectricity and ACS supplies will be met primarily through short- and medium-term purchases of California and Pacific Northwest hydroelectricity and ACS, but MCE is also exploring longer-term opportunities. MCE 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.

#### **Fixed-Price Forward Contracts**

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

Time Horizon	Fixed-Price Energy Contracting Guidelines
Current Year	70% to 100%
Year Two	60% to 95%
Year Three and Beyond	Up to 70%

#### **Table 11:** MCE fixed-price energy contracting guidelines

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, creditworthy 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 a request for offers and concurrently evaluates multiple proposals in the context of market conditions before entering negotiations with those respondents that provide the most compelling offers. Occasionally, MCE will issue ad hoc competitive solicitations or engage in independent bilateral negotiations to meet specific resource needs for which inclusion in an annual solicitation is not appropriate.

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

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

#### **Procurement Authorities**

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

#### MCE's Investment Grade Credit Ratings

MCE was the first CCA to receive a rating in 2018. In 2019, MCE was the first CCA to receive two investment grade ratings after <u>Fitch Ratings awarded MCE a BBB rating</u> with a Stable Outlook. In August of 2020, <u>Fitch upgraded MCE to BBB+</u> with a Stable Outlook citing MCE's strengthening financial position. S&P Global Ratings reviewed and <u>awarded MCE an "A" rating</u> in February of 2021.

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, full recovery of costs through independent local rate-setting, strong financial flexibility due to positive cash flows, and adequate liquidity levels with the expectation that MCE will meet and maintain a reserve target of 140 days cash on hand. As of the end of the March 31, 2020 fiscal year, MCE maintained over 190 days cash on hand and increased the targeted liquidity reserve to 240 days, and its target net position from 40% to 60% of operating expenses. MCE expects to meet these new targets by March 31, 2022.

### Appendix A: Load and Resource Table

#### Table 12: MCE resource balance

MCE Resource Balance (July 2021)										
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
I. Energy Requirements (GWh)										
Baseline Retail Load	6,139	6,269	6,318	6,331	6,362	6,393	6,436	6,449	6,480	6,513
Energy Efficiency	(30)	(38)	(44)	(49)	(56)	(67)	(60)	(57)	(46)	(44)
Distributed Generation	(891)	(980)	(1,078)	(1,186)	(1,304)	(1,435)	(1,578)	(1,736)	(1,788)	(1,842)
Electric Vehicle Load	447	536	613	683	737	785	833	884	937	990
- Retail Load (Net of EE/DG/EV)	5,665	5,788	5,810	5,779	5,739	5,677	5,631	5,540	5,583	5,617
Distribution Line Losses and Unaccounted For Energy	340	347	349	347	344	341	338	332	335	337
Total Energy Requirements	6,005	6,136	6,159	6,126	6,083	6,017	5,969	5,873	5,918	5,954
II. Volume Targets										
Light Green Renewable Energy Volume Targets (GWh)										
Portfolio Content Category 1	3,238	3,291	3,300	3,551	3,792	4,011	4,237	4,419	4,449	4,479
Portfolio Content Category 2	-	-	-	-	-	-	-	-	-	-
Portfolio Content Category 3 (REC Only)	-	-	-	-	-	-	-	-	-	-
Subtotal, Light Green Renewable Energy Volume Targets	3,238	3,291	3,300	3,551	3,792	4,011	4,237	4,419	4,449	4,479
Deep Green Incremental Renewable Energy Volume Targets (GWh)										
Portfolio Content Category 1	268	303	309	316	322	328	335	342	348	348
Large Hydro/ACS Energy Volume Targets (GWh)	1,727	2,029	2,035	1,748	1,463	1,177	900	624	628	632
III. Contracted Resources										
Renewable Resources Under Contract (GWh)										
Portfolio Content Category 1	3,551	2,953	2,670	2,598	2,466	2,370	2,363	2,354	2,336	2,184
Portfolio Content Category 2	-	-	-	-	-	-	-	-	-	-
Portfolio Content Category 3 (REC Only)	-	-	-	-	-	-	-	-	-	-
Subtotal, Renewable Resources Under Contract	3,551	2,953	2,670	2,598	2,466	2,370	2,363	2,354	2,336	2,184
Large Hydro/ACS Resources Under Contract (GWh)	825	825	825	-	-	-	-	-	-	-
IV. Open Positions										
Renewables Open Position (GWh)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Portfolio Content Category 1	(45)	641	939	1,269	1,647	1,969	2,209	2,407	2,461	2,643
Portfolio Content Category 2	-	-	-	-	-	-	-	-	-	-
Portfolio Content Category 3	-	-	-	-	-	-	-	-	-	-
Total Renewables Open Position (GWh)	(45)	641	939	1,269	1,647	1,969	2,209	2,407	2,461	2,643
Large Hydro/ACS Open Position (GWh)	902	1,204	1,210	1,748	1,463	1,177	900	624	628	632

### **Appendix B: MCE Expansion Phases**

#### Table 13: MCE expansion phases

MCE Phase	Description	Number of Accounts at Enrollment Date	Implementation Date
Phase 1	MCE Member (municipal) accounts 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 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 sales x 35.8%) + (2022 sales x 38.5%) + (2023 sales x 41.3%) + (2024 sales x 44%] / [2021 through 2024 sales].

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

#### **Table 14:** RPS requirements by compliance period

In order to supply their retail sales with minimum portions of renewable energy, LSEs must acquire and retire renewable energy credits (RECs). Each REC represents the environmental and

renewable attributes associated with 1 MWh of eligible renewable energy. Each REC is created when the electricity is generated and is assigned a vintage year and month. RECs are created in a database known as the Western Renewable Energy Generation Information System (WREGIS), which is used across the Western Interconnection (AC) power grid to track the environmental and renewable attributes of wholesale electricity. When acquiring and retiring RECs to meet its RPS requirements, MCE must also comply with additional requirements related to three Portfolio Content Categories (PCCs), defined as follows:

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

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

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

#### **Table 15:** RPS PCC restrictions for compliance period 4

#### 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, 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 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 largely procurement from existing resources, 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 mid-decade gas and nuclear generator retirements. MCE's share of this obligation is 332 MW of net qualifying capacity (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, standalone storage, renewable hybrid configurations, long-duration storage, and 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, 2024; an additional 43 MW must be split equally between long-duration storage and baseload generation.

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.<sup>21</sup> 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 the amount a solar or wind resource can contribute towards meeting an LSE's RA requirements.

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 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 are being assigned to a CPE starting in 2023. As a result, on October 31, 2021 (i.e., MCE's 2021 year-ahead RA filing), MCE will only need to demonstrate that it has secured 100% of its 2022 Local RA requirements. It will not need to demonstrate procurement of any Local RA for 2023 because that procurement, and future years' local RA procurement, will be the responsibility of the CPE.

<sup>&</sup>lt;sup>21</sup> 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.

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.

#### **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.

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; while 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 asset-controlling supplier (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 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 percent discount on their electric and natural gas bills. Customers may be eligible for CARE if they are enrolled in public assistance programs such as Food Stamps and Temporary Assistance for Needy Families (TANF). 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 available to them than residential customers. C&I customers can vary widely from industrial users to small businesses.

CPUC – California Public Utilities Commission | The CPUC, also simply called "the Commission," is the entity that regulates privately–owned utilities in the state of California, including 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 (roof-top solar, fuel cells, energy storage, demand response, electric vehicles, energy efficiency controls, etc.) that are deployed along the distribution grid level. DERs can be controlled in aggregate to behave like localized generation resources, thereby increasing local grid reliability while meeting the constraints of broader grid reliability needs.

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

DGEMS – Distributed generation-enabled microgrid services | This is a PG&E proposal to implement new distributed energy resources in order to reduce impacts of Power Safety Shutoff (PSPS) events.

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

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

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

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

ESP – Electricity Service Provider | ESPs are non-utility entities that offer Direct Access (DA) electric service to customers within the service territory of an electric utility. CCAs are not

considered ESPs. However, ESPs, CCAs and investor–owned utilities (IOUs) are all considered load–serving entities (LSEs).

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

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

GHG – Greenhouse gas | GHGs are gases in Earth's atmosphere that prevent heat from escaping into space. The burning of fossil fuels, such as coal and oil, and deforestation 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.

IDSM – Integrated demand–side management | IDSM is still being defined by the CPUC, but is generally used to refer to coordination among customer–side energy technologies and services. The technologies are often found behind a customer's meter and may be related to distributed generation, energy efficiency, electric vehicles, energy storage, and other areas. The services include demand response programs, specialized rate structures, and education programs. IDSM 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. Please refer to 'MUD' and 'POU' below.

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

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

LIHEAP – Low Income Home Energy Assistance Program | LIHEAP is a federally–funded program that will pay a customer's energy bill once per year if they're facing shut off, and provide home weatherization services. Preference for home weatherization is given to those with infants and toddlers under 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 | 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 towards an energy retrofit. The loans are repaid over the assigned terms (typically 15 to 20 years) via an annual assessment on their property tax bill. One of the most notable characteristics of PACE programs is that the loan is attached to the property rather than an individual.

PAM – Portfolio Allocation Mechanism | PAM is a mechanism for passing through long-term contract costs of generation resources. The proposal would have replaced the PCIA (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 | POUs (aka Municipal Utility Districts or 'MUDs') are local, publicly owned electric utilities administered by a board of publicly appointed representatives or democratically elected leaders (similar to a CCA). POUs are not within the jurisdiction of the California Public Utilities Commission (CPUC), and are thus subject to different regulation and enforcement than investor–owned utilities (IOUs), electricity service providers (ESPs) and CCAs. Please see 'MUD' above.

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

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

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

PTC – Production Tax Credit | The PTC is a tax credit available to make production of new wind resources cost–effective for developers to promote 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 or RFI – Request For Proposals, Offers or Information | RFPs and RFOs are open market opportunities for contracts with MCE. As a public agency, when MCE looks for new project proposals, contract proposals or energy contract offers, 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. RFIs are simply a request for information from the market and do not result in a contract.

RPS – Renewable Portfolio Standard | The RPS was created in 2002 under Senate Bill 1078 and most recently modified by SB (1X) 2 (2011). A RPS is a requirement that all load–serving entities (LSEs) maintain a minimum percentage of renewable electricity resources within their broader generation supply portfolio. The present RPS requires all of California's LSEs to have no less than 33% renewable generation content by 2020. The legislature and the CPUC are exploring means to adopting a higher RPS mandate.

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

AERN – Advanced Energy Rebuild Napa | MCE customer program providing electrification incentives to customers in Napa whose homes were red-tagged as too dangerous to occupy as a result of the 2018 and 2019 fires.

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

IRP – Integrated Resource Plan | MCE's IRP is a procurement plan that is submitted to the CPUC on a yearly basis. It includes contracts, goals, updates on enrollment, procurement and development, information about 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. This is defined as customers who do not have access to traditional services due to inability to meet program requirements for a variety of reasons.



# MCE 2022-2031 Operational IRP

MCE Technical Committee - November 4, 2021

# MCE Integrated Resource Planning (IRP)

In even years (such as next year in 2022), MCE produces two IRPs concurrently:

- Operational IRP
- Compliance IRP

- Operational IRP ("OIRP")
   Compliance IRP
- Produced every year
- 10-year planning horizon
- MCE template
- Submitted to MCE Technical Committee for Approval

- Produced in even years
- 10-year planning horizon
- CPUC templates
- Submitted to CPUC for certification



# MCE Customers

### MCE Currently Has ~540,000 Customers





 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: 2022-2031



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

• <u>Example Technologies</u>: 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

• <u>Example Technologies:</u> 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

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
PCC 1 Renewable	60%	60%	60%	65%	70%	75%	80%	85%	85%	85%
PCC 2 Renewable	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Large Hydro + ACS	40%	40%	40%	35%	30%	25%	20%	15%	15%	15%
Total Renewable	60%	60%	60%	65%	70%	75%	80%	85%	85%	85%
Total Renewable + Large Hydro + ACS	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GHG-Free Equivalent*	90%	95%	<b>95</b> %	<b>95</b> %	95%	<b>95</b> %				

• 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 is also targeting a 2030 Resource Adequacy portfolio with non-fossil resources comprising 50% of the Net Qualifying Capacity.

7,000

## MCE Procurement Targets Energy Storage

# 585 MW Storage Target

339 MW Storage for CPUC II	246 MW Storage for Future MCE Needs	
29 MW of Long-Duration (8 hour+) Storage	100 MW of Solar PV + 60 MW x 4-hour Storage	50% Clean RA by 2030
		Eutura Staraga Naada
175 MW of Standalone Storage	100 MW of Solar PV + 75 MW x 5-hour Storage	TBD

# Thank You

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November 4, 2021

TO:	MCE Technical Committee
FROM:	Stephanie Chen, Senior Policy Counsel Alexandra McGee, Manager of Strategic Initiatives
RE:	Responsible Biomass Electricity Development Principles (Agenda Item #07)
ATTACHMENT:	Responsible Biomass Electricity Development Principles

Dear Technical Committee Members:

#### SUMMARY:

There are various waste facilities in MCE's service area, all of which have different strategies for diverting organic wastes. Given limitations in infrastructure, some currently transport woody biomass waste via diesel trucks for incineration at facilities in the Central Valley and elsewhere. MCE is interested in understanding if local investments in biomass electricity production facilities can limit the carbon and co-pollutant emissions associated with electric generation from biomass, especially as it concerns California's Office of Environmental Health Hazard Assessment's (OEHHA) CalEnviroScreen mapping tool, identifying Disadvantaged Communities (DACs) within the state. This includes greenhouse gasses that contribute to climate change as well as other contaminants like nitrogen oxides, volatile organic compounds, and particulate matter (PM) 2.5 which cause significant harm to human health. Given the devastating nature of our wildfire season, it is worth more closely examining how we can process our local woody biomass.

With compliance requirements stemming from Senate Bill 1383, municipalities are looking for ways to maximize their organic waste stream diversions. This creates an opportunity for MCE to engage and explore partnerships to create local renewable energy from a supply of organic material that would otherwise enter the waste stream. Biomass can produce electricity by burning or gasifying organic materials to create heat, which in turn creates steam that turns a turbine to generate electricity. The most common fuel types are wood and agricultural waste like forest debris, rice hulls, and wheat straw Most biomass fuels would otherwise be dumped in landfills, openly burned, or left as fodder for forest fires. Diverting organic materials from landfills reduces the polluting and green-house gas -intensive methane that would otherwise be produced in an anaerobic environment.

The generation profile of biomass electricity is fixed, flat, and can run 24/7, making it a valuable resource that can reliably produce energy during critical evening hours. This is highly complementary to the more intermittent sources of renewable energy in MCE's portfolio like wind or solar. Because there are some environmental impacts related to biomass, including localized criteria pollutants such as carbon monoxide, nitrogen dioxide, lead, ozone (or smog), particulate matter, and sulfur dioxide, the attached principles have been developed to guide MCE's exploration of biomass procurement in the most appropriate and responsible way. These guiding principles have incorporated feedback from the MCE Community Power Coalition, the Marin Biomass Collaborative Steering Committee, as well as staff at the Bay Area Air Quality Management District. These principles would allow MCE to support the development of these sources locally, create closed-loop waste stream systems within our communities, invest in local infrastructure, alleviate fire danger, and diversify our portfolio of resources. If adopted, these principles would be shared with fellow CCAs through CalCCA.

#### Fiscal Impacts: None

**<u>Recommendation</u>**: Adopt the Responsible Biomass Electricity Development Principles.

#### Attachment A

#### Principles on Responsible Biomass Electricity Development

- MCE will prioritize resources that use a source of organic material that has been diverted from landfills and thereby making them compliant with the requirements of Senate Bill 1383.
- MCE will prioritize carbon neutral resources and adaptations wherever possible.
- MCE will prioritize procurement opportunities that proactively minimize local air quality impacts, both from the facility and from the transportation of fuel from its source to the facility.
- MCE will ensure that biomass facilities with which it contracts will have the appropriate California Environmental Quality Act (CEQA) and local air district permits.
- Selected facilities must use BACT (best available control technology) or BARCT (best available retrofit control technology) to reduce emissions to the greatest extent possible.
- MCE will prioritize resources that support sustainable forest management and wildfire reduction strategies to minimize the fuels for uncontrolled wildfire (i.e., no fuel farms).
- Staff will seek to understand if we can catalyze secondary environmental benefits with new technologies at these facilities, such as creating biochar or biocarbon.
- MCE will not procure biomass electricity from resources located in vulnerable communities defined by CalEPA's most current CalEnviroScreen map tool at the time of contract execution. Whenever possible, MCE will strive to procure biomass electricity from facilities that are not located in populated areas.
- MCE will enter into strict agreements pertaining to eligible and prohibited fuels at each facility (i.e., no propane or chemically-treated wood waste when primary feedstock is low).
- MCE will support the developers in their pursuit of expedited licensing and certification by providing relevant staff expertise and guidance.
- MCE will solicit feedback from the Community Power Coalition and other partners to identify preferred locations.
- MCE will bring bioenergy procurement opportunities to MCE's Community Power Coalition to solicit their input and guidance on project investments.



# **Richmond Green Hydrogen One**

MCE Technical Committee - November 4, 2021



Agenda

- Hydrogen (H2) Overview
- H2 for Electricity vs. Transportation
- Timeline of MCE's Green H2 Procurement Efforts
- CEC Grant and Richmond Green Hydrogen One (RGH1)
- RGH1 Contract Structure and
   Project Development Status
- RGH1 Next Steps
## Hydrogen Overview

#### H2 Overview

- H2 is a gas that is tasteless, odorless and colorless
- Pure H2 is non-toxic and scarce, but most abundant element in universe found in other molecules
- H2 can be manufactured by splitting CH4 (methane), H2O (water), or ammonia (NH3) and stored in tanks

#### **Benefits**

- H2 can be produced from a diverse set of sources and processes with or without GHG emissions
  - Renewable-powered electrolysis can split H2O into O2 (oxygen) and H2 to create "green hydrogen"
  - 95% of US H2 is produced today through natural gas reformation ("blue hydrogen" if CO2 is captured/stored or "grey hydrogen" if CO2 is emitted)
- H2 can be utilized for many valuable end uses including electricity, transport, industry, storage, heating, and export

# Green H2 for Electricity

"Power-to-Power"



can be used as a fuel.

# Green H2 for Transportation

### "Power-to-Transport"



 stored, either as a compressed gas or a liquid.

# MCE Hydrogen Goals

### MCE Goal

- Procure green H2 pilot project that utilizes renewable power to create and store green H2 via electrolysis
- Exploring highest value opportunities for either Power-to-Power <u>or</u> Power-to-Transportation green H2 pilot project

### **Limitations**

- **Power and Transportation** Not cost competitive and limited infrastructure for transporting and distributing H2
- **Power** Low efficiency relative to other types of energy that can be stored
- **Power** Grant funding and government incentive programs such as Low-Carbon Fuel Standard (LCFS) credits are unavailable

# Timeline of MCE H2 Efforts

#### 2019:

- Q2: MCE Board inquires about green H2; MCE staff begins research and visits green H2 microgrid in Sonoma and examines H2 for resiliency
- Q3: MCE staff and Board visit UC Irvine's microgrid

#### 2020:

- Q2: MCE launches Clean RA RFO for 100% clean RA technologies, such as green H2
- Q3: Identified project Power-to-Power green H2 project opportunities and began project diligence
- Q4: Negotiated term sheets with green H2 project bidders; analysis showed costs are significantly above market

#### 2021:

7

- Q1: MCE researches Power-to-Power green H2 grants to lower project costs; no grant funding available
- Q2: MCE identifies CEC grant for Power-to-Transport green H2 projects and engages Solar One project partners AES (owner/operator of Solar One) and Chevron (landowner and off taker of green H2) to begin RGH1 project development and grant application

# CEC Grant Funding Opportunity

#### **CEC Grant Background**

- CEC Grant Funding Opportunity (GFO-20-069) identified
- Grant requires project with capacity to produce at least 1,000 kg/day of green H2 for transportation
- MCE Solar One identified as ideal fit given grant requirements
  - Average solar production from facility (~57 MWh) is sufficient to produce 1,000 kg/H2 daily
  - > Facility is operational, significantly decreasing project development risk
  - > Low-value mid-day solar production repurposed for high value green H2 product
  - > On-site offtake and distribution of green H2 from Chevron
- MCE requested \$3M project funding for RGH1 from CEC (\$7M total available with \$3M/project limit)

### CEC Grant Schedule

Activity	Date
Grant Solicitation Release	4/9/21 (complete)
Pre-Application Submission Due	6/11/21 (complete)
Pre-Application Results Posted*	7/21/21 (complete)
Full Application Submission Due	9/22/21 (complete)
Anticipated Notification of Proposed Awards	November 2021
Anticipated CEC Business Meeting to Approve Funding	February 2022

\*MCE ranked 8/26 in pre-application submission scores (23/26 advanced to full application)

### Contract Structure



# RGH1 Project Site



- Located adjacent to north east side of MCE Solar One
- Fuel Cell Electric Vehicle trucks would enter site via intersection at Hanley St. x Castro St. for green H2 filling
- Chevron proposing to construct "energy plaza of the future" retail H2 fueling station directly north of H2 production site\*
- Chevron would manage green H2 supply and distribute H2 to adjacent energy plaza and other fueling stations in Bay Area



### RGH1 Project Development Status

Development Criteria	Status
Land	<ul> <li>Current lease between Chevron → MCE and sublease between MCE → AES; need to be amended to allow for operation of H2</li> </ul>
Interconnection	AES will file new load service application with PG&E to interconnect H2 equipment
Permitting	<ul> <li>CEQA Addendum under MCE staff review; expected presentation/certification review at Q1 2022 MCE Board Meeting</li> <li>Construction permit expected to be submitted to City of Richmond within next month</li> </ul>
Equipment	Identified preferred equipment supplier to supply project with containerized 2.5 MW H2 production facility
Offtake	<ul> <li>Term sheets executed with AES and Chevron; Definitive agreements to be negotiated after grant results received</li> </ul>
Financing	AES will finance project on balance sheet with support from any grant funding received
COD	Expected commercial online date is 8/2023
Letters of Support	<ul> <li>BAAQMD, Richmond Mayor Butt, Supervisor Gioia, GRID Alternatives, Senator Skinner, Congressman DeSaulnier, RichmondBUILD</li> </ul>
Project Benefits	50% local hire and prevailing wage requirements, Chevron donating \$2M towards free H2 fueling and vehicles for local community

### Next Steps

- CEC Grant results expected in November 2021
- Land amend lease and sublease to allow for operation of hydrogen production facility
- Interconnection AES load service application submission imminent; will require up to 6 months for PG&E to process
- Rates determine lowest cost option for supplying grid energy to H2 production facility
- **Execute Contracts** finalize pricing and detailed project terms and conditions in respective final definitive agreements with AES and Chevron
- Permitting review and approve CEQA EIR Addendum (MCE Lead Agency / City of Richmond Responsible Agency) and Design Review Permit (City of Richmond Permitting Agency) to construct project
- Project execution and construction AES to secure project financing, procure equipment, and construct facility
- **Operations** receive permission to operate from PG&E and declare project completion to begin contracts' delivery (expected 8/2023)

### Thank You

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