

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Application to Establish Non-Bypassable Charge
("NBC") for Above-Market Costs Associated with
Tree Mortality Power Purchase Agreements ("Tree
Mortality") in Compliance with Senate Bill 859 and
Resolution E-4805.

)
)
)
)
)
)
)
)
)

Application No. 16-11-005
(Filed November 14, 2016)

**PROTEST OF THE
CALIFORNIA COMMUNITY CHOICE ASSOCIATION**

Scott Blaising
Dan Griffiths
BRAUN BLAISING McLAUGHLIN & SMITH, P.C.
915 L Street, Suite 1480
Sacramento, California 95814
Telephone: (916) 712-3961
E-mail: blaising@braunlegal.com

January 6, 2017

Attorneys for the
California Community Choice Association

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Application to Establish Non-Bypassable Charge)	
("NBC") for Above-Market Costs Associated with Tree)	
Mortality Power Purchase Agreements ("Tree)	Application No. 16-11-005
Mortality") in Compliance with Senate Bill 859 and)	(Filed November 14, 2016)
Resolution E-4805.)	
)	

**PROTEST OF THE
CALIFORNIA COMMUNITY CHOICE ASSOCIATION**

In accordance with Rule 2.6 of the Rules of Practice and Procedure of the Public Utilities Commission of the State of California ("Commission"), and pursuant to the *Administrative Law Judge's Ruling Granting Request for Extension of Time for Protests and Extending Time for Responses to Motion*, dated December 22, 2016 ("ALJ Ruling"), the California Community Choice Association ("CalCCA") hereby submits this protest to the application jointly filed by Pacific Gas and Electric Company ("PG&E"), San Diego Gas & Electric Company ("SDG&E") and Southern California Edison Company ("SCE") (collectively, "IOUs") to create an additional non-bypassable charge ("Tree Mortality NBC") applicable to Community Choice Aggregation ("CCA") customers and other departing customers ("Joint Application").

I. INTRODUCTION AND BACKGROUND

CalCCA is a California nonprofit organization formed in June 2016 in order to represent the interests of California's CCA programs in regulatory and legislative matters. The existing CCA programs in California – CleanPowerSF, Lancaster Choice Energy, Marin Clean Energy, Peninsula Clean Energy, Silicon Valley Clean Energy, and Sonoma Clean Power – comprise CalCCA's current voting members. In addition, CalCCA's affiliate members include Central Coast Power (counties of San Luis Obispo, Santa Barbara and Ventura), the cities of Corona and Davis, and Placer County.

Many other local communities are enthusiastically investigating and establishing CCA programs as a means to customize and accelerate local efforts to address climate change, renewable energy development, and other important environmental and social issues.¹ CalCCA seeks to advance the interests of these communities, as well as its current membership, in this proceeding.

Local responsibility is a hallmark of the CCA option, which was first established in 2002 under Assembly Bill (“AB”) 117 and later affirmed and strengthened in 2011 under Senate Bill (“SB”) 790. Generation procurement activities are chief among areas in which local responsibility is essential. In this regard, the legislature has clearly stated that Community Choice Aggregators “shall be solely responsible for all generation procurement activities on behalf of the community choice aggregator's customers, except where other generation procurement arrangements are expressly authorized by statute.”² In other words, absent express statutory authority, even in exigent circumstances, the Commission should not authorize IOUs (directly or implicitly) to procure generation for CCA customers because those responsibilities are vested with Community Choice Aggregators. This is consistent with other statutory provisions.³

¹ The Commission recently reported to the Governor and legislature that, “as of March 2016, more than 20 communities are pursuing CCA.” *See Actions to Limit Utility Cost and Rate Increases*, May 2016, at 7-8 (referencing the April 2016 CCA Quarterly Report).

² Public Utilities Code Section 366.2(a)(5). All further statutory references are to the Public Utilities Code, unless otherwise noted.

³ *See, e.g.*, Section 380(a)(5) (defining the following as a legislative objective with respect to the resource adequacy program: “[m]aximize the ability of community choice aggregators to determine the generation resources used to serve their customers.”). *See also* Section 454.51(d) (expressly providing a self-procurement option for Community Choice Aggregators with respect to renewable integration requirements).

Competition is another hallmark of the CCA option. To ensure fair competition, “the legislature directed the Commission to develop rules and procedures that ‘facilitate the development of community choice aggregation programs, [...] foster fair competition, and [...] protect against cross-subsidization paid by ratepayers.’”⁴ The Commission has consistently affirmed this important public policy.⁵ As further discussed below, removing Community Choice Aggregators as viable options from mandated procurement requirements unnecessarily impedes competition and thereby adversely affects ratepayer costs. As advocates for ratepayer interests, Community Choice Aggregators believe that self-procurement options should be preserved, particularly since there is growing evidence that generation procurement by IOUs has historically been more expensive than similar procurement by publicly owned utilities or Community Choice Aggregators.⁶

In its review of the IOUs’ Joint Application, CalCCA urges the Commission to be mindful of the legislature’s views with respect to local responsibility and competition. On initial review, it appears that these important public policies are potentially undermined by the IOUs’ proposal.

⁴ D.12-12-036 at 6 (citing SB 790, § 2(h), and Section 707(a)(4)(A)).

⁵ See D.04-12-046 at 3 (emphasis added) (“The state Legislature has expressed the state’s policy to permit *and promote* CCAs by enacting AB 117....”). See also D.10-05-050 at 13 (emphasis added) “Certainly, Section 336.2(c)(9) [the provision in AB 117 that requires cooperation from the utilities] evidences a substantial governmental interest in *encouraging the development* of CCA programs and allowing customer choice to participate in them.”

⁶ See, e.g., *PG&E Notice of Ex Parte Communication*, filed October 13, 2016 in A.14-05-024, at 12 (showing the gap between resources in the so-called Padilla Report (2015) to publicly owned or procured resources). See also *PG&E’s Responses to Power Charge Indifference Adjustment Workshop Questions*, filed February 16, 2016 in A.14-05-024, at 7 (Table 1) (showing the gap between resources in the so-called Padilla Report (2014) to publicly owned or procured resources).

II. PROTEST

CCA is still reviewing the Joint Application and anticipates that it will propound discovery requests and otherwise seek to examine other aspects of the Joint Application. As such, CalCCA reserves the right to identify and address other issues that may arise in this proceeding. However, on initial review of the Joint Application, CalCCA protests the Joint Application on the following grounds.

- The use of non-bypassable charges (“NBCs”) should be limited, and Community Choice Aggregators should be provided the opportunity to self-procure their share of any mandated resources.
- The IOUs’ proposed value for the renewable attributes from generation procured under SB 859 appears to be flawed as it conflicts with existing Commission decisions, violates the ratepayer indifference principle and does not reflect market conditions.
- Procurement pursuant to Resolution E-4770 should not be included in the NBC authorized by SB 859; only procurement authorized by Resolution E-4805 should be included in the NBC authorized by SB 859.
- The Commission should expressly limit NBC treatment to five years, as specified in SB 859.

Each of these points is discussed below.

A. New NBCs Should Not Be Applied To CCA Customers

In past proceedings, CalCCA members vigorously opposed the creation of new NBCs for IOU procurement on behalf of CCA customers. In instances where the Commission is statutorily authorized to develop a NBC, as stated in CalCCA’s November 30, 2016 letter to the Commission, Community Choice Aggregators should be allowed the option to self-provide their share of any future mandated procurement requirements.⁷ This is consistent with the mandate in

⁷ A copy of CalCCA’s letter was provided to the service list in this proceeding by the filing and service of *California Community Choice Association Notice of Ex Parte Communication*, dated November 30, 2016.

SB 790, which states that Community Choice Aggregators “shall be solely responsible for all generation procurement activities on behalf of the community choice aggregator’s customers, except where other generation procurement arrangements are expressly authorized by statute.”⁸ Even where IOU procurement is authorized by statute, the Commission has broad authority to devise and implement self-procurement options for Community Choice Aggregators in lieu of NBCs, consistent with the intent of SB 790. CalCCA urges the Commission to provide meaningful self-procurement options for Community Choice Aggregators. This will both avoid unnecessary cost-shifting and preserve local responsibility.

B. The IOUs’ Cannot Bootstrap Cost Recovery Treatment Allowed By SB 859 To Cover Other Tree Mortality Costs

As previously mentioned, SB 859 only authorized the establishment of an NBC for the specifically defined procurement (125 MW) authorized in SB 859. SB 859 did not authorize similar treatment for any previously incurred procurement to address tree mortality issues, such as that authorized by the Commission in Resolution E-4770. Other than arguing that it would be expedient, the IOUs have not justified how their proposed recovery would meet statutory requirements to be recovered as an NBC from CCA customers under SB 859. Simply stated with respect to CCA customers, SB 859 did not authorize costs associated with Resolution E-4770 to be included in the Tree Mortality NBC. As such, including such costs in the Tree Mortality NBC would run afoul of SB 859.

C. The Proposed Tree Mortality NBC Methodology Is Flawed, Inconsistent With Existing Methodologies, and Seeks To Prejudge Key Cost Recovery Issue

The methodology proposed by the IOUs for the Tree Mortality NBC is flawed, particularly with regard to its valuation of the renewable attributes of biomass generation

⁸ See Note 2, above (citing Section 366.2(a)(5)).

procured under SB 859 and how Resource Adequacy (“RA”) benefits will be allocated. The methodology inexplicably and unjustifiably departs from Commission precedent with respect to generation-related NBCs.

For example, the IOUs propose to use a short-term value for renewable energy based on use of a Platt’s Index of renewable energy prices. This is inconsistent with the renewable value set by the Commission in D.11-12-018, and currently used by the Commission with respect to the Power Charge Indifference Amount (“PCIA”). There is no justification for this departure. With respect to RA benefits, the IOUs propose that the supposed value of these benefits would not be an offset to net costs (as is done under the PCIA approach), but rather “[a]ll [Load Serving Entities (“LSEs”)] would be entitled to receive a share of RA capacity credit resulting from the contracts.”⁹ There is no reasonable justification for the IOUs’ proposal. CalCCA remains concerned that the proposed methodology could negatively impact existing and future CCA programs.

D. SB 859 Costs And The Tree Mortality NBC Should Be Expressly Limited To Five Years

SB 859 states that financial commitments associated with procurement contracts should be limited to five years.¹⁰ It does not appear the IOUs have proposed that cost recovery for SB 859 costs under the Tree Mortality NBC be limited to five years. CalCCA requests that the Commission expressly state that recovery of SB 859 costs be limited in duration to the five year-financial commitments under SB 859.

⁹ Exhibit No. IOU-01 at 2.

¹⁰ See Section 399.20.3(b). See also Resolution E-4805 at 3.

E. The Commission Should Be Wary Of Creating A Multiplicity Of Generation-Related NBCs

As it stands now, the IOUs *currently* have *three* generation-related NBCs, each of which is separately reflected on customers' bills: the Competition Transition Charge ("CTC"), PCIA, and Cost Allocation Methodology ("CAM") (reflected on customers' bills as the New System Generation Charge). In recent months, the IOUs have sought to introduce *two additional* generation-related NBCs: the Tree Mortality NBC (described in this proceeding) and the so-called *Clean Energy Charge* (described in PG&E's application for approval to retire the Diablo Canyon Power Plan (A.16-08-006)). While CalCCA recognizes that a holistic examination of the various generation-related NBCs is outside the scope of this proceeding, CalCCA nevertheless urges the Commission to initiate on its own motion an inquiry into the policy and economic ramifications of entertaining so many generation-related NBCs. Perhaps this inquiry can occur in conjunction with the Commission's renewed consideration of the PCIA,¹¹ or as part of the Commission's review of CCA programs.¹²

III. PROCEDURAL MATTERS

Pursuant to Rule 2.6(d), CalCCA provides the following procedural comments:

A. Proposed Category

The proceeding is appropriately categorized as "ratesetting."

B. Need for Hearing

CalCCA believes that evidentiary hearings will be necessary.

¹¹ The Commission has initiated a working group process that has as its culmination the filing of a petition to modify or a petition for a rulemaking in early to mid-2016 with respect to recommended changes to the PCIA. (See D.16-09-044 at 20.)

¹² The Commission recently notified interested parties of an *En Banc* hearing, scheduled for February 1, 2017, to consider issues related to the expansion of CCA programs.

C. Proposed Schedule

CalCCA has no comments on the proceeding's schedule at this time.

IV. PARTY STATUS

Pursuant to Rule 1.4(a)(2), CalCCA hereby requests party status in this proceeding. As described herein, CalCCA has a material interest in the matters being addressed in this proceeding. CalCCA designates the following person as the "interested party" in this proceeding:

Scott Blaising
BRAUN BLAISING MCLAUGHLIN & SMITH, P.C.
915 L Street, Suite 1480
Sacramento, California 95814
Telephone: (916) 712-3961
E-mail: blaising@braunlegal.com

V. CONCLUSION

For the reasons set forth above, the Commission should reject that IOUs' proposal. Alternatively, the Commission should order that the Tree Mortality NBC be limited to the express authorization in SB 859, and align any methodology for determining the Tree Mortality NBC to be consistent with existing methodologies.

Dated: January 6, 2017

Respectfully submitted,

/s/ Scott Blaising

Scott Blaising
Dan Griffiths
BRAUN BLAISING MCLAUGHLIN & SMITH, P.C.
915 L Street, Suite 1480
Sacramento, California 95814
Telephone: (916) 712-3961
E-mail: blaising@braunlegal.com

Attorneys for the
California Community Choice Association

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

In the Matter of the Application of Marin Clean
Energy for Approval of its Energy Efficiency
Business Plan.

A. 17-01-____
(Filed January 17, 2017)

**NOTICE OF AVAILABILITY OF
DOCUMENTS SUPPORTING APPLICATION OF MARIN CLEAN ENERGY FOR
APPROVAL OF ITS ENERGY EFFICIENCY BUSINESS PLAN**

Michael Callahan
Regulatory Counsel
MARIN CLEAN ENERGY
1125 Tamalpais Ave.
San Rafael, CA 94901
Telephone: (415) 464-6045
Facsimile: (415) 459-8095
E-Mail: mcallahan@mceCleanEnergy.org

January 17, 2017

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

In the Matter of the Application of Marin Clean Energy for Approval of its Energy Efficiency Business Plan.

A. 17-01-____
(Filed January 17, 2017)

**NOTICE OF AVAILABILITY OF
DOCUMENTS SUPPORTING APPLICATION OF MARIN CLEAN ENERGY FOR
APPROVAL OF ITS ENERGY EFFICIENCY BUSINESS PLAN**

Pursuant to Rule 1.9 of the California Public Utilities Commission (“Commission”) Rules of Practice and Procedure, Marin Clean Energy (“MCE”) hereby provides this Notice of Availability of Documents Supporting the Application of Marin Clean Energy for Approval of its Energy Efficiency Business Plan to the R.13-11-005 Service List on January 17, 2017. The supporting documents conveyed through this Notice of Availability include:

- Testimony of Marin Clean Energy Regarding its Application for Approval of its Energy Efficiency Business Plan
 - Available at <https://www.mcecleanenergy.org/2017-Testimony>
- Marin Clean Energy Efficiency Business Plan
 - Available at <https://www.mcecleanenergy.org/2017-EE-Business-Plan>
- California Energy Efficiency Coordinating Committee (“CAEECC”) Issue Tracker with MCE Responses to Issues
 - Available at <https://www.mcecleanenergy.org/2017-CAEECC-Issue-Tracker>

As an alternative to accessing these supporting documents for the Application of Marin Clean Energy for Approval of its Energy Efficiency Business Plan on MCE's website, MCE will provide a print or PDF copy to any party upon request. To receive hard copies of MCE's supporting documents, direct your request in writing to:

MARTHA SERIANZ
LEGAL OPERATIONS MANAGER
MARIN CLEAN ENERGY
1125 Tamalpais Ave.
San Rafael, CA 94901
Telephone: (415) 464-6043
Facsimile: (415) 459-8095
E-Mail: mserianz@mceCleanEnergy.org

The supporting documents are available pursuant to this Notice of Availability as of today, January 17, 2017.

Respectfully submitted,

Michael Callahan
Regulatory Counsel

By: /s/ Michael Callahan
MICHAEL CALLAHAN

For:

MARIN CLEAN ENERGY
1125 Tamalpais
San Rafael, CA 94901
Telephone: (415) 464-6045
Facsimile: (415) 459-8095
E-Mail: mcallahan-dudley@mceCleanEnergy.org

January 17, 2017

Docket No.: A. 17-01-____
Exhibit No.: (MCE-1)
Date: January 17, 2017
Witness: Rebecca Menten

**TESTIMONY OF MARIN CLEAN ENERGY
REGARDING ITS APPLICATION FOR APPROVAL OF ITS
ENERGY EFFICIENCY BUSINESS PLAN**

1 **TABLE OF CONTENTS**

2 **CHAPTER 1: POLICY & PROGRAM OVERVIEW 1**

3 A. INTRODUCTION 1

4 1. MCE’s Strategic Advantages Are Grounded in Its Community 2

5 2. A Market Analysis of MCE’s Service Area Indicates Robust Opportunities in

6 Multiple Market Sectors 4

7 B. BUSINESS MODEL 6

8 1. The Customer SPOC Enables Straightforward Navigation of Intersecting

9 Demand Side Programs..... 6

10 2. A CRM Software Platform Supports a Sustained Relationship between the

11 Customer’s Property and MCE’s Programs..... 8

12 3. MCE’s Multi-Step Customer Value Chain Provides Robust Opportunities for

13 Engagement..... 9

14 **CHAPTER 2: PROGRAM HIGHLIGHTS BY SECTOR 10**

15 A. SINGLE FAMILY RESIDENTIAL PROGRAM 10

16 B. MULTIFAMILY RESIDENTIAL PROGRAM..... 13

17 C. INDUSTRIAL PROGRAM..... 16

18 D. AGRICULTURAL PROGRAM..... 19

19 E. COMMERCIAL PROGRAM..... 21

20 F. WORKFORCE DEVELOPMENT..... 24

21 **CHAPTER 3: PORTFOLIO BUDGET AND SAVINGS 27**

22 A. PORTFOLIO SAVINGS AND COST EFFECTIVENESS 28

23 1. Management and Staffing Resources..... 30

24 2. Risk Mitigation..... 30

25 **CHAPTER 4: MCE WILL FACILITATE PROGRAM COORDINATION AS THE**

26 **DOWNSTREAM LIAISON AND RECEIVE SAVINGS ATTRIBUTION 32**

1 A. MCE’S ROLE AS DOWNSTREAM LIAISON ORGANIZES OVERLAPPING
2 PROGRAMS..... 32
3 B. MCE REQUIRES SAVINGS ATTRIBUTION TO MAINTAIN COST-
4 EFFECTIVENESS..... 35
5 **CHAPTER 5: MCE'S PROPOSED STATEWIDE DOWNSTREAM PILOTS 37**
6 **CHAPTER 6: ANTICIPATED INCLUSION OF NEW COMMUNITIES WITHIN MCE’S**
7 **SERVICE AREA WILL AFFECT PROGRAM BUDGETS 41**
8 **CHAPTER 7: ALIGNING THE GAS FUNDING PROCESS TO MIRROR THE**
9 **ELECTRIC FUNDING PROCESS..... 42**
10 **APPENDICES..... A-C**
11

1 **CHAPTER 1: POLICY & PROGRAM OVERVIEW**

2 **A. Introduction**

3 Marin Clean Energy (“MCE”) is the first operating Community Choice Aggregator
4 (“CCA”) in California. MCE is currently the primary electricity provider in its service area,
5 offering electricity generation to 83% of eligible customers. MCE currently serves over 255,000
6 customers throughout its service area, which includes the entirety of Marin and Napa Counties
7 and the cities of Benicia, El Cerrito, Lafayette, Richmond, San Pablo, and Walnut Creek. Energy
8 Efficiency (“EE”) is a central part of MCE’s mission “to address climate change by reducing
9 energy related greenhouse gas emissions through renewable energy supply and energy efficiency
10 at stable and competitive rates for customers while providing local economic and workforce
11 benefits.”¹

12 EE technologies and program capabilities are progressing rapidly. Advanced metering
13 technology has enabled customers to be in control of how and when they use energy across their
14 properties by integrating energy conservation, EE, distributed generation (“DG”), and demand
15 response (“DR”) strategies into simple, easy to understand dashboards. These strategies are
16 enabling customers to become a part of the renewable energy solution, turning homes and
17 businesses into providers of grid services and achieving great advancements in attaining zero-net
18 energy (“ZNE”) for existing buildings. This is firmly in alignment with the Long Term Energy
19 Efficiency Strategic Plan (“LTEESP”)² adopted by the California Public Utilities Commission
20 (“Commission”). To respond to these rapid changes, the energy provider of the future needs to
21 be much more nimble and locally responsive than utilities of the past. MCE is this energy
22 provider.

¹ Our Mission. Available at <http://mcecleanenergy.org/about-us/>.

² Marin Clean Energy, Energy Efficiency Business Plan (“Business Plan”) at p. 12.

1 The Business Plan³ articulates MCE’s ten-year vision to dramatically ramp up its role in
2 providing energy efficiency programs. The Business Plan demonstrates how MCE will build
3 upon its strategic advantage as a local government agency to leverage local connections and
4 continue the upward growth of existing energy efficiency services. The Business Plan details
5 how MCE will look beyond energy efficiency, focusing on a suite of demand management
6 strategies that are more meaningful to customers and can achieve greater greenhouse gas
7 mitigation than energy efficiency alone.

8 The testimony includes the following topics:

- 9 • Chapter 1: Policy and Program Overview
- 10 • Chapter 2: Program Highlights By Sector
- 11 • Chapter 3: Estimated Energy Savings
- 12 • Chapter 4: MCE will Facilitate Program Coordination as the Downstream Liaison
13 and Receive Savings Attribution
- 14 • Chapter 5: MCE's Proposed Statewide Downstream Pilots
- 15 • Chapter 6: Anticipated Inclusion of New Communities Within MCE’s Service
16 Area Will Affect Program Budgets
- 17 • Chapter 7: Aligning the Gas Funding Process to Mirror the Electric Funding
18 Process

19 **1. MCE’s Strategic Advantages Are Grounded in Its Community**

20 MCE’s success derives from its focus on greenhouse gas (“GHG mitigation, open and
21 transparent local governance, and strong community partnerships to achieve market penetration.

³ The Business Plan is included as Appendix C to this testimony.

1 MCE’s focus on reducing GHG emissions informs both the procurement strategy for the
2 agency and drives innovation in its EE programming. New programs that integrate demand side
3 reduction technologies will be fully integrated into MCE’s EE offerings, driving down
4 administrative and implementation costs of multiple demand side strategies. MCE will utilize
5 high-efficiency natural gas measures and fuel-switching to achieve greater carbon reductions and
6 speed the transition to renewable energy integration. MCE will also focus on customer
7 transformation with a long-term approach to EE program planning and incentives to create a
8 future in which ratepayer subsidies are no longer necessary to motivate customer behavior.⁴

9 MCE is governed by local elected officials and supported by community leaders and
10 local institutions.⁵ As a CCA, MCE is driven by its mission and community input, not by
11 shareholder profit.⁶ Electricity revenue is invested in energy programs that directly benefit
12 constituents without diverting funds to private shareholders.⁷ MCE’s EE programs are discussed
13 at publicly noticed board meetings, which offer transparency and provide customers the
14 opportunity to give immediate feedback on program design and implementation to both MCE
15 staff and MCE’s governing board.⁸

16 MCE maximizes the strengths of a flexible, locally connected energy efficiency program
17 by developing a deep understanding of ratepayers’ needs through extensive public input. MCE
18 held numerous public workshops over a year to solicit feedback on the proposed EE programs in
19 various communities within its area. The feedback provided by MCE’s community members

⁴ Business Plan at p. 32.

⁵ *Id.* at p. 19.

⁶ *Id.* at p. 18-19.

⁷ *Id.* at p. 19.

⁸ *Id.*.

1 from its public meetings is summarized in Appendix D and Appendix E of the Business Plan.⁹
2 Additionally, the Business Plan went through multiple reviews by MCE’s board of directors,
3 comprised of elected officials from the local governments that comprise MCE’s service area.

4 MCE relies on partnerships with members of its community to maximize market
5 penetration.¹⁰ MCE collaborates with innovative companies, and activates community-based
6 organizations, schools, local companies, religious institutions, and other organizations as drivers
7 of energy efficient behaviors. Partnerships with community-based organizations that employ
8 local residents as part of EE solutions engage customers not only as ratepayers, but as
9 contractors, employers, workers, and community leaders. This community inclusion will lead to
10 behavioral change across many sectors and increased local penetration to maximize program
11 participation.

12 **2. A Market Analysis of MCE’s Service Area Indicates Robust**
13 **Opportunities in Multiple Market Sectors**

14 MCE is well-positioned to maximize EE programs in its service area. First, given that
15 MCE’s mission is to reduce GHG emissions, it is aligned with the current cultural, political, and
16 regulatory goals to the same end.¹¹ Second, MCE’s small size compared to utility Program
17 Administrators (“PAs”) allows MCE to be more nimble, responsive, and targeted in its
18 programs.¹² Third, MCE’s local governance structure and connection to its local community
19 through its board of directors and public engagement are strengths because many communities
20 want local control of energy services.¹³

⁹ *Id.* at p. 147-148.

¹⁰ *Id.* at p. 20.

¹¹ *See e.g.*, SB 350 (2015), SB 32 (2016), LTEESP.

¹² Business Plan at p. 21.

¹³ *Id.*

1 Nearly 90% of all ratepayers in MCE’s service area are residential customers.¹⁴ However,
2 the inclusion of new communities into MCE has expanded MCE’s original customer base to
3 include a greater number of major agricultural, industrial, and large commercial ratepayers.
4 MCE’s high energy-consuming accounts in the industrial, agricultural, and commercial sector
5 make up 62% of its estimated electricity consumption and over 41% of estimated natural gas
6 consumption, representing an equally important opportunity for efficiency.¹⁵ MCE’s expanded
7 EE portfolio provides programs designed for all customers in its service area.¹⁶

8 Construction in the residential sector within MCE’s service area took place primarily
9 between 1950-2000 with close to 50% of the buildings built between 1950 and 1975. The
10 exception is Benicia, which saw its greatest growth in the 1975–1999 timeframe.¹⁷ This largely
11 older housing stock indicates significant opportunities for retrofit programs in the residential
12 sector.

13 MCE’s diversity of commercial building vintage and size indicates a need to tailor
14 commercial sector strategies by community.¹⁸ For example, small commercial offerings will be
15 better suited to Contra Costa and Marin County, which have the greatest number of buildings
16 under 5,000 square feet, while the communities of Napa County, Walnut Creek, Lafayette, and
17 Benicia offer the greatest proportion of commercial buildings over 10,000 square feet.¹⁹

18 MCE exists in a highly regulated industry, with a long-established regulated monopoly as
19 its primary competitor. MCE can provide targeted, relevant service focused on meeting the
20 specific needs of its customers. Further, its small size allows MCE to more readily adapt to new

¹⁴ *Id.* at p. 23.

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.* at pp. 25-26.

¹⁸ *Id.* at p. 26.

¹⁹ *Id.* at p. 26.

1 energy savings strategies. By its very structure and scale, MCE can be nimble, adaptive and be
2 innovative in its approach to EE programs.

3 **B. Business Model**

4 MCE proposes integrated solutions to address demand reduction, including EE, on-site
5 energy storage, and water reduction measures. This allows MCE to streamline the customer
6 experience with a Single Point of Contact (“SPOC”) and also track opportunities for further
7 engagement with individuals via a sophisticated Customer Relationship Management software
8 platform (“CRM”).²⁰

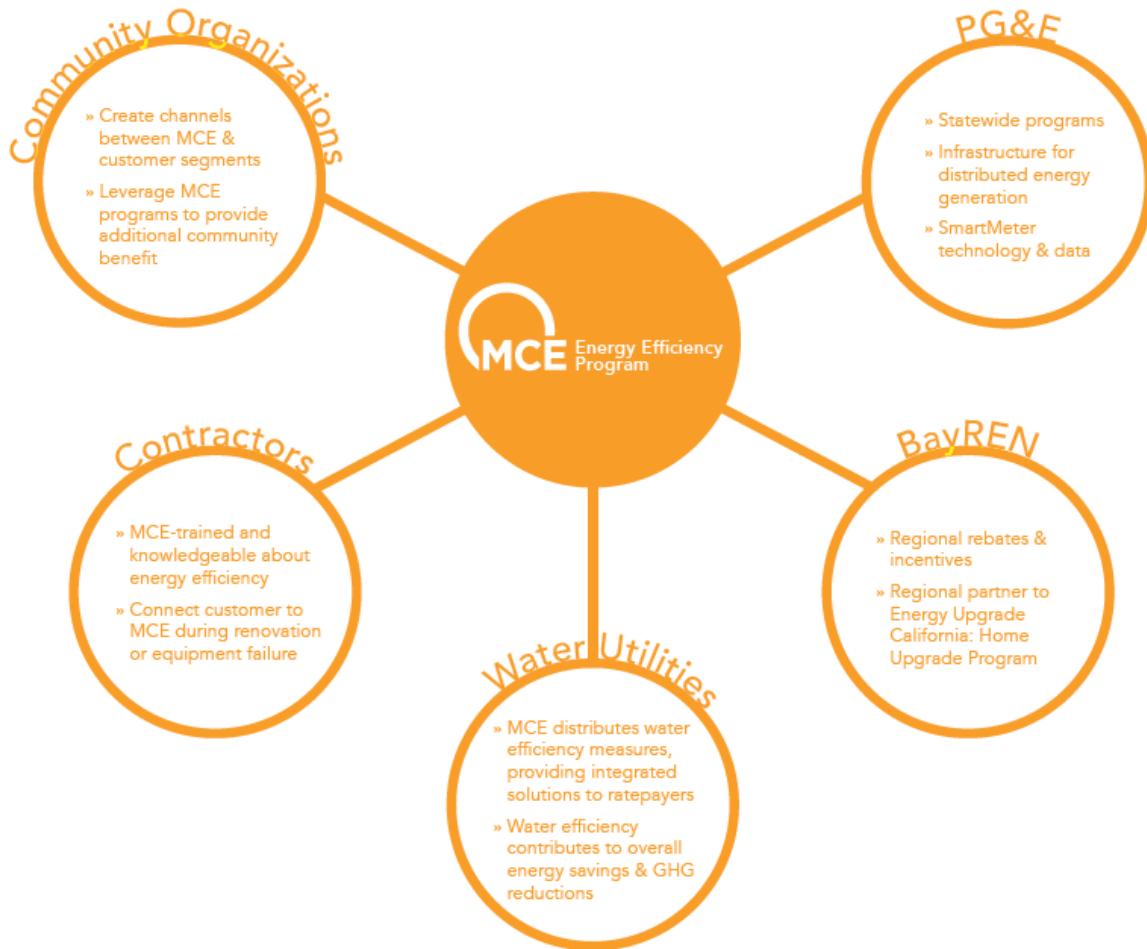
9 **1. The Customer SPOC Enables Straightforward Navigation of** 10 **Intersecting Demand Side Programs**

11 Through the SPOC, MCE guides the customer through the process of adopting energy
12 efficiency measures along with other demand side resources, from initial contact to project
13 completion. MCE works with different entities, including community organizations and
14 contractors, as a facilitator and participant advocate to ease the process of adopting energy
15 efficiency measures for property owners (Figure 1).²¹

²⁰ *Id.* at pp. 29-31.

²¹ *Id.*

1 **Figure 1. MCE as a Critical Hub**²²



2
3 Through this approach, MCE will effectively remove barriers for property owners,
4 managers, and tenants that face implementation challenges by providing the following tools and
5 advantages:²³

- 6
- **Uniform and bundled presentation of opportunities:** MCE will present
- 7 available incentives for all relevant technologies in an integrated application. With
- 8 this approach, customers can easily aggregate the measures they are interested in
- 9 without navigating multiple programs. This allows for efficiency in implementation

²² *Id.* at p. 30.

²³ *Id.* at pp. 30-31.

1 as well; multiple demand side strategies can be accessed through one customer touch
2 point. MCE also offers to help complete applications for multiple programs,
3 eliminating extra work and information redundancies for customers.

4 • **Personalized attention and follow-through:** A SPOC delivery model provides
5 more personalized attention and more follow through to reduce customer confusion
6 and increase project completion rate.

7 • **Project phasing:** MCE remains in contact with participating properties over time
8 and encourages property owners to implement projects in phases. This allows
9 customers to take advantage of large project incentives without having to implement
10 improvements all at once. This also helps customers develop a road map for
11 efficiency when financial or other limitations do not allow for a fully comprehensive
12 retrofit at first.

13 • **Increased financing options:** MCE partners with local banks and Property
14 Assessed Clean Energy (“PACE”) programs to serve building owners who have
15 limited access to private or low-cost financing for retrofits and are underserved by the
16 existing marketplace.

17 **2. A CRM Software Platform Supports a Sustained Relationship**
18 **between the Customer’s Property and MCE’s Programs**

19 A sophisticated CRM allows for an ongoing relationship between the property and the
20 program.²⁴ The CRM system can integrate customer energy use data with building data to help
21 the SPOCs develop an understanding of the customer’s energy saving potential and
22 opportunities. CRM software logs customer interactions to track the SPOC’s engagement with

²⁴ *Id.* at p. 31.

1 the customer and their project over time. By seamlessly integrating the SPOC and CRM systems,
2 MCE’s program allows for a rapid feedback loop in tracking the impact of the project and
3 provides opportunities for customers to relay feedback on the program. The CRM will play a
4 crucial role in facilitating properties of MCE customers to move toward ZNE buildings.²⁵

5 Additionally, opportunities for future improvements are recorded in the CRM system
6 every time a customer receives an integrated efficiency assessment.²⁶ If a customer decides not
7 to take action on a property improvement or replace an inefficient appliance, the energy
8 professional conducting the assessment will collect information to support follow-up when the
9 appliance is closer to end-of-life or when a new incentive or technology arises. This increases the
10 likelihood that non-early adopters will consider efficient equipment at future key trigger points,
11 such as at times of equipment failure or refinancing.

12 **3. MCE’s Multi-Step Customer Value Chain Provides Robust**
13 **Opportunities for Engagement**

14 MCE provides many opportunities for robust engagement with its programs and offerings
15 through: targeted outreach to customers; customized assessments of properties; aggregating
16 local, regional, statewide, and national rebates and incentives through the SPOC; offering low-
17 cost financing; providing technical assistance; partnering with local workforce development
18 organizations; and rigorously evaluating program performance.²⁷

²⁵ *Id.*

²⁶ *Id.*

²⁷ *Id.* at pp. 31-32.

1 **CHAPTER 2: PROGRAM HIGHLIGHTS BY SECTOR**

2 MCE proposes a highly integrated delivery of programs organized by customer sector.
3 Each of the programs has specific intervention strategies, but these are not intended as discrete
4 programs; rather they are complimentary approaches, which can be employed seamlessly
5 depending on the best fit for the customer. In this section, MCE summarizes key program
6 activities by sector:

- 7 • Multifamily Residential
- 8 • Single-family Residential
- 9 • Industrial
- 10 • Agricultural
- 11 • Commercial
- 12 • Workforce

13 Many of these programs contain cross-cutting strategies which have been embedded into
14 the discrete program sectors, including emerging technology and financing programs. In
15 addition, MCE supports the success of its energy efficiency programs with complementary
16 workforce development and training. A workforce development strategy will support all of
17 MCE’s EE programs, and though embedded within each program it is also discussed in a
18 separate chapter²⁸ to describe the distinct strategy that MCE will deploy.

19 **A. Single Family Residential Program²⁹**

20 MCE’s single family program has a wide range of offerings: from one-off rebates for
21 customers who have financial or structural barriers to incentives and technical assistance for

²⁸ *Id.* at pp. 114-126.

²⁹ *Id.* at pp. 35-51.

1 customers who want to upgrade to ZNE. The program also aims to help the highest energy users
2 reduce their consumption with energy management tools. Online tools and real-time feedback on
3 utility reports are emerging tactics that can help influence a household's interaction with energy
4 use.

5 Core activities of MCE's single-family residential program include:

- 6 • Provide participants with a Single Family SPOC to serve as a facilitator and
7 participant advocate, guiding customers through the process from initial contact to
8 project completion.
- 9 • Facilitate access to financing and rebates to help overcome upfront cost barriers.
- 10 • Provide the highest consuming customers with information about how they use
11 energy and advice for how to reduce consumption.

12 MCE's single-family residential program is characterized by these key innovations:

- 13 • An online portal that provides a one-stop-shop for customers to: (1) understand
14 energy usage; (2) identify upgrade opportunities; (3) search available rebates and
15 licensed contractors; and (4) perform cost comparisons of energy efficiency
16 appliances.
- 17 • Access to one-off energy efficiency rebates for homeowners who have financial
18 or structural barriers that prevent them from participating in Energy Upgrade
19 California: Home Upgrade Program.
- 20 • Additional incentives and technical assistance to educate and enable ZNE
21 customers to improve their homes' efficiency beyond code.

- 1 • Online social networking platforms that stimulate behavior changes by utilizing
2 tactics such as competitions and do-it-yourself (“DIY”) tutorials on a YouTube
3 channel.

4 MCE performed a gap analysis on the single family residential sector to develop the
5 intervention strategies best suited to the market.³⁰ This analysis reviewed energy consumption in
6 single family homes, which represent approximately half of the energy usage in MCE’s service
7 area.³¹ MCE also reviewed the building data to best understand the opportunities for owners and
8 renters.³² This gap analysis helped identify several problems including: (1) financial constraints;
9 (2) split incentive issues; (3) contractor limitations; (4) the baseline challenge; and (5) lack of
10 awareness.³³ MCE also identified appliance failure and resident or owner turnover as important
11 trigger points when the likelihood of engaging customers in an energy efficiency program is
12 highest for the single family sector.³⁴ MCE also examined adoption and penetration in existing
13 programs.³⁵

14 The gap analysis helped identify a set of intervention strategies that MCE will pursue in
15 the single family sector. These strategies include: (1) rebates and technical assistance; (2) single
16 measure rebates; (3) comprehensive retrofits; (4) ZNE; (5) door to door direct installation; (6)
17 financing; (7) behavioral; (8) school education; (9) information and automation; and (10)

³⁰ *Id.* at pp. 39-44.

³¹ *Id.* at pp. 39-40.

³² *Id.* at pp. 40-41.

³³ *Id.* at p. 41.

³⁴ *Id.* at pp. 41-42.

³⁵ *Id.* at pp. 42-44.

1 community engagement and gamification.³⁶ These intervention strategies are linked to problem
2 statements, market barriers, and metrics to track progress.³⁷

3 MCE identified key partners to help promote resource conservation in the single family
4 sector. These partners include: (1) building industry partners; (2) local governments; (3) property
5 owners, renters, and home owners associations; (4) contractors, builders, designers, architects,
6 and engineers; (5) retail stores and equipment manufacturers; and (6) schools and community
7 groups.³⁸ MCE will adjust its partnership strategy throughout the program cycle based on
8 performance and customer needs.

9 MCE proposes budgets and savings with a cost-effectiveness showing for the single
10 family program.³⁹

11 **B. Multifamily Residential Program⁴⁰**

12 Multifamily buildings are distinct enough from single family homes to warrant their own
13 approach. Several key barriers inhibit EE upgrades in multi-family residential buildings. One is
14 the split incentive structure, where owners bear the investment costs for energy consuming
15 equipment or conservation upgrades while tenants receive the savings. MCE's phased approach,
16 enabled by the SPOC and the CRM system, allows owners to plan larger projects that take
17 advantage of maximum incentive levels but are implemented over time, as tenants turn over. A
18 combination of light-touch, bundled, and customized measures helps to accommodate the
19 specialized needs of each multi-family building upgrade opportunity. The multifamily sector is

³⁶ *Id.* at pp. 44-47.

³⁷ *Id.* Table 4 at pp. 48-49.

³⁸ *Id.* at pp. 50-51.

³⁹ *See Id.*, Table 2 and Table 3 at p. 36 (sector information for years 1-2). *See also* Business Plan, Appendix A: Placemats at p. 133-36 (for budgets and savings for years 3-10).

⁴⁰ *Id.* at pp. 52-67.

1 an area where MCE’s flexibility can greatly address participation barriers in tenant/owner
2 situations.

3 Core activities of MCE’s multifamily residential program include:

- 4 • Provide participants with a Multifamily SPOC, who will provide personalized
5 attention, follow-through, and assistance identifying solutions that meet
6 customers’ needs, budget, and levels of readiness for change.
- 7 • Develop an integrated assessment process that streamlines multiple program
8 offerings into one customer report.
- 9 • Deploy sophisticated CRM software, allowing for an ongoing relationship
10 between the property and the program.

11 MCE’s multifamily residential program is characterized by these key innovations:

- 12 • Integrates energy savings and on-site generation opportunities to help property
13 owners see the full benefit of project upgrades, rather than isolated opportunities
14 by savings type.
- 15 • Project phasing allows building owners to capitalize on savings for large projects,
16 while completing improvements over time, as tenants turn over.
- 17 • A point-based incentive structure encourages and rewards a more comprehensive
18 scope of work and helps the owner easily identify potential rebates based on
19 planned improvements.

20 MCE performed a gap analysis on the multifamily residential sector to develop the
21 intervention strategies best suited to the market.⁴¹ This analysis reviewed energy consumption in

⁴¹ *Id.* at pp. 56-60.

1 multifamily homes, which represent approximately 11% of the energy usage in California.⁴²
2 MCE also reviewed the building data to best understand the opportunities for owners and
3 renters.⁴³ This gap analysis helped identify several problems including: (1) financial constraints;
4 (2) difficulty accessing decision makers; (3) split incentive issues; (4) contractor limitations; and
5 (5) negative customer experiences.⁴⁴ MCE also identified important trigger points when the
6 likelihood of engaging customers in an energy efficiency program is highest for the multifamily
7 sector. These triggers include (1) unit turnover; (2) major rehabilitation and renovations; (3)
8 emergency equipment failure; and (4) affordable housing financing and budget cycles.⁴⁵ The gap
9 analysis included an examination of the entities that influence the multifamily sector.⁴⁶ MCE
10 also examined adoption and penetration in existing programs.⁴⁷

11 The gap analysis helped identify a set of intervention strategies that MCE will pursue in
12 the multifamily sector. These strategies include: (1) combined measure incentives; (2) single
13 measure incentives; (3) in-unit direct installation; (4) targeting unit turnover; (5)
14 retrocommissioning and maintenance educations programs; (6) ZNE; (7) tenant education; (8)
15 data access; and (9) financing.⁴⁸ These intervention strategies are linked to problem statements,
16 market barriers, and metrics to track progress.⁴⁹

17 MCE identified key partners to help promote resource conservation in the multifamily
18 sector. These partners include: (1) building industry partners; (2) technical assistance providers,
19 rater, and inspectors; (3) energy services companies, tax credit allowance committees, and

⁴² *Id.* at p. 56.

⁴³ *Id.* at pp. 57-58.

⁴⁴ *Id.* at p. 58.

⁴⁵ *Id.* at pp. 58-59.

⁴⁶ *Id.* at p. 59.

⁴⁷ *Id.* at pp. 59-60.

⁴⁸ *Id.* at pp. 60-63.

⁴⁹ *Id.*, Table 9 at pp. 64-66.

1 housing and urban development; (4) local governments; (5) manufacturers; (6) community based
2 organizations; (7) real estate agents and moving companies; and (8) building supply stores.⁵⁰
3 MCE will adjust its partnership strategy throughout the program cycle based on performance and
4 customer needs.

5 MCE proposes budgets and savings with a cost-effectiveness showing for the multifamily
6 program.⁵¹

7 **C. Industrial Program**⁵²

8 Industrial activities vary significantly by region within MCE's service area, though most
9 present major opportunities for energy use reduction, water conservation, and DG. The high-
10 intensity energy demand of on-site food production and processing makes many agricultural sites
11 ineligible for agricultural accounts, and instead these sites are enrolled in either the industrial or
12 commercial rate classes. MCE's industrial sector offerings are designed to serve both
13 manufacturing and refinery facilities as well as large agricultural producers. Industrial customers
14 represent a small portion of all MCE accounts, however, the annual electricity consumption is
15 much larger per account than any other sector.

16 Core activities of MCE's industrial program include:

- 17 • Provide participants with a SPOC who specializes in industrial properties to serve
18 as a facilitator and customer advocate and to help guide business owners through
19 the process from initial contact to project completion.
- 20 • Offer financing and rebates to help overcome upfront cost barriers.

⁵⁰ *Id.* at pp. 66-67.

⁵¹ *See Id.*, Table 6 and Table 7 at p. 53 (sector information for years 1-2). *See also* Business Plan, Appendix A: Placemats at pp. 133-36 (for budgets and savings for years 3-10).

⁵² *Id.* at pp. 68-80.

- 1 • Offer technical assistance to help with measure selection, project planning, and
- 2 project management.
- 3 • Use billing data and building characteristics to identify the highest energy users
- 4 for targeted outreach.
- 5 • Utilize one-off or widget rebates as a marketing strategy to enroll new customers.

6 MCE’s industrial program offers these key innovations:

- 7 • Promote energy efficient industries by partnering with existing Green
- 8 Certification Programs.
- 9 • Leverage peer advisory groups to offer training within a particular industry and
- 10 share best practices.
- 11 • Pay-for-performance incentives.
- 12 • Promote strategic and continuous energy improvement.

13 MCE performed a gap analysis on the industrial sector to develop the intervention
14 strategies best suited to the market.⁵³ This analysis reviewed energy consumption across various
15 large customers.⁵⁴ The gap analysis resulted in identifying several problems including: (1)
16 financial constraints; (2) corporate tax structures; (3) budgetary planning cycles; (4) failure to
17 recognize non-energy benefits; (5) equipment downtime; (6) benchmarking unique processes; (7)
18 handling proprietary information; and (8) lack of awareness.⁵⁵ MCE also identified key trigger
19 points when the likelihood of engaging customers in an energy efficiency program is highest for

⁵³ *Id.* at pp. 72-74.

⁵⁴ *Id.* at p. 72.

⁵⁵ *Id.* at pp. 72-73.

1 the industrial sector.⁵⁶ The gap analysis included an examination of the entities that influence the
2 industrial sector.⁵⁷ MCE also examined adoption and penetration in existing programs.⁵⁸

3 The gap analysis helped identify a set of intervention strategies that MCE will pursue in
4 the industrial sector. These strategies include: (1) technical assistance and comprehensive
5 projects; (2) single measure rebates; (3) benchmarking; (4) data analytics; (5) pay-for-
6 performance; (6) strategic and continuous energy improvement; (7) peer outreach and training
7 cohorts; and (8) financing.⁵⁹ These intervention strategies are linked to problem statements,
8 market barriers, and metrics to track progress.⁶⁰

9 MCE identified key partners to help promote resource conservation in the industrial
10 sector. These partners include: (1) implementation partners; (2) other PAs and publicly-owned
11 utilities (“POUs”); (3) contractors; (4) local trade associations; (5) equipment distributors; (6)
12 lending institutions; (7) local government sustainability offices; (8) universities, government, and
13 other outreach institutions; and (9) PACE program providers.⁶¹ MCE will adjust its partnership
14 strategy throughout the program cycle based on performance and customer needs.

15 MCE proposes budgets and savings with a cost-effectiveness showing for the industrial
16 program.⁶²

⁵⁶ *Id.* at p. 73.

⁵⁷ *Id.* at pp. 73-74.

⁵⁸ *Id.* at p. 74.

⁵⁹ *Id.* at pp. 74-77.

⁶⁰ *Id.*, Table 13 at pp. 78-79.

⁶¹ *Id.* at pp. 79-80.

⁶² *See Id.*, Table 11 and Table 12 at p. 69 (sector information for years 1-2). *See also* Business Plan, Appendix A: Placemats at p. 133-36 (for budgets and savings for years 3-10).

1 **D. Agricultural Program**⁶³

2 MCE’s agricultural program is designed to serve customers whose primary activity is
3 farming as well as to integrate with customers served under the commercial program or
4 multifamily program that can also benefit from energy reductions on their agricultural lands.

5 MCE’s Agricultural Program focuses on dairies and vineyards, the region’s largest
6 agricultural users. The seasonal nature of agricultural operations affects the cash flow of these
7 businesses as well as the timing of when equipment is available to be upgraded. This sector is
8 characterized by a small number of overall accounts in MCE’s member communities, a relatively
9 low load, and a lack of time and resources to prioritize energy efficiency.

10 The program aims to overcome these barriers by integrating multiple resource
11 conservation opportunities, such as water conservation and sustainable farming practices, with
12 on-site generation and EE offerings to create integrated solutions that are attractive to local
13 agricultural operations. Furthermore, the program will coordinate closely with applicable
14 commercial and multifamily EE programs, to support those aspects of the agricultural business
15 that fall under those sectors, such as farm worker housing or agricultural product processing
16 locations.

17 Core activities of MCE’s agricultural program include:

- 18 • Provide participants with a SPOC who specializes in agricultural properties to
19 serve as a facilitator and customer advocate and to help guide business owners
20 through the process from initial contact to project completion.
- 21 • Develop an integrated assessment process that streamlines multiple program
22 offerings into one customer report.

⁶³ *Id.* at pp. 81-93.

- 1 • Offer financing and rebates to help overcome upfront cost barriers.
- 2 • Provide technical assistance to develop customized energy upgrade projects that
- 3 meet the needs of the customer.

4 MCE’s agricultural program offers these key innovations:

- 5 • Leverage existing certification programs to increase demand for green agricultural
- 6 practices.
- 7 • Design program and financing options based on seasonal work cycles, which
- 8 impact cash flow and equipment use.
- 9 • Coordinate with the multifamily residential program to provide farmworker
- 10 housing EE assistance.

11 MCE performed a gap analysis on the agricultural sector to develop the intervention
12 strategies best suited to the market.⁶⁴ This analysis reviewed the agricultural businesses that
13 operate within MCE’s service area and their energy consumption, which represents
14 approximately 1% of the energy usage in MCE’s service area.⁶⁵ This gap analysis helped
15 identify several problems including: (1) financial constraints; (2) seasonal cycles; (3) equipment
16 downtime; and (4) lack of awareness.⁶⁶ MCE also identified key trigger points when the
17 likelihood of engaging customers in an EE program is highest for the agricultural sector.⁶⁷ The
18 gap analysis included an examination of the entities that influence the agricultural sector.⁶⁸ MCE
19 also examined adoption and penetration in existing programs.⁶⁹

⁶⁴ *Id.* at pp. 85-89.

⁶⁵ *Id.* at pp. 85-86.

⁶⁶ *Id.* at pp. 86-87.

⁶⁷ *Id.* at pp. 87-88.

⁶⁸ *Id.* at p. 88.

⁶⁹ *Id.* at pp. 88-89.

1 The gap analysis helped identify a set of intervention strategies that MCE will pursue in
2 the agricultural sector. These strategies include: (1) technical assistance and comprehensive or
3 phased projects; (2) peer outreach and training cohorts; (3) EE assistance for farmworker
4 housing; and (4) financing.⁷⁰ These intervention strategies are linked to problem statements,
5 market barriers, and metrics to track progress.⁷¹

6 MCE identified key partners to help promote resource conservation in the agricultural
7 sector. These partners include: (1) implementation partners; (2) contractors; (3) local agricultural
8 associations; (4) equipment distributors; (5) local certification bodies; (6) federal agencies; (7)
9 MCE’s Low-Income Families and Tenants (“LIFT”) program; and (8) MCE’s On-Bill
10 Repayment (“OBR”) Programs and PACE program providers.⁷² MCE will adjust its partnership
11 strategy throughout the program cycle based on performance and customer needs.

12 MCE proposes budgets and savings with a cost-effectiveness showing for the agricultural
13 program.⁷³

14 **E. Commercial Program**⁷⁴

15 MCE’s Commercial Program is designed to serve both large and small commercial
16 customers. The program acknowledges inherent differences in opportunities between small and
17 large commercial properties, and emphasizes integrating diverse program offerings under one
18 umbrella. The program focuses on customer satisfaction and repeat engagement to drive towards
19 greater GHG reduction, and ultimately driving toward a transformed market.

20 Core activities of MCE’s commercial program include:

⁷⁰ *Id.* at pp. 89-91.

⁷¹ *Id.*, Table 17 at pp. 90-91.

⁷² *Id.* at pp. 92-93.

⁷³ *See Id.*, Table 15 and Table 16 at p. 82 (sector information for years 1-2). *See also* Business Plan, Appendix A: Placemats at pp. 133-36 (for budgets and savings for years 3-10).

⁷⁴ *Id.* at pp. 94-113.

- 1 • Provide participants with a SPOC who specializes in commercial properties to
2 serve as a facilitator and customer advocate and to help guide business owners
3 through the process from initial contact to project completion.
- 4 • Develop an integrated assessment process that streamlines multiple program
5 offerings into one customer report.
- 6 • Deploy user–friendly CRM software that supports ongoing relationships between
7 the business and the program.

8 MCE’s commercial program offers these key innovations:

- 9 • Deliver an integrated approach that provides a seamless customer experience.
- 10 • Target buildings by using data analytics in order to focus opportunities and
11 improve MCE’s sales approach.
- 12 • Offer innovative behavioral approaches that leverage web–based tools and
13 software programs. Depending on demand, offerings could also include
14 competitions and campaigns, social media, green teams, and interactive
15 dashboards.
- 16 • Leverage existing and forthcoming benchmarking regulations as a means to assist
17 customers to (i) compare their usage to their peers and best-in-class operations,
18 and (ii) to incentivize upgrades and enhancements.
- 19 • Offer financing options through MCE OBR to improve small commercial
20 customers’ access to capital, one of the primary barriers for EE upgrades in the
21 small commercial sector.
- 22 • Provide assistance in obtaining the Bay Area Green Business certification.

1 MCE performed a gap analysis on the commercial sector to develop the intervention
2 strategies best suited to the market.⁷⁵ This analysis reviewed energy consumption in commercial
3 properties, which represent approximately 10% of MCE's customers but account for a much
4 larger portion of energy usage in MCE's service area.⁷⁶ MCE also reviewed the building data to
5 best understand the opportunities for commercial customers.⁷⁷ This gap analysis helped identify
6 several problems including: (1) fragmentation of savings in small to midsize businesses; (2)
7 several challenges faced by large businesses; (3) financial constraints; (4) the split incentive
8 issue; (5) contractor limitations; (6) visibility of improvements; and (7) lack of awareness.⁷⁸
9 MCE also identified important trigger points when the likelihood of engaging customers in an
10 energy efficiency program is highest for the commercial sector.⁷⁹ The gap analysis included an
11 examination of the entities that influence the commercial sector.⁸⁰ MCE also examined adoption
12 and penetration in existing programs.⁸¹

13 The gap analysis helped identify a set of intervention strategies that MCE will pursue in
14 the commercial sector. These strategies include: (1) targeting buildings with data analytics; (2)
15 low- or no-cost audits for small commercial properties; (3) extensive audits and customizable
16 rebates for larger properties; (4) customer report that integrates multiple offerings; (5) technical
17 assistance; (6) retrofits; (7) data analytics and behavioral approaches; (8) Green Business
18 Certification; (9) pay-for-performance incentives; (10) strategic and continuous energy

⁷⁵ *Id.* at pp. 98-105.

⁷⁶ *Id.* at p. 98.

⁷⁷ *Id.* at pp. 99-101.

⁷⁸ *Id.* at pp. 100-102.

⁷⁹ *Id.* at pp. 102-103.

⁸⁰ *Id.* at p. 103.

⁸¹ *Id.* at pp. 103-104.

1 improvement; (11) new construction; and (12) financing.⁸² These intervention strategies are
2 linked to problem statements, market barriers, and metrics to track progress.⁸³

3 MCE identified key partners to help promote resource conservation in the commercial
4 sector. These partners include: (1) implementation partners; (2) other PAs and POUs; (3)
5 contractors; (4) local trade associations; (5) equipment distributors; (6) lending institutions; (7)
6 local government sustainability offices; (8) universities, government, and other research
7 institutions; and (9) PACE program providers.⁸⁴ MCE will adjust its partnership strategy
8 throughout the program cycle based on performance and customer needs.

9 MCE proposes budgets and savings with a cost-effectiveness showing for the commercial
10 program.⁸⁵

11 **F. Workforce Development**⁸⁶

12 MCE has identified workforce development as a vital component of EE customer
13 transformation. MCE is invested in developing relevant workforce opportunities in order to
14 achieve its mission of addressing climate change while providing local economic and workforce
15 benefits.

16 Through a growing network of trained local contractors, MCE can help achieve deeper
17 market penetration with expertise in multiple demand side management technologies and to
18 ensure each project has high program quality standards. MCE will support the success of its EE
19 programs with complementary workforce development and training.

20 Core activities of MCE's workforce development program include:

⁸² *Id.* at pp. 105-109.

⁸³ *Id.*, Table 21 at pp. 110-111.

⁸⁴ *Id.* at pp. 112-113.

⁸⁵ *See Id.*, Table 19 and Table 20 at p. 95 (sector information for years 1-2). *See also* Business Plan, Appendix A: Placemats at pp. 133-36 (for budgets and savings for years 3-10).

⁸⁶ *Id.* at pp. 114-126.

- 1 • Work with local experts to align, leverage, and influence existing training
2 programs and markets in MCE’s service area.
- 3 • Offer stackable credential programs that provide workers with a broad spectrum
4 of transferable skills that qualify them for a variety of clean energy jobs.
- 5 • Provide on- and off-ramps from the program to careers for workers of varying
6 levels of experience and ambition.

7 MCE’s workforce development program provides these community benefits:

- 8 • Skilled workers ensure that efficiency gains are met and that health and safety
9 issues are addressed.
- 10 • Marketing, education, and outreach (“ME&O”) activities increase the demand for
11 skilled labor in the region.
- 12 • Increase in skilled labor creates spillover⁸⁷ benefits for the whole community, not
13 just program participants.

14 MCE performed a gap analysis on workforce development to identify the intervention
15 strategies best suited to the market.⁸⁸ This analysis reviewed workforce data related to MCE’s
16 service area.⁸⁹ This gap analysis helped identify several problems including: (1) time
17 commitment; (2) cost of trainings; (3) misperceptions of energy efficiency costs and benefits;
18 and (4) background check policies.⁹⁰ MCE also identified contract negotiation, new project
19 development, introduction of new technologies, and changes in federal or state workforce
20 ordinances as important trigger points when workforce development strategies are likely to get

⁸⁷ Spillover is defined as “savings caused by the presence of the program but beyond program-related savings.” Energy Efficiency Policy Manual (v.5) at p. 56.

⁸⁸ Business Plan at pp. 114-120.

⁸⁹ *Id.* at p. 118-119.

⁹⁰ *Id.* at pp. 118-120.

1 the most traction.⁹¹ The gap analysis also included an examination of the entities that influence
2 workforce development.⁹²

3 The gap analysis helped identify a set of intervention strategies that MCE will pursue to
4 advance workforce development. These strategies include: (1) strengthening and supporting
5 existing programs; (2) soft skills and re-entry training programs; (3) stackable certificate
6 programs; (4) youth programs; (5) pre-apprenticeship programs and apprenticeship programs; (6)
7 professional certifications and continuing education; (7) targeted training opportunities; (8) direct
8 installation training; (9) a targeted building operator course; (10) fuel switching; (11) ZNE
9 trainings; and (12) partnerships with community-based organizations and local governments.⁹³
10 These intervention strategies are linked to problem statements, market barriers, and metrics to
11 track progress.⁹⁴

12 MCE identified key partners to help provide high quality workforce development
13 opportunities. These partners include: (1) technical assistance providers, raters, and inspectors;
14 (2) on-the-job training organizations; (3) department of education, community colleges, adult
15 education, and K-12 schools; (4) labor unions; and (5) builders associations and industry
16 associations.⁹⁵ MCE will adjust its partnership strategy throughout the program cycle based on
17 performance and customer needs.

⁹¹ *Id.* at p. 120.

⁹² *Id.*

⁹³ *Id.* at pp. 121-123.

⁹⁴ *Id.*, Table 27 at pp. 124-125.

⁹⁵ *Id.* at p. 123, 126.

1 **CHAPTER 3: PORTFOLIO BUDGET AND SAVINGS**

2 This section describes the methodology utilized by MCE to arrive at energy savings
3 targets that are both realistic and achievable. To ensure that savings targets created as outputs of
4 the cost effectiveness tool (“CET”) were realistic, MCE first estimated the potential savings in its
5 service area by comparing likely participation rates to energy impacts per customer to identify
6 achievable savings targets within its service area. MCE then developed a set of measures for
7 inclusion into the portfolio based on the Database for Energy Efficient Resources (“DEER”); the
8 Commercial End–Use Survey (“CEUS”);⁹⁶ and Residential Appliance Saturation Survey
9 (“RASS”)⁹⁷ data on appliances and energy use, the age and types of buildings in the service area,
10 and past program data on the most common measures.⁹⁸ These measures were input to the CET
11 and the outputs were compared against the potential savings from above. MCE incorporated the
12 guidance from Energy Division regarding existing conditions baselines into the cost
13 effectiveness calculators submitted along with this Business Plan. Final results were then
14 calibrated to determine achievable reach targets and a cost effective portfolio approach. A
15 schedule for declining incentives triggered by customer participation is also described in this
16 section.

⁹⁶ CEUS is a comprehensive study of commercial sector energy use, primarily designed to support the state’s energy demand forecasting activities. The data was published in 2006, and the study was funded by the California Energy Commission.

⁹⁷ RASS is a residential mail survey that requested information on appliances, equipment, and general consumption patterns from California households. The most recent round of data collection was completed in 2010. The survey was funded and administered by the California Energy Commission.

⁹⁸ Business Plan at p. 127.

1 **A. Portfolio Savings and Cost Effectiveness**⁹⁹

2 MCE’s customer transformation vision involves a future in which public subsidies are no
3 longer necessary to influence consumers’ energy efficiency behaviors. MCE’s program is
4 designed to promote customer transformation over a 10–year period. It will begin with low
5 participation and high incentives, which will reverse as the program matures. Reducing
6 incentives based on customer participation will allow ratepayers dollars to go further and reduce
7 direct costs to MCE’s programs. MCE anticipates this approach will improve the Program
8 Administrator Cost (“PAC”) test results over time and free up resources for more comprehensive
9 projects.

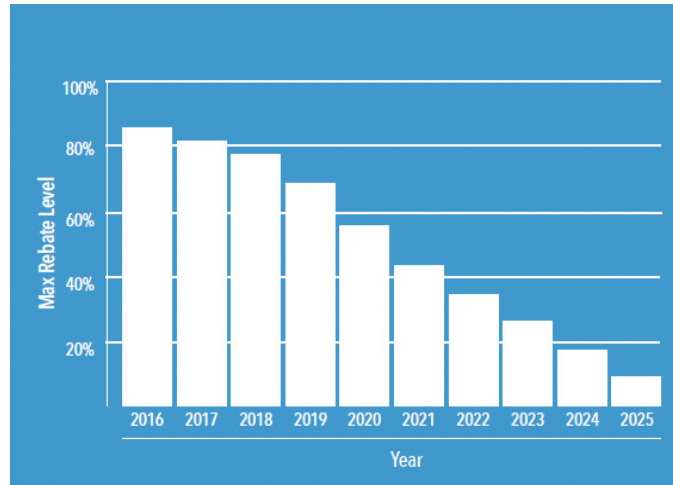
10 MCE plans to reduce incentives over time, following market trends indicating that
11 customers rely less on financial incentives as motivation increases to implement specific EE
12 measures and upgrades. Program participation benchmarks will trigger reductions in rebates
13 based on the participation target. MCE estimates that these triggers will take place over a
14 timeline that is dependent on participation rates (see Figure 2 and Figure 3 below).

15 MCE developed cost effectiveness forecasts utilizing the CET embedded in the
16 California Energy Data and Reporting System (“CEDARS”) module. MCE expects an initial
17 TRC of approximately 1.25 for the first year of implementation, with improving cost
18 effectiveness over time as programs ramp up and participation rates increase. Additionally, the
19 attribution for statewide activities will have a positive effect on the portfolio-level TRC when
20 they are incorporated into MCE’s savings. Detailed budget and savings information can be found
21 in Appendix A of the Business Plan.

⁹⁹ *Id.* at pp. 127-129.

1

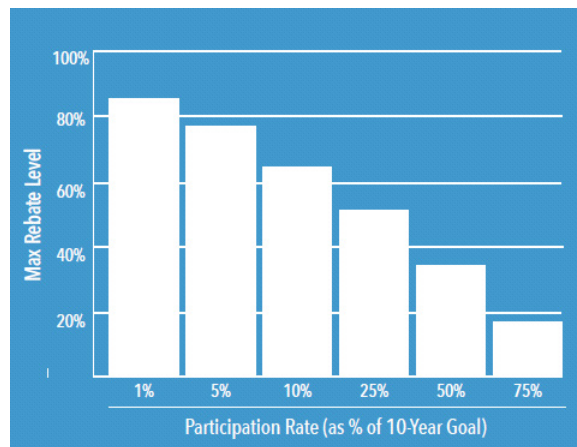
Figure 2. Declining Incentive Structure Over Time¹⁰⁰



2

3

Figure 3. Declining Incentives Tied to Participation Rates¹⁰¹



4

¹⁰⁰ *Id.*, Figure 38 at p. 128.

¹⁰¹ *Id.*, Figure 39 at p. 128.

1 **1. Management and Staffing Resources**¹⁰²

2 MCE projects a need for increasing staff resources over time, though staffing is assumed
3 to remain generally static after year three. Any further updates will be made with annual budget
4 filings. MCE will limit administrative expenditures to ten percent of the portfolio budget.

5 MCE is a small local government agency and does not anticipate developing a large staff.
6 While MCE has presented its proposal for internal staffing needs to support successful Business
7 Plan implementation,¹⁰³ much of the work required to support this Plan will need to be
8 accomplished through contracts with external consultants. MCE anticipates a combination of
9 requesting bids for specific program functions, as well as entire program elements for design and
10 deployment by third parties. This will include pilot program activity when appropriate and may
11 include some of the primary components of MCE’s portfolio.

12 As a local government, all solicitation processes will be conducted in a transparent and
13 open manner. MCE will generally utilize competitive solicitations when the scope of work
14 exceeds \$45,000 and will utilize a more robust, formal, and competitive solicitation process
15 when the scope of work exceeds \$175,000. These values are provided for illustrative purposes
16 and revisions based on changes in applicable law will not trigger a Business Plan update.

17 **2. Risk Mitigation**¹⁰⁴

18 The energy savings and customer transformation strategy within the Business Plan are
19 based on an assumption that participation levels will continue to increase even as incentives
20 decrease over time. This model has succeeded before when the California Solar Initiative
21 demonstrated that increasing market participation can be sustained with declining incentives in

¹⁰² *Id.* at pp. 129-130.

¹⁰³ *Id.*, Appendix B.

¹⁰⁴ *Id.* at p.130.

1 part due to decreased material and labor expenses. MCE asserts that a positive customer
2 experience will similarly support robust customer participation. However, in order to maintain
3 robust participation levels in later years of implementation, these assumptions must hold.

4 Therefore, MCE proposes a “re-look,” or a reconsideration of budget and incentive levels
5 in the event that assumptions underpinning the portfolio do not hold true. Variation in measure-
6 by-measure implementation will be managed through fund shifting or adjustment of incentives
7 on individual measures, which will be reported on an annual basis. However, if drops in
8 incentive levels are not met with a mostly consistent rate of participation, then MCE will be
9 required to reconsider its customer transformation logic. To ensure sufficient time for MCE’s
10 customer transformation proposal to be implemented, MCE proposes this re-look occur at year 4.
11 MCE will continually discuss program progress with Commission identified stakeholder groups,
12 MCE’s community and governing board, and Commission staff. MCE will gather input from all
13 stakeholders to inform adaptive management and consider other circumstances that would
14 require a “re-look.”

1 **CHAPTER 4: MCE WILL FACILITATE PROGRAM COORDINATION AS THE**
2 **DOWNSTREAM LIAISON AND RECEIVE SAVINGS ATTRIBUTION**

3 MCE proposes a program coordination approach that accommodates the evolving EE
4 landscape as statewide and third party programs take on new forms.¹⁰⁵ To facilitate these
5 changes and to enable the cost-effective execution of MCE’s portfolio, MCE proposes to assume
6 the role of the downstream liaison within its service area. MCE further proposes to receive
7 savings attribution for all statewide programs and downstream programs activities that occur
8 within MCE’s service area.

9 **A. MCE’s Role as Downstream Liaison Organizes Overlapping Programs**

10 The role of downstream liaison will require other programs to coordinate with MCE prior
11 to performing outreach to customers in MCE’s service area. This coordination will enhance
12 MCE’s ability to serve customers as the SPOC for downstream energy efficiency programs. In
13 its role as downstream liaison, MCE will help eliminate customer confusion about multiple
14 program offerings and may preclude investor owned utility (“IOU”) and third party downstream
15 programs that are duplicative of MCE’s offerings from being delivered in MCE’s service area. In
16 this role, if MCE precludes a duplicative offering from a Pacific Gas and Electric Company
17 (“PG&E”) third party program or other PG&E downstream program, that offering may not be
18 delivered in the portion of MCE’s service area as designated by MCE. MCE is not proposing to
19 provide all outreach activities for non-MCE programs.

20 Program overlap between CCAs and IOUs should be managed to ensure equity and cost
21 effectiveness of EE programs. Allowing overlap between MCE’s offerings and PG&E’s
22 offerings can be inequitable because IOUs have advantages over CCAs that prevent competitive
23 neutrality, including a broader geographic service territory with greater opportunities for high-

¹⁰⁵ *Id.* at p. 13.

1 TRC ratio projects,¹⁰⁶ as well as access to more customer data (e.g. prior participation data).
2 Other equity issues arise in the context of program shopping. PG&E employs account
3 representatives that receive financial incentives for referring customers to PG&E's EE programs,
4 instead of the program that best suits a customer's needs. Multiple programs serving the same
5 customers also present challenges for implementing distinct program strategies because they
6 allow customers to shop among programs for the highest incentives. Overlapping programs also
7 reduce cost effectiveness because multiple PAs devote resources to reaching the same projects.
8 These challenges create equity and cost-effectiveness concerns that should be alleviated by
9 assigning MCE the role of downstream liaison.

10 PG&E will not necessarily be displaced from delivering programs in MCE's service area.
11 PG&E can: (1) administer programs MCE is not administering; and (2) work with the MCE to
12 administer programs. MCE is hopeful about future cooperation with third parties and PG&E
13 under the proposal and encourages the Commission to consider a component in the Energy
14 Savings Performance Incentive that rewards for collaboration. Instead of pitting PAs against
15 each other, the Commission should encourage partnerships between MCE and PG&E. These
16 partnerships should reward PG&E for meaningful collaboration with MCE tied to referrals and
17 data sharing related to program participation. This should include incentives paid to IOU account
18 representatives for supporting participation in MCE programs. Establishing MCE as the
19 downstream liaison and providing incentives to collaborate will encourage more effective
20 cooperation between MCE and PG&E while minimizing equity and cost-effectiveness concerns
21 related to overlapping programs.

¹⁰⁶ This is due to factors such as generally hotter climate zones and a greater proportion of larger industrial and commercial customers.

1 MCE is limiting its ability to preclude duplicative program offerings to protect the
2 integrity of the statewide and local government programs. MCE recognizes the Commission’s
3 efforts to try a new approach to statewide programs, and thus does not propose to be able to
4 preclude any statewide programs from MCE’s service area.

5 This proposal for varied treatment among PAs is based on MCE’s experience of
6 productive collaboration with local governments and unproductive collaboration with PG&E.
7 MCE has been able to work constructively with local government entities in the context of EE
8 programs. For example, MCE has been able to coordinate delivery of programs with local
9 government partnerships (“LGPs”) instead of competing for the same customers. On the other
10 hand, MCE has had unproductive experiences working with PG&E. For example, MCE’s small
11 commercial program is delivered jointly with PG&E. PG&E unilaterally undertook an incentive
12 realignment that dramatically altered the cost-effectiveness and available incentives in that
13 program. MCE learned about this realignment after it was underway and was denied the
14 opportunity to provide input related to the changes in the joint small commercial program.

15 MCE’s portfolio acknowledges and accounts for the fact that its service territory also
16 overlaps geographically with the Bay Area Regional Energy Network (“BayREN”) and certain
17 LGPs. MCE is actively working to limit overlap of programs where possible by coordinating
18 with BayREN and relevant LGPs to avoid duplication and overlap of programs. Where overlap is
19 unavoidable, however, MCE will coordinate marketing and outreach with these partners to
20 minimize customer confusion and maximize program uptake. MCE will also coordinate with the
21 statewide ME&O administrator to ensure the role of downstream liaison is adequately
22 considered.

1 **B. MCE Requires Savings Attribution to Maintain Cost-Effectiveness**

2 MCE requires attribution of savings for programs within MCE’s service area to maintain
3 a cost-effective portfolio. The Commission authorized all PAs to share the attribution for
4 upstream and midstream activities under the statewide programs in D.16-08-019. MCE proposes
5 to extend that rationale to include downstream program activities within MCE’s service area.
6 The Commission has not determined how statewide program savings would be attributed
7 between a CCA and an IOU. PG&E has refused to engage in a dialogue with MCE about
8 attribution of statewide programs. MCE requests the Commission attribute all savings achieved
9 in MCE’s service area through statewide programs and downstream programs to MCE.

10 MCE’s limited geographic range substantially limits its ability to develop a balanced and
11 cost-effective portfolio. MCE’s service area is heavily comprised of residential and small-to-mid
12 sized commercial customers. These customer segments are historically among the least cost-
13 effective to serve, especially with comprehensive programs. Competing programs in MCE’s
14 service area compound this challenge by increasing the marketing and outreach dollars necessary
15 to reach customers and fragmenting already limited savings opportunities between multiple PAs.

16 MCE proposes to receive full savings attribution for the purpose of calculating cost-
17 effectiveness. In exchange for receiving attribution, MCE will contribute a portion of its program
18 budget to the program that accomplished the savings. MCE’s forecasted budgets in the Business
19 Plan include funding to support statewide programs and contribute to other downstream
20 programs. MCE will remain engaged with the other PAs in the development of statewide
21 program budgets. MCE requests the Commission direct PG&E to collaborate with MCE to
22 determine the appropriate portion of budget that should be covered from MCE’s service area.
23 MCE will utilize data (*e.g.* 2016 savings claims) to determine the budget to contribute other
24 downstream programs in its service area. MCE will request the actual statewide budget and

1 budget for all downstream programs within its service area in the September 1 annual budget
 2 advice letter filing following approval of this application.

3 Table 1 below provides information about how the role of downstream liaison and
 4 savings attribution will be coordinated with multiple types of programs.

5 **Table 1. Coordination in MCE’s Role as Downstream Liaison and with Savings**
 6 **Attribution**¹⁰⁷

	Required to Coordinate with MCE Prior to Outreach	MCE has Authority to Preclude Duplicative Offerings	100% Savings Attribution for Activities within MCE Service Area	100% Budget Attribution for Activities within MCE Service Area
Upstream & Midstream Statewide Programs	No	No	Yes	Yes
Downstream Statewide Programs	Yes	No	Yes	Yes
Third Party Programs	Yes	Yes	Yes	Yes
Other IOU Downstream Programs	Yes	Yes	Yes	Yes
REN Programs	Yes	No	Yes	Yes
LGP Programs	Yes	No	Yes	Yes

7

¹⁰⁷ Business Plan at p. 14.

1 **CHAPTER 5: MCE'S PROPOSED STATEWIDE DOWNSTREAM PILOTS**

2 MCE also proposes and seeks approval of four statewide downstream pilot programs as
3 part of this filing in compliance with Commission direction.¹⁰⁸ MCE includes the details of the
4 pilots in the application and testimony, as opposed to within the Business Plan, because the PAs
5 did not reach consensus and so could not include a single proposal in all business plans. MCE
6 provides a high-level program design for these pilots. If MCE’s recommended pilots are
7 approved, MCE will work with the other PAs to develop common language to include as an
8 attachment in all the PAs’ business plans and an associated implementation plan for each pilot.

9 MCE proposes four statewide downstream pilot programs: (1) a Consolidated Workpaper
10 Development Pilot Program; (2) a Transparent Deemed Savings Development Pilot Program; (3)
11 a Consistent Normalized Metered Energy Consumption (“NMEC”) Methodology Pilot Program;
12 and (4) a Statewide Data Support Pilot Program. All of these programs enable MCE’s favored
13 SPOC approach for a consistent and efficient customer interface.

14 The Consolidated Workpaper Development Pilot Program will consolidate the
15 development of workpapers for new measures into one program. This program will provide
16 consistency through a common approach to and resolution of workpaper development. The
17 program will also increase administrative efficiency because the technical analysis required to
18 develop workpapers can be concentrated into a single entity, resulting in one workpaper per
19 measure, as opposed to workpapers developed by each PA. This program should be designed to
20 provide consistency, transparent analysis and disposition, and should allow for peer review of the
21 underlying work. MCE recommends PG&E as the administrator of this pilot. MCE further
22 acknowledges the work the California Technical Forum has done to create consistency in the

¹⁰⁸ D.16-08-019 at p. 65, and Ordering Paragraph (“OP”) 9 at p. 111.

1 workpaper development, and encourages the Commission and PG&E to build upon this capacity
2 where possible. The pilot will create consistency and efficiency related to workpaper
3 development and should be approved.

4 The Transparent Deemed Savings Development Pilot Program will explore an option to
5 replace the existing process for developing deemed values. The pilot would establish a more
6 transparent process that allows for stakeholder input and peer review, similar to the workpaper
7 pilot discussed above. This pilot is primarily intended to improve the process for the
8 development of savings estimates associated with deemed measures to: (1) ensure consistent
9 approaches to developing deemed values; (2) identify opportunities to streamline the
10 development of deemed values; and (3) to increase stakeholder trust in the process through
11 transparency and peer review. The pilot has an additional potential benefit of reducing costs for
12 technical staff within each PA that currently engage in developing or disputing deemed values.
13 MCE recommends Southern California Edison Company (“SCE”) serve as the administrator of
14 this pilot. MCE acknowledges that the California Technical Forum is currently developing a
15 process for peer reviewed deemed savings estimates, and encourages the Commission and SCE
16 to avoid duplication of these efforts and leverage the existing capacity where possible. The
17 Commission should approve this pilot to improve the process of deemed measure development.

18 The Consistent Normalized Metered Energy Consumption (“NMEC”) Methodology Pilot
19 Program will develop and maintain a consistent approach for utilizing NMEC. This pilot is
20 intended to cost-effectively support the use of existing conditions baselines as called for by
21 Assembly Bill 802 (2015). This program will enhance and preserve the consistency of NMEC
22 methodology across all PAs and all downstream programs that utilize NMEC. It will also
23 achieve efficiencies in ratepayer spending due to consolidating the technical staff of multiple

1 PAs into a single entity and will support the scaling of metered savings approaches. This pilot
2 could also support smaller PAs with less technical capacity in utilizing NMEC. MCE
3 recommends San Diego Gas and Electric Company (“SDG&E”) serve as the administrator of
4 this pilot. This pilot program will improve the consistency and efficiency of NMEC use across
5 downstream programs and should be approved.

6 The Statewide Data Support Pilot Program will develop a common data platform for all
7 PAs to support statewide program administration, enable EM&V activities across multiple PAs,
8 and could provide other benefits. This pilot will help entities working across multiple PA service
9 areas to work with a single data platform. Currently, such entities must work with each PA’s data
10 platform which introduces a risk of inconsistency within the data and a burden for the entity.
11 This pilot will ensure a baseline of consistent data throughout the state and will reduce the
12 administrative costs for entities such as implementors, local governments, Commission staff, and
13 perhaps the California Energy Commission in accessing data by consolidating the data into a
14 single platform. MCE recommends that the Commission building upon work done to develop the
15 Energy Data Access Committee (“EDAC”)¹⁰⁹ but broaden the platform to be useful to a wider
16 audience of stakeholders. MCE recommends Southern California Gas Company (“SoCalGas”) as
17 the administrator of this pilot. In order to support statewide programs and reduce the challenges
18 of multiple data platforms for EE programs, the Commission should approve the Statewide Data
19 Support Pilot Program.

20 The IOUs will collectively likely propose in their Business Plans four discrete
21 downstream programs to be piloted on a statewide basis. However, MCE’s proposed programs
22 cut across many more downstream programs, will ensure greater consistency throughout the

¹⁰⁹ EDAC, Commission. Available at <http://www.cpuc.ca.gov/General.aspx?id=10151>.

1 state, and reduce overall administrative costs. MCE's proposed pilot programs have five
2 additional benefits that will not be found in the IOUs' proposals. First, MCE's programs preserve
3 the ability to locally tailor the downstream customer interface because they pilot common
4 approaches and elements that exist within other downstream programs. Second, MCE's proposed
5 programs cut across many more downstream programs. Third, MCE's programs have a greater
6 potential to reduce administrative costs associated with each PA undertaking these activities
7 individually. Fourth, MCE's programs reduce the challenge of coordinating statewide and non-
8 statewide customer-facing offerings that may result in siloed delivery and multiple customer
9 touches. Fifth, program delivery for implementers will be more consistent across PA service
10 areas, helping to support the scaling of energy efficiency. These advantages over the IOU
11 programs are substantial and the Commission should authorize MCE's proposed statewide
12 downstream pilot programs.

1 **CHAPTER 6: ANTICIPATED INCLUSION OF NEW COMMUNITIES WITHIN MCE'S**
2 **SERVICE AREA WILL AFFECT PROGRAM BUDGETS**

3 CCAs have the potential to include new communities within their service area at any
4 time. In 2015, additional communities joined MCE's service area, including unincorporated
5 Napa County and the cities of San Pablo, Benicia, and El Cerrito. As a result of this expansion,
6 MCE served approximately 30% more customers compared to 2014. In 2016, MCE service
7 began to include Walnut Creek, Lafayette, and the incorporated cities and towns in Napa County
8 resulting in approximately 40% more customers than were served in 2015. MCE anticipates that
9 the inclusion of new communities will generally not require a reconsideration of the logic or
10 fundamental approach of its Business Plan. However, updating the Business Plan to reflect a
11 newly included community appears to require considerable administrative work through an
12 application filing and a resulting proceeding.

13 MCE proposes a threshold of 50% for budget increases based on inclusion of new
14 communities without the need to update the Business Plan. To request such an increase, MCE
15 will file a Tier 2 advice letter specifying the additional funding, including a description of the
16 activities that will be funded, and providing an updated cost-effectiveness assessment. MCE will
17 also maintain an updated implementation plan that provides a current service area map with
18 associated market characterization information to reflect any new communities, similar to what
19 is included in the Business Plan for existing communities. This threshold will reduce regulatory
20 churn because it avoids the need for MCE to prepare and for the Commission to review a new
21 Business Plan application each time a new community is included in MCE's service area. This is
22 particularly useful if the logic and fundamental approach of the Business Plan does not change.

1 **CHAPTER 7: ALIGNING THE GAS FUNDING PROCESS TO MIRROR THE**
2 **ELECTRIC FUNDING PROCESS**

3 The Commission directed PG&E to enter into a contract with MCE to provide gas
4 funding, modeled after the contract PG&E has with BayREN.¹¹⁰ The Commission also directed
5 PG&E to provide a high level of deference to MCE on the terms of this contract.¹¹¹ This contract
6 should be amended to align the gas funding process with the process by which MCE receives
7 electric funds.

8 MCE receives electric funds in quarterly installments from PG&E based on MCE's
9 approved budget.¹¹² MCE specifies all unspent electric funds each year in an advice letter
10 filing.¹¹³ This unspent funds advice letter is used to offset the quarterly installments from PG&E
11 in the following year.¹¹⁴ This process is simple, functional, and administratively efficient.

12 The gas funding contract requires MCE to invoice PG&E on a monthly basis for
13 expenditures. These invoices are approved both by PG&E and by Energy Division staff. PG&E
14 subsequently transfers the invoiced gas funds to MCE. This process is functional but involves
15 unnecessary administrative burdens from the invoicing process and introduces complexity that
16 the Commission should eliminate.

17 The complexity resulting from different treatment of gas and electric funds is
18 unnecessary and should be eliminated. The complexity involves accounting and budget
19 presentment, particularly in the unspent funds advice letter. Since MCE receives electric funds
20 from PG&E prior to making expenditures but receives gas funds after making expenditures, only

¹¹⁰ D. 14-10-046 at p. 119.

¹¹¹ D.14-10-046 at p. 119.

¹¹² D.14-10-046, OP 24 at p. 167-168.

¹¹³ D.14-10-046, OP 25 at p. 168.

¹¹⁴ D.14-10-046, OP 24 at p. 167-168.

1 the unspent electric funds are available to offset future budget transfers. This complexity is
2 unnecessary and should be avoided through amending the gas funding process to align with the
3 electric funding process.

APPENDICES

Appendix A

Statement of Qualifications of Rebecca Menten

Q1: Ms. Menten, please state your name, position, and address.

A1: My name is Rebecca Menten. I am the Energy Efficiency Director at Marin Clean Energy (MCE). My business address is 1125 Tamalpais Avenue, San Rafael, California 94901.

Q2: Please describe your background.

A2: I am a full-time employee with MCE where I fulfill the role of Director of Customer Programs. I have overseen the design, authorization, and implementation of demand side management programs, including a portfolio of energy efficiency programs that focus on hard-to-reach customers and possess innovative and unique program designs. Prior to this, I worked at the California Public Utilities Commission (CPUC) as a Research Fellow in which my primary duties included assisting in the design and development of low-income multifamily programs. I also worked on financing programs while at the CPUC. I have also worked as an Energy Efficiency Specialist (II) at the California Energy Commission (CEC) in the High Performance Building Standards Group. At the CEC, I served as Contract Manager for the Local Government Commission contract, an American Recovery and Reinvestment Act contract, which funded the statewide Energy Upgrade California activities. I also served as the point person on energy efficiency financing. My final duties at the Energy Commission involved serving as Program Manager for the Existing Buildings Energy Efficiency Program. I also hold a Masters in Science from Humboldt State University. My resume is attached as Exhibit B.

Q3: What is the purpose of your testimony?

A3: As the Director of MCE's Customer Programs, I am applying for funding for MCE's 2016 and Beyond Energy Efficiency Programs. MCE is well poised to be the primary provider for energy efficiency services in our service area with our deep understanding of and connections

to various communities in our service area, and our ability to be nimble and responsive to our customers.

Q4: Does this conclude your statement of qualifications?

A4: Yes, it does.

Appendix B

Resume of Rebecca Menten

Rebecca Menten

Director of Customer Programs, Marin Clean Energy
1125 Tamalpais Ave, San Rafael, 94901

Education

Humboldt State University **May 2010**

M.S. Environmental Systems: Energy, Environment, and Society

“Municipal Financing Programs as an Option to Overcoming Barriers to Energy Efficiency”

Interdisciplinary program focused on energy policy and climate change mitigation. Special research focuses include state and federal climate change legislation and program proposals. Thesis research on the applicability of PACE financing programs to resolve barriers to implementation of energy efficiency.

Humboldt State University **May 2007**

B.A. Political Science

Critical thinking and writing skills. Special focus in appropriate development, political economy, and political theory. Graduated *summa cum laude*.

Humboldt State University **May 2006**

B.A. French Language

French language studies with a concentration in African literature. One year abroad in France; one month abroad in Morocco. Graduated *summa cum laude*.

Work Experience

• **Director of Customer Programs: Marin Clean Energy** **Sep. 2012 – Present**

Leads energy efficiency activities for California’s first community choice aggregator. Provides policy and program design for proceedings at the California Public Utilities Commission. Oversees implementation, ensuring compliance with applicable regulatory guidelines and reporting timeframes. Leads design of 2016 program planning, including an integrated program design with wide resource conservation implications.

- **Commission Specialist II (Efficiency): California Energy Commission** **Feb. 2011– Sep. 2012**

Program Manager and financing lead for the Existing Building Program (AB 758). Developed program work plan, managed resources, and coordinated with stakeholders.

Contract manager for the Local Government Commission Energy Upgrade California (EUC) project. Managed brand and web portal for statewide EUC effort and coordinate with intra-agency, local government, and industry stakeholders on program coordination.

- **Research Fellow: California Public Utilities Commission** **June 2010 – Feb. 2011**

Researched best practices in emerging residential whole building retrofit programs and working with IOU staff to incorporate best practices into IOU program design. Developed whole house pilot program that focused on accessibility to the low-income multifamily sector. Also served as financing lead near the end of the term.

- **Energy Program Specialist: City of Arcata** **Feb. 2007 – June 2010**

Managed the City of Arcata energy program. Performed several greenhouse gas inventories, prepared and reviewed policies to mitigate carbon emissions, worked on regional green building program development, served as staff liaison for the Energy Committee including minutes and agendas. Primary project developer for forestry carbon offset project.

- **Independent Contractor: Humboldt County** **Nov. – Dec. 2009**

Lead role on writing a grant proposal to cover start up and operational costs for a seven county regional Property Assessed Clean Energy financing program. Advised on technical and financial feasibility and served as primary program designer.

REBECCA MENTEN
PREPARED TESTIMONY

1. CPUC Applications 14-11-007 *et al.*

Testimony of Marin Clean Energy Regarding A Proposed Low-Income Energy Efficiency Pilot Program for the Program Years 2015-2017

Appendix C
MCE Energy Efficiency Business Plan

MARIN CLEAN ENERGY

ENERGY EFFICIENCY BUSINESS PLAN





MCE's Energy Efficiency Business Plan was created by MCE in partnership with Potrero Group.

1. ACRONYMS	2
2. EXECUTIVE SUMMARY	3
3. INTRODUCTION	7
4. BACKGROUND	10
5. MCE'S STRATEGIC ADVANTAGES	17
6. MARKET ANALYSIS	21
7. BUSINESS MODEL	29
8. SINGLE FAMILY SECTOR	35
9. MULTIFAMILY SECTOR	52
10. INDUSTRIAL SECTOR	68
11. AGRICULTURAL SECTOR	81
12. COMMERCIAL SECTOR	94
13. WORKFORCE DEVELOPMENT	114
14. PORTFOLIO BUDGET AND SAVINGS	127
15. CONCLUSION	131
16. APPENDICES	132

1. ACRONYMS

AMI — Advanced Metering Infrastructure	IOU — Investor Owned Utilities
ANSI — American National Standards Institute	IPCC — Intergovernmental Panel on Climate Change
BayREN — Bay Area Regional Energy Network	ISO 50001 — International Organization for Standardization’s Energy Management Standard
BBEES — Big Bold Energy Efficiency Strategies	kW — kilowatt
BPI — Building Performance Institute	kWh — kilowatt-hour
CAS — Combustion Appliance Safety	LED — Light-Emitting Diode
CCA — Community Choice Aggregation	LEED — Leadership in Energy & Environmental Design
CEC — California Energy Commission	M&V — Measurement and Verification
CAISO — California Integrated System Operator	MCE — Marin Clean Energy
CEUS — California Commercial End-Use Survey	MW — Megawatt
CPUC — California Public Utilities Commission	O&M — Operations and Maintenance
CRM — Customer Relationship Management	PA — Program Administrator
CSI — California Solar Initiative	PACE — Property Assessed Clean Energy
DG — Distributed Generation	PG&E — Pacific Gas & Electric Company
DR — Demand Response	POU — Publicly Owned Utility
DSM — Demand Side Management	PY1 — Program Year 1
EE — Energy Efficiency	QA — Quality Assurance
EM&V — Evaluation, Measurement and Verification	QC — Quality Control
EMIS — Energy Management Information Systems	RASS — Residential Appliance Saturation Survey
ESAP — Energy Savings Assistance Program	RENs — Regional Energy Networks
ESCO — Energy Services Company	S-CEI — Strategic and Continuous Energy Improvement
EUC — Energy Update California	SMB — Small to Mid-size Business
EVs — Electric Vehicles	SPOC — Single Point of Contact
GHG — Greenhouse Gas	TCAC — Tax Credit Allocation Committee
HOA — Home Owners Association	TRC — Total Resource Cost
HUD — The Department of Housing & Urban Development	USDA — United States Department of Agriculture
HUR — Home Utility Report	WIB — Workforce Investment Board
HVAC — Heating, Ventilation and Air Conditioning	ZNE — Zero Net Energy
IDSMS — Integrated Demand Side Management	

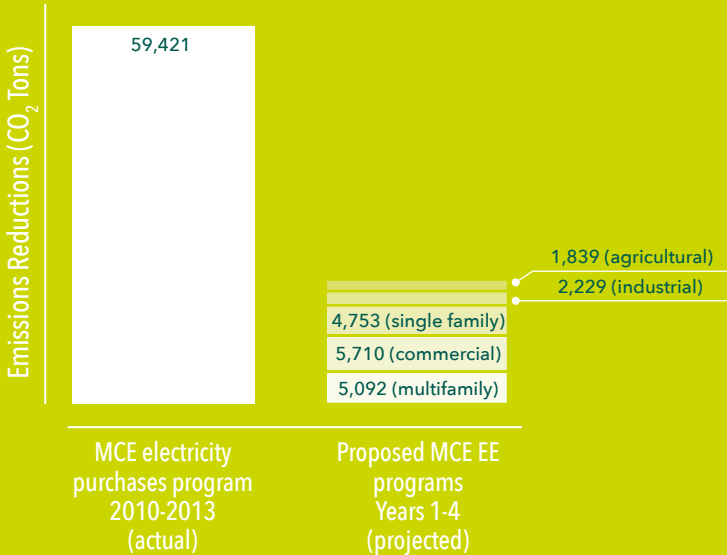
2. EXECUTIVE SUMMARY

California’s changing climate requires a response that focuses on deep, rapid, and widespread adoption of mitigation strategies. Energy efficiency should be a cornerstone of climate mitigation strategies because it relies on technology that is readily available and can offset the cost of more expensive improvements — such as transportation infrastructure upgrades. However, energy efficiency alone cannot achieve ambitious climate protection goals; resource conservation strategies of all types will be required to reduce carbon emissions across sectors. Likewise, the State needs to move beyond the actions of early adopters and introduce a paradigm in which all Californians achieve a low carbon lifestyle.

MCE is well situated to drive innovation and hard work in this area. MCE was first formed in 2008 to help Marin County achieve the dramatic carbon reductions targeted in its climate action plan. As a community choice aggregator, MCE is a local government agency with a voting board of elected officials. Since its inception, MCE has delivered on its mission of greenhouse gas mitigation. Between 2010 and 2013, MCE eliminated 59,421 metric tons of greenhouse gas emissions (Figure 1), helping Marin County meet its climate action plan targets 8 years early.

MCE first pursued energy efficiency funding in February of 2012, and received approval from

Figure 1. CO₂ Emission Reductions by MCE Program

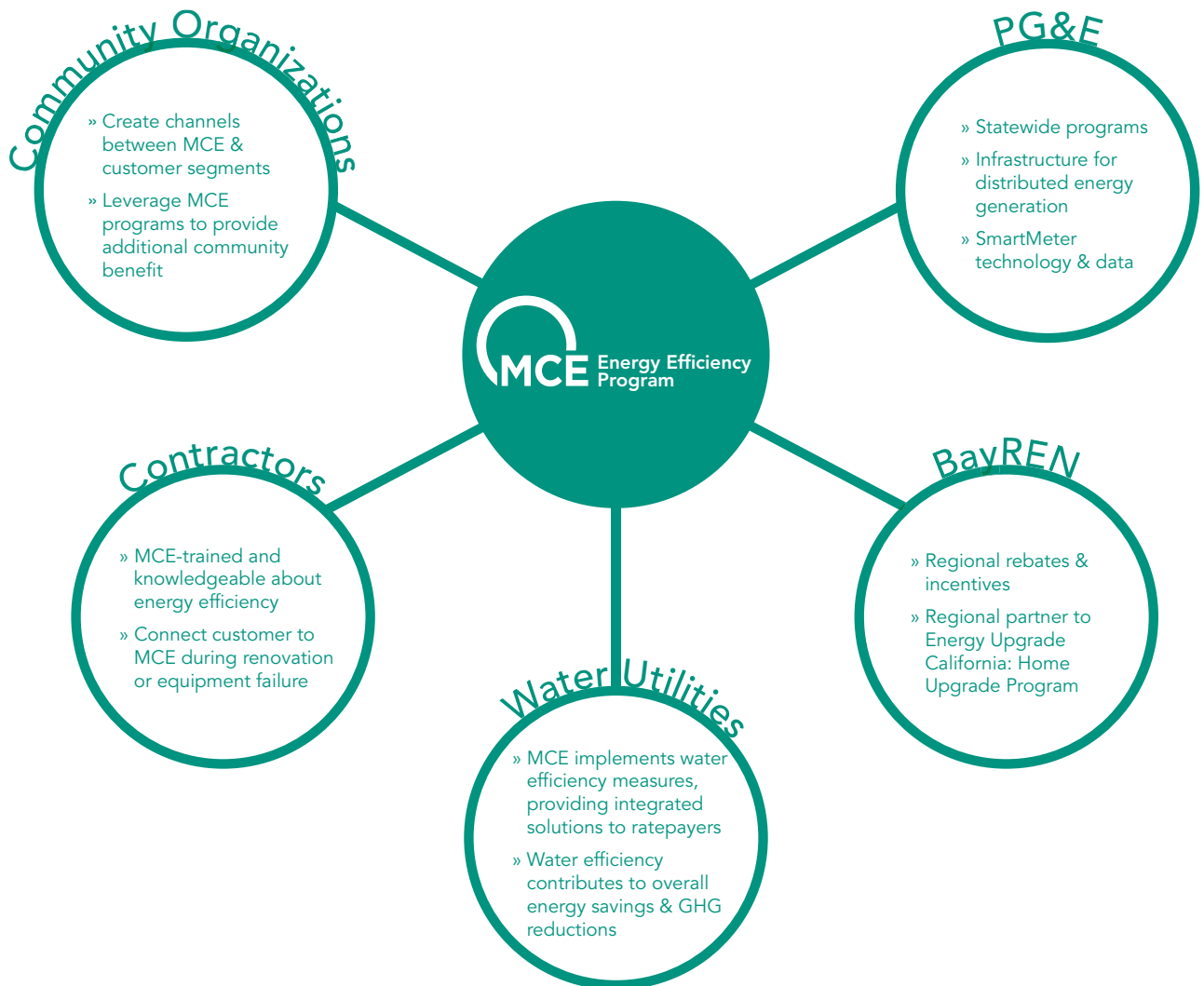


the CPUC to administer ratepayer funded energy efficiency programs in August of 2012. Since that time, MCE’s energy efficiency programs have ramped up significantly with a 45% increase in claimed savings from 2013–2014.¹ MCE’s programs provide energy efficiency services to hard to reach market sectors, such as small commercial and multifamily sectors, while also focusing on non–energy benefits such as job creation, health and safety, and good customer service.

¹ Gross electricity savings as reported to the CPUC in MCE’s annual reports. Available at <http://eestats.cpuc.ca.gov/>

The MCE 2016 Energy Efficiency Business Plan (Business Plan) articulates MCE’s ten–year vision to dramatically ramp up its role in providing energy efficiency programs. The Business Plan demonstrates how MCE will build upon its strategic advantage as a local government agency to leverage local connections and continue the upward growth of existing energy efficiency services (Figure 2). The Business Plan relies on a mix of energy usage data with building characteristics information to identify key priority areas for energy efficiency investment. The Business Plan details how MCE will look beyond energy efficiency, focusing on a suite of demand

Figure 2. MCE as a Critical Hub



management strategies that are more meaningful to customers and can achieve greater greenhouse gas mitigation than energy efficiency alone.

2.1 Key Innovations

The Business Plan contains five cornerstone elements. Together, these elements lay the foundation for a bold departure from the current status quo of well-intentioned but confusing, siloed offerings. Instead, MCE offers a customer-centric, cross-cutting, and streamlined approach. The five elements include:

- » **Integrated Program Delivery Model:** MCE will assist customers with an integrated and comprehensive approach to resource conservation – providing a one-stop-shop for everything from traditional building efficiency upgrades to solar hot water, water efficiency, battery storage, load shifting, and electric-vehicle charging. This model is seemingly simple, yet in reality requires innovative systems-thinking and a nimble approach. Promoting resource conservation through an integrated platform is a critical approach to achieving deep greenhouse gas reductions.
- » **Single Point of Contact (SPOC):** Highly-trained SPOCs will present a uniform and integrated presentation of opportunities across demand side management strategies. SPOCs will provide personalized attention, follow-through, and assistance identifying solutions that meet customers' needs, budget, and levels of readiness for change (thereby minimizing the barriers that often plague projects during the initial phases). Finally, SPOCs will play a critical role in promoting project phasing and presenting financing offerings.
- » **Sophisticated Customer Relationship Management (CRM) System:** MCE's advanced

CRM will enable SPOCs to promote an integrated program delivery model. In essence, the CRM will enable greater assessment to completion rates by assisting with an ongoing relationship between the property and the program. It will enable tailored solutions based on data for targeted customer segments.

- » **Customer Value Chain Optimization:** In an effort to achieve and sustain excellent customer service and satisfaction, MCE will roll out innovative ways to decrease customer barriers to participation. Elements include data-driven targeted outreach, customized assessments promoting integrated resource conservation, aggregated and tailored incentives (one-stop shop for local, regional, statewide and national rebates and incentives), workforce development, and advanced program performance monitoring techniques.
- » **Instantaneous Feedback Loop:** To ensure continuous program improvement and sustained excellence, MCE will leverage customer satisfaction surveys, smart meter data, and other qualitative and quantitative monitoring sources.

2.2 Innovations by Market Sector

MCE is focused on streamlined and easy to access programs that are tailored to the customer. Thus, programs are organized around sectors, (e.g. residential, commercial, and industrial), and each sector includes distinct strategies. Importantly, these strategies are not proposed as distinct programs but can be interwoven where appropriate.

- » **Single-Family Residential:** MCE will develop a website to provide more educational resources to customers, including bill analysis and connection to local programs. A suite of rebate options will be provided to meet customers where they are,

including one-off rebates as well as comprehensive rebates.

- » **Multifamily Residential:** MCE will continue its successful Multifamily Energy Efficiency Program, but will expand offerings to include single rebates to engage more customers. The program will continue to introduce new concepts, such as point-based incentives and project phasing, to gain participation from a variety of property types.
- » **Industrial:** MCE's strategy for serving industrial customers allows for one-off rebates as a 'hook' to get customers engaged in the program, and then builds on positive customer experiences to develop deeper relationships and ongoing energy improvement plans.
- » **Commercial:** The commercial program acknowledges the distinction between small businesses, which are best served by direct install delivery models, and medium to large businesses, which benefit from deeper assessments and commissioning. The program introduces a strategic energy conservation model which engages a company from operation and maintenance staff up to the C-level using dashboard technology to track and troubleshoot energy projects. This program will also leverage energy use disclosure laws (Assembly Bill (AB) 802 (2015)) to encourage action.

- » **Agriculture:** The agricultural sector in the MCE service area is characterized largely by dairies and vineyards, both of which are intimately connected to commercial and industrial operations. MCE envisions a 'farm to table' model of agricultural program delivery that integrates traditional agricultural offerings, such as lighting and motor upgrades, with a vertical analysis of companywide savings opportunities. The program will also seek opportunities to improve the condition and efficiency of farmworker housing through the multifamily program, where relevant.

2.3 Conclusion

By uniting these powerful elements in one integrated Business Plan, MCE aims to promote energy efficiency as a lifestyle. This bold vision is the only path forward to achieve the aggressive state goals and mandates put forth in the Clean Energy and Pollution Reduction Act (California Senate Bill (SB) 350 (2016)), the California Long Term Strategic Plan, the Global Warming Solutions Act (California AB 32 (2006) and SB 32 (2016)). MCE's 2016 and Beyond Business Plan delivers a roadmap to utilize the maximum resources available to combat the growing threat of climate change, transform the landscape of resource conservation efforts, and achieve California's ambitious goals. ■

3. INTRODUCTION

A Competitive Opportunity for Energy Efficiency

The effects of our warming climate are here. They are currently being experienced in California and across the globe in the form of drought, flooding, severe weather, and sea level rise. We are now at a critical juncture with regard to stemming further climate change and its negative impacts.

The Intergovernmental Panel on Climate Change (IPCC) has indicated that to avoid catastrophic warming, greenhouse gas (GHG) emissions have to be reduced by 80% from 1990 levels. California Governor Jerry Brown created an executive order (B-30-15) to reduce the state's GHG emissions to 40% below 1990 levels by 2030 which was codified in SB 32 (2016). Governor Brown also signed SB 350 (2015) into law, requiring a doubling of energy efficiency in buildings. This should help put the state on target to achieve GHG emissions 80% below 1990 levels by 2050, a necessary action if we are to live sustainably on the planet.

Energy efficiency is California's preferred energy resource. It is an important approach to reducing GHG emissions and a necessary strategy to employ

for meeting climate change targets. All reasonable scenarios of climate change mitigation rely heavily upon capturing the significant cost-effective potential in energy efficiency and strive toward zero net energy (ZNE) usage and a dramatic drop in GHG emissions.

Capturing the level of energy efficiency required under SB 350 will require that we move beyond a

"rebate per widget" mentality in energy efficiency program delivery. Reaching our climate change goals requires a bold new focus on energy efficiency and a notable reworking of the way energy efficiency programs are delivered in California. The old, top-down, investor-owned utilities (IOU) programs must be augmented or replaced by more nimble, responsive, localized approaches.

Effective reversal of climate change will also require significantly greater participation in demand-reduction programs by each market sector involved in energy efficiency programs. Program administrators need to move toward a future in which energy efficiency is the status quo and subsidies are no longer necessary to drive market participation in energy efficiency programs. In short, they must develop and articulate a vision for achieving

"Reaching our climate change goals requires a bold new focus on energy efficiency and a notable reworking of the way energy efficiency programs are delivered in California."

transformation in how California residents see and use energy on a daily basis.

Fortunately, there are more opportunities than ever for customers in every rate class to participate in energy reduction and efficiency. For example, powerful energy efficiency products and technologies now exist to give customers the ability to monitor and control their own energy use. Distributed generation from homes and businesses is helping to close supply gaps in renewables. Electric vehicles offer a no or low-carbon form of transportation that can also assist with renewable energy integration. Innovations such as these represent huge potential to drastically reduce energy demand and ratepayer utility costs as well as to increase the comfort, health, and sustainability of our communities and significantly stem the adverse effects of climbing GHG emissions.

These important emerging opportunities, however, can only be achieved through direct customer engagement and participation. Therefore, an organization's effectiveness with regard to energy efficiency is strongly dependent on an exceptional level of customer service. Those organizations that can react the fastest to ratepayer needs, be nimble in overcoming barriers, and work on the ground with place-based institutions to achieve deep market penetration are best poised to deliver energy efficiency programs with high participation and impact.

California's push toward ZNE and less carbon dependence is spurring massive change across the energy sector and leading to the development of energy producing organizations that are focused on this type of customer engagement and participation. New actors are entering the regulated markets of energy generation, distribution, and efficiency, bringing changes that challenge the notion that

these activities must be carried out exclusively by utility providers. Where IOUs once held a regional monopoly on energy generation, now renewable and distributed energy resources are changing the landscape. Changes are taking place on the procurement side, with local energy collectives and aggregators now purchasing energy from varied sources on behalf of their communities, breaking the regional monopsony of the few utilities that traditionally purchased and delivered power.

The changing landscape within the energy sector has given rise to the Community Choice Aggregation (CCA) energy supply model. This approach allows local governments to aggregate their buying power in order to secure alternative energy supply contracts on behalf of their constituents. CCAs are taking hold in a handful of states across the U.S. In fact, as of 2014, CCAs were serving nearly 5% of all Americans in over 1300 municipalities,² and this trend is rising.

Marin Clean Energy (MCE) was California's first operating CCA and is a mission-driven, not-for-profit electricity provider that is governed by local elected officials. Its mission and sole motivation is to address climate change by reducing energy-related GHG emissions through the use of renewable energy and energy efficiency. While the focus of this document is on energy efficiency, MCE's outlook is much larger than energy efficiency. Integrating energy and water efficiency, renewable energy, distributed generation, and energy delivery, MCE moves toward solutions that achieve maximum GHG reductions. MCE's goal is to drive market transformation by engaging more people than ever in energy reduction. Part of MCE's success derives from its community-based structure and strong local partnerships to achieve deep market penetration. With a focus on engaging customers in energy reduction initiatives, MCE aims to transform

2 <http://www.leanenergyus.org/cca-by-state/>

the energy market by decreasing the need for incentives and reducing reliance on subsidies.

MCE puts a high priority on delivering exceptional service and personalized value to its customers. MCE utilizes its local knowledge to effectively develop innovative programs that are well tailored to specific regions and result in high levels of customer participation (e.g., point-based incentives and project phasing in the multifamily sector).³ This approach has created points of entry for projects that were not well served under current statewide programs, while at the same time creating new models that can be implemented in other communities. MCE's customer-driven, tailored approach puts the organization in a strong position to achieve the levels of customer engagement and participation necessary for realizing the emerging energy efficiency opportunities that now exist.

MCE's uniquely customer-focused program ushers in a new approach to energy efficiency program planning that gives the organization a significant

advantage in achieving deep market penetration. MCE's Business Plan outlines the key aspects of this focus on customer experience and the emphasis on localized solutions, along with a long-term vision and strategies around market acceptance and penetration. The underlying foundation of MCE's program design is based on customers' needs; its strategic position as a leader in customer service forms the basis for its business approach to energy efficiency.

The pages that follow contain a further exploration of how MCE will leverage its strengths to expand the base of participating customers in its energy efficiency program. It is structured as a Business Plan, as we believe that MCE needs to make a business case for increased investment in energy conservation and GHG reduction. The organization will build on its success and reengage existing energy efficiency customers toward continuous improvement. MCE will closely track key performance indicators and adjust incentives to increase cost effectiveness over time. As a local organization invested in creating mutual benefit with regional partners, MCE will also provide workforce development and other opportunities that generate additional community benefits. ■

³ Frequently Asked Questions MCE Multifamily Energy Efficiency Program, MCE. (2016) p.4. Available at mcecleanenergy.org/multi-family-savings

4. BACKGROUND

MCE's mission statement is to address climate change by:

- » Reducing energy related greenhouse gas emissions
- » Securing energy supply, price stability, and energy efficiency
- » Providing local economic and workforce benefits

MCE promotes the development and use of a wide range of renewable energy sources and energy efficiency programs, including, but not limited to, solar and wind energy production. MCE provides these utilities at competitive rates for all customers.

MCE has proven its business model, saving customers millions of dollars while also reducing GHG emissions and promoting local renewable generation and energy efficiency. MCE is also rapidly expanding its territory. MCE launched in Marin County in 2010 with about 9,000 customers. Today, MCE provides service to 255,000 California customers in Marin County, Napa County and the cities of Benicia, El Cerrito, Lafayette, Richmond, San Pablo, and Walnut Creek. Future enrollment is expected to climb. Given the public's increasing interest in local control, utility bill savings, and GHG reduction, MCE expects interest from local jurisdictions to grow in the coming months and years.

MCE has been a Program Administrator (PA) of ratepayer funded energy efficiency programs under the auspices of the California Public Utilities Commission (CPUC) since 2012, alongside PG&E (an IOU) and the Bay Area Regional Energy Network (BayREN, a local government PA). As a relatively new energy efficiency PA, MCE is not bound to legacy programs or business-as-usual planning traps. MCE is committed to testing innovative solutions and enacting continuous, measured improvements as the organization's reach grows.

4.1 Changes to MCE's Energy Efficiency Directives

In the 2013–2014 Energy Efficiency Portfolio decision, the CPUC limited the roles of Regional Energy Networks (RENs) and CCAs to specific market segments. The CPUC asked that these organizations:

- » Target hard to reach market sectors (such as multifamily and small commercial customers)
- » Target gaps in current IOU statewide energy efficiency programs
- » Pursue innovative programs, technologies, and approaches



MCE AS AN ENERGY EFFICIENCY PROGRAM ADMINISTRATOR

California Public Utilities Code 381.1 authorizes Community Choice Aggregators (CCAs) to become independent administrators of energy efficiency funds and permits them to apply to administer cost-effective energy efficiency and conservation programs.

In 2012, shortly after enrolling all customers in Marin County, MCE brought an Energy Efficiency Program Plan to the California Public Utilities Commission (CPUC) for consideration.

In August of 2012, MCE was approved for \$328,949 of funding to administer energy efficiency programs in its service area, becoming the first local government Program Administrator and the first CCA Program Administrator (Resolution E-4518). This first funding approval was for the authority a CCA holds under subsection 381.1 (e-f) of the CPUC, meaning MCE was only collecting funds from its customers and could only offer programs to its customers. In November of 2012, MCE's application under subsections 381.1 (a-d) to the CPUC for \$4.1 million was approved. This allowed MCE to offer programs to any customer in its service area, regardless of customer status.

When MCE first brought an application to the CPUC, MCE was advised to "avoid duplication of existing IOU programs, focus on hard to reach market sectors, and provide innovative program concepts" (D. 12-11-015). Subsequently, D. 14-01-033 was put into place, establishing the first guidelines for CCA energy efficiency programs and directing MCE to achieve a total resource cost (TRC) test equivalent to the investor-owned utility program administrators following the third year of program administration, while lifting previous restrictions on the types of programs a CCA could apply to administer. Thus, MCE's Business Plan and expanded programs seek to align with the direction of the CPUC and apply for a balanced portfolio to better serve its customers.

The CPUC initially chose a regional approach to cost effectiveness, rolling the budgets and savings of the CCAs into a larger IOU service territory-wide equation. During the 2013–2014 program cycle, the CPUC developed first-time regulations on CCA-administered energy efficiency programs. Decision 14–01–033 released CCAs from the previous program limitations and required them to achieve the same cost effectiveness as IOUs following the third year of their programs. The total resource cost (TRC) test measures the net costs of a demand-side management program as a resource option based on the total costs of the program, including both the participants' and the PA's costs, divided by the total benefits of the program, including energy cost savings.

The CPUC's new directive asks MCE to achieve a TRC of at least 1.25 and provides MCE with a good opportunity to revise its portfolio. Focusing on IOU program gaps in hard to reach markets while simultaneously striving to attain the 1.25 TRC required of IOUs proves to be challenging. MCE is shifting to a more balanced portfolio that will allow it to attain the 1.25 TRC benchmark. MCE will shift its focus from being a niche provider to positioning itself as the primary provider of energy efficiency to the ratepayers in its service area. It will offer broader programs and rebates, including those it avoided in the past because of program overlap with other providers.

“Because of its local connectivity, MCE can focus on the local needs and engagement of communities without the cumbersome responsibility of needing to manage a complicated and aging energy and distribution system.”

sustainable changes in the structure or functioning of a market achieved by reducing barriers to the adoption of energy efficiency measures to the point where further publicly-funded intervention is no longer appropriate in that specific market.”⁴ For such a vision to be a reality, ratepayer programs need to be designed in such a way as to slowly decrease the reliance on subsidy to influence energy efficient behavior. The Long Term Energy Efficiency Strategic Plan (Strategic Plan), adopted jointly by the CPUC and the California Energy Commission (CEC),⁵ was developed to help create a roadmap for

the utilities on how to achieve this goal. The 2007 CPUC Decision instituting the Strategic Plan explicitly states “a key element of the strategic plan would be that it articulates how energy efficiency programs are or will be designed with the goal of transitioning to either the marketplace without ratepayer subsidies, or codes and standards.”⁶ MCE has taken the opportunity presented by the development of a Business Plan to design a program that has declining ratepayer subsidies over time. MCE will utilize the strategic advantages offered by

its nimble, integrated, and non-siloed organization to institute a program designed to grow and adapt as the energy market matures into an increasingly decentralized and customer oriented market. MCE focuses on the concept of ‘customer transformation,’ or the idea that through a positive experience with energy efficiency, customers will be more likely to choose the energy efficient option in the future. MCE believes the customer transformation emphasis

4.2 A Long Term Vision for Energy Efficiency

The California Public Utilities Commission defined market transformation in 1998 as “long-lasting,

4 D. 98–04–063, Appendix A, CPUC.

5 Longterm Energy Efficiency Strategic Plan, CPUC. 2009. Available at www.cpuc.gov/WorkArea/DownloadAsset.aspx?id=5305

6 D. 07–10–032, CPUC.

has been missing from existing programs, which tend to emphasize policy and program design over customer experience. MCE will leverage distributed energy resources to provide enhanced value to both customers and the grid to spur the integration of renewable energy and other distributed energy resources.

By developing a roadmap for individual customer accounts, MCE aims to achieve great advancements in attaining zero-net energy for existing buildings over the coming decade — a goal firmly aligned with the Strategic Plan.

4.3 Program Coordination

MCE proposes a program coordination approach that accommodates the evolving energy efficiency landscape as statewide and third party programs take on new forms. To facilitate these changes and to enable the cost-effective execution of MCE's portfolio, MCE proposes to assume the role of the Single Point of Contact (SPOC) within its service area, acting as a downstream liaison. MCE further proposes to receive savings attribution for all program activities that occur within MCE's service area.

The role of downstream liaison will require other programs to coordinate with MCE prior to performing outreach to customers in MCE's service area. This coordination will enhance MCE's ability to serve as the SPOC for downstream energy efficiency programs. MCE is not proposing to provide all outreach activities for non-MCE programs. In its role as downstream liaison, MCE will help eliminate customer confusion about multiple program offerings and may preclude duplicative IOU and Third Party programs from customer acquisition activities in MCE's service area. MCE will coordinate with existing statewide and local government programs to avoid overlapping customer outreach activities.

MCE's portfolio acknowledges and accounts for the fact that its service area also overlaps geographically with the Bay Area Regional Energy Network (BayREN) and certain Local Government Partnerships (LGPs). MCE is actively coordinating with BayREN and relevant LGPs to avoid duplication and overlap of programs. Where overlap is unavoidable, however, MCE will coordinate marketing and outreach with these partners to minimize customer confusion and maximize program uptake. MCE will also coordinate with the statewide Marketing Education & Outreach (ME&O) administrator to ensure the role of downstream liaison is adequately considered. MCE requires attribution of savings for programs within MCE's service area to maintain a cost-effective portfolio. The Commission authorized all PAs to share the attribution for upstream and midstream activities under the statewide programs in D.16-08-019. MCE proposes to extend that rationale to include downstream program activities within MCE's service area.

MCE's limited geographic range substantially limits its ability to develop a balanced and cost-effective portfolio. MCE's service area is heavily comprised of residential and small- to mid-sized commercial customers. These customer segments are historically among the least cost-effective to serve, especially with comprehensive programs. Competing programs that can capture the more cost-effective savings opportunities compound this problem. MCE proposes to receive full savings attribution for the purpose of calculating cost-effectiveness. In exchange for receiving attribution, MCE will contribute a portion of its program budget to the program that accomplished the savings where appropriate.

Table 1 provides information about how the role of downstream liaison and savings attribution will be coordinated with multiple types of programs.

Table 1. Coordination in MCE's Role as Downstream Liaison and with Savings Attribution

Entity	Required to Coordinate with MCE Prior to Outreach	MCE has Authority to Preclude Duplicative Offerings	100% Savings Attribution for Activities within MCE Service Area	MCE to Reimburse from Program Budget for Attribution
Upstream & Midstream Statewide Programs	No	No	Yes	Yes
Downstream Statewide Programs	Yes	No	Yes	Yes
Third Party Programs	Yes	Yes	Yes	Yes
Other IOU Downstream Programs	Yes	Yes	Yes	Yes
REN Programs	Yes	No	Yes	Yes
LGP Programs	Yes	No	Yes	Yes

4.4 Opportunities in California's New Program Cycle

Beginning in 2015, the CPUC began moving from a 2–3 year approval cycle to a 10–year rolling cycle. 2015 is considered “Year 0” of the first 10–year rolling cycle. Portfolio budgets approved in 2013–2014 are approved through 2025, with additional considerations for new Proposition 39–related school funding starting in the 2015 portfolio year. During this transition, the CPUC is encouraging PAs to consider the implications of a 10–year cycle on their program planning and how the program administration process may be improved.

The switch to a 10–year rolling cycle presents yet another opportunity for MCE to look strategically at its efforts to date and to enact a bold vision for energy efficiency over the coming decade. The rolling cycle provides an opportunity to consider how cost effectiveness can be improved with a long–term vision. For example, programs designed to promote customer transformation over a 10–year period may begin with low participation and high incentives, with these two reversing as the program

matures. Programs that focus on low–hanging fruit to achieve cost effectiveness will not easily bring customers from modest energy savings toward Zero Net Energy (ZNE). MCE's approach is also anticipated to improve the Program Administrator Cost (PAC) test as customers grow more willing to take on costs to achieve energy efficiency.

One of MCE's most important differentiators is that it is an energy provider designed with today's needs in mind.

Fortunately, MCE is in a unique position. As a local government, MCE is very close to its customer base. MCE can focus on energy efficiency and customer responsiveness in the service of effective and significant GHG reduction. MCE can be nimble and take advantage of the best new opportunities provided by smart grid technology, distributed energy, and new technologies. Most importantly, because of its local connectivity, MCE can focus on the local needs and engagement of communities.

MCE's focus on reducing GHG emissions, combined with its flexibility in addressing customer needs,

sets its energy efficiency program apart from other ratepayer funded programs. MCE's commitment to helping customers embrace energy efficiency at all levels of engagement will drive meaningful market transformation: increased customer demand and decreased need for incentives and subsidies. As it

establishes its track record, MCE recognizes that this momentum provides an important opportunity to fully implement its vision and the business approach that will guide the next decade of its energy efficiency services. ■

Purpose of MCE's Business Plan for Energy Efficiency

- » Clearly articulate MCE's value proposition
 - » Establish a portfolio oriented to the customers' needs
 - » Seize the opportunity of a transition to a 10-year rolling cycle to assess energy efficiency strategy
 - » Set a strategic vision for energy efficiency as MCE's territory and reach grow
 - » Articulate strategic advantages and position MCE as the primary provider in its service area
 - » Demonstrate MCE's local customer knowledge through its energy efficiency vision
 - » Establish a commitment to innovation and continuous improvement
-

CALIFORNIA'S ENERGY EFFICIENCY GOALS

Californians' per capita electricity use has remained relatively flat over the last 20 years, while per capita use has risen 33% nationally. These savings have allowed California power facilities to expand capacity at two-thirds the rate of the rest of the nation. This is due in part to California's ambitious energy reduction goals.

Energy efficiency is California's preferred energy resource. Public Utilities Code Section 454.5 requires that IOUs "meet unmet resource needs with all available [energy efficiency] and demand reduction that is cost-effective, reliable, and feasible." It further requires the CPUC to establish targets for IOUs to achieve all cost-effective electric and gas energy efficiency goals. These targets are released by the CPUC with each program application cycle.

While these targets do not apply to CCAs, MCE has chosen to emphasize energy reduction as a core component of its Integrated Resource Plan. MCE is also committed to supporting California's many other energy and GHG reduction goals, including:

- » All new residential construction in California will be ZNE by 2020;*
- » All new commercial construction in California will be ZNE by 2030;*
- » The Heating Ventilation and Air Conditioning (HVAC) industry and market will be transformed to ensure that its energy performance is optimal for California's climate;* and
- » All eligible low-income customers will be given the opportunity to participate in low-income energy efficiency programs by 2020*
- » 32,000 GWh and 800 million therms by 2020**
- » Achieve 1990 GHG levels by 2020 and 40% below 1990 levels by 2030;***
- » Increase the energy efficiency improvements of buildings 50% by 2030 (SB 350 signed by Governor Jerry Brown October 7, 2015);*** and
- » Establish cleaner sources of heating fuels***

Sources:

*Big Bold Energy Efficiency Strategies (BBEES) from the California Energy Efficiency Strategic Plan, a collaborative statewide effort to identify market barriers and develop cross-industry solutions.

**California Air Resources Board's Scoping Plan for AB 32.

***GHG reduction targets set first by AB 32 (2006) and strengthened by Executive Order from Governor Jerry Brown and codified by SB 32 (2015).

5. MCE'S STRATEGIC ADVANTAGES

From an energy efficiency perspective, MCE is a leading provider due to its key differentiators:

- » GHG reduction is MCE's top priority
- » MCE is driven by constituents, not shareholders
- » MCE leadership is local and responsive to community needs
- » Local partnerships provide a foundation for deepening market penetration

Greenhouse Gas Reduction is MCE's Top Priority.

Reducing GHGs and mitigating the effects of climate change is MCE's central mission.

MCE's carbon-reduction goal is in strong alignment with SB 350, SB 32 and Governor Jerry Brown's executive order to establish GHG reductions 40% below 1990 levels by 2030, a necessary step to ultimately reaching 80% reductions by 2050. To support these goals, MCE evaluates and prioritizes activities across operations according to GHG reductions

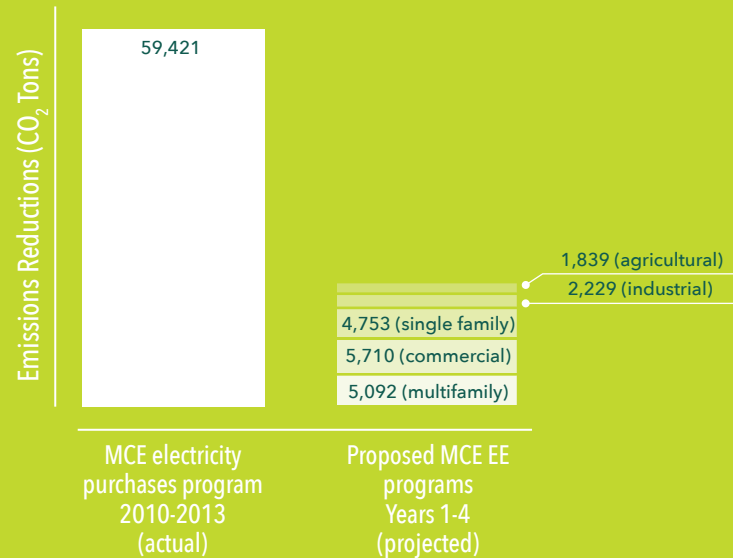
rather than energy savings per se. The energy world is rapidly changing; SmartMeter technology has enabled customers to be in control of how and when

"Because MCE serves communities not shareholders, ... MCE can optimize energy and efficiency without the pressure of making profits for [external] shareholders."

they use energy across their properties, integrating energy conservation, energy efficiency, distributed generation, and demand response strategies into simple, easy to understand dashboards. These new strategies are enabling customers to become a part of the renewable energy solution, turning homes and businesses into providers of grid services. The energy solutions of tomorrow will not be focused on a single end use or single conservation strategy. Achieving our carbon reduction goals as a state will require recognizing this changing landscape and utilizing these emerging integrated solutions as a key component of renewables integration and demand reduction.

MCE's multifamily program features a strong emphasis on high-efficiency natural gas measures, which can offer considerable GHG reductions. In addition, MCE proposes to integrate fuel-switching measures where possible. See Figure 3 for the estimated GHG impacts of MCE's energy efficiency programs relative to MCE's electricity purchases.

MCE's primary focus on GHG reductions enables its energy efficiency strategy to drive towards customer transformation in unique ways. Aligning incentives

Figure 3. CO₂ Emission Reductions by MCE Program

with indicators of increasing energy efficiency adoption will allow MCE to take a long-term approach to energy efficiency program planning. Reducing incentives based on customer participation will allow ratepayer dollars to go further and reduce direct costs to MCE's programs. MCE anticipates this approach will improve the PAC results over time and free up resources for more comprehensive projects. Programs like the California Solar Initiative have demonstrated the success of this approach, and similar logic could be applied to penetrate harder to reach markets or to bring customers in the later stages of energy efficiency to full ZNE. Continuing to reach beyond the low-hanging fruit and toward these deep, sometimes difficult to achieve energy savings is a key component of meeting California's carbon reduction goals.

MCE is Driven by Constituents, not Shareholders.

California is the nation's most populous state, and its ratepayers are geographically, demographically, and politically diverse. Engaging these diverse ratepayers in energy efficiency efforts will be critical in reaching California's ambitious energy reduction goals.

While certain statewide programs are beneficial to customers, the size of these programs can inhibit PAs from taking a more proactive approach in reaching customers. A strength of the CCA model is that its designed purpose is to meet the needs of local customers. Not only are MCE's local communities its customers, but deep market penetration is how MCE creates "shareholder return" in the form of greater GHG reductions and services for the community. As a result, MCE strives to understand customers' specific needs and motivators, which in turn drive the design of MCE's energy efficiency program. The program is designed for ease of use with greater accessibility to program staff that can navigate offerings and provide integrated, streamlined solutions. It includes activities that increase MCE's customer knowledge, such as use of sophisticated CRM software, customer satisfaction feedback, and collaboration with organizations deeply seated in the local community.

MCE's customer-centered approach directly addresses the following barriers and missed opportunities:

- » There are a myriad of resource conservation programs made available by a variety of administrators, and customers have a hard time navigating their options or accessing multiple offerings within the scope of one project.
- » Because program offerings can be inflexible, many customers with small- to medium-sized projects as well as projects that must happen in phases (as tenants move out, for example) often have a hard time taking advantage of incentives.
- » New technologies and incentives are frequently marketed broadly, rather than targeted to customers for whom the solution meets a clear need.
- » Opportunities to follow up with past energy efficiency customers are rarely utilized, often due to poor household/building data collection at the time of assessment.
- » Private interests often push IOUs to focus on opportunities that will offer the biggest shareholder incentives rather than toward integrated, customer-focused solutions that target overall GHG emissions.

MCE provides a competitive advantage over IOUs when it comes to addressing customer engagement and participation barriers. MCE's programs take a flexible approach to the uniquely local characteristics of commercial, residential, industrial, and agricultural customers in its service area. CRM systems track previous interactions with, and behaviors of, ratepayers. This allows MCE to anticipate customer needs and to target new technologies and incentives that best meet these needs. MCE is able to leverage and include statewide programs in its customized solutions for each customer, thereby increasing the overall value provided.

Because MCE's customers are also constituents, an important alignment takes place because the need to make profits for external shareholders is absent. MCE can make decisions that are in the best interests of those it serves. This means that MCE can optimize energy and efficiency without the pressure of making profits for shareholders.

MCE Leadership is Local and Responsive to Community Needs.

As a CCA, MCE is governed by local elected officials and supported by community leaders and local institutions. Inherent partnerships with city councils, planning and building departments, community organizations, local banks, contractors, local utilities, and technical assistants aggregate the opportunities available to MCE's ratepayers, while also fostering community connectedness and trust between parties. Ratepayer fees are invested in energy programs that directly benefit constituents without diverting funds to private investors. MCE's energy efficiency programs are discussed at publicly noticed board meetings. This offers transparency and allows for constituents to provide immediate feedback on program design and implementation.

MCE is governed by a board of directors comprised of elected officials from the communities it serves. Because these elected officials need to respond to their constituents, MCE also shares this responsibility for meeting the needs of the local community. This means that MCE can undertake local initiatives that are unlikely to be led by IOUs.

Further, many local governments are under self-imposed mandates via locally adopted Climate Action Plans to manage carbon emissions. Because of MCE's strong connectivity to local governments, MCE is uniquely positioned to partner with communities in order to help them address their most pressing needs.

Local Partnerships Aid Market Penetration.

MCE maximizes the strengths of a flexible, locally connected energy efficiency program by meeting ratepayers where they are. MCE collaborates with innovative partners to access community-based organizations, schools, local companies, religious institutions, and other organizations as drivers of energy efficient behaviors. Partnerships with place-based organizations that employ local residents as part of energy efficiency solutions engage customers not only as ratepayers, but also as contractors, employers, workers, and community leaders, resulting in behavior change across many important sectors. MCE's ability to deeply penetrate the local market helps to maximize program participation.

MCE's service area also includes a large percentage of low- to middle-income residents (Figure 4). MCE's local partnerships also help to serve hard to reach residents, including renters, low to moderate income households, and non-English speaking households, who often miss out on services due to language barriers. With workforce partners, MCE brings services directly to underserved households by using bilingual contractors and job trainees. Because program contractors are hired directly from the communities they serve, their language skills mirror the communities themselves and allow increased access to non-English speaking households. MCE connects with these segments by participating in over 100 public community events annually, including fairs, farmers, markets, workshops, and presentations to a wide range of audiences. This outreach empowers customers and local contractors to promote programs to their neighbors, friends, and family members to help spread information about energy efficiency through trusted channels. ■

“MCE’s local partnerships also help to serve hard to reach residents, including renters, low to moderate income households, and non-English speaking households, who often miss out on services due to language barriers.”

Figure 4. Income Levels by Service Area



*Includes City of Benicia

Source: 2000 Census

Note: Low income is defined using the criteria for the California Low Income Home Energy Assistance Program for the average household size by county. Middle income is defined as the range from the upper bracket of low income to 120% of State Median Income for the county average household size (<https://www.benefits.gov/benefits/benefit-details/1540>). High Income is any household that earns more than the upper bracket of middle income.

6. MARKET ANALYSIS

Like most businesses and organizations, MCE exists within three different market contexts: (1) the macro context, (2) the industry context, and (3) the local context (Figure 5). Understanding these contexts is important because they show why MCE is so well positioned to deliver energy efficiency programs to northern California customers.

Macro Context. The macro context includes those forces largely outside of a business' control that influence the conditions for the business to operate. The macro context for MCE is quite strong with the political, regulatory, and social/cultural environments favoring significant action on curbing GHG emissions. As a CCA, MCE is well poised to help dramatically cut GHG from energy usage. Because MCE was created for this purpose, it is much more effective than traditional utilities at providing low-carbon intensive energy at competitive rates. Further, its nimbleness allows MCE to quickly adopt and deploy new technologies and to work toward market transformation efforts. Finally, MCE has demonstrated its ability to provide local, high-paying "green" jobs such as solar installers and energy educators. These jobs are needed in many of the communities that MCE serves, and they help meet the goal of many communities to be seen as leaders on environmental issues.

Industry Context. MCE exists in a highly regulated industry, with a long-established regulated monopoly as its primary competitor. While large companies may be good at providing reliable service, they have not proven themselves to be agile in meeting local community needs. MCE can provide targeted, relevant service focused on meeting the specific needs of its customers. Further, its size allows MCE to more readily adapt to new energy saving technologies. By its very structure and scale, MCE can take calculated risks and be more innovative, and thus create customer transformation much faster than larger entities.

Local Context. The local context also strongly favors MCE, as many communities are frustrated with large utilities and seeking alternatives that offer greater local control. MCE can provide its growing and diverse member communities with relevant options that provide energy with a much lower carbon footprint and efficiency programs designed around reducing carbon emissions. Further, MCE creates an easy way for local elected officials to meet many of their climate goals. Finally, MCE's local and customized focus generates distinct solutions to meet the needs of individual customers.

Figure 5. Market Context for MCE

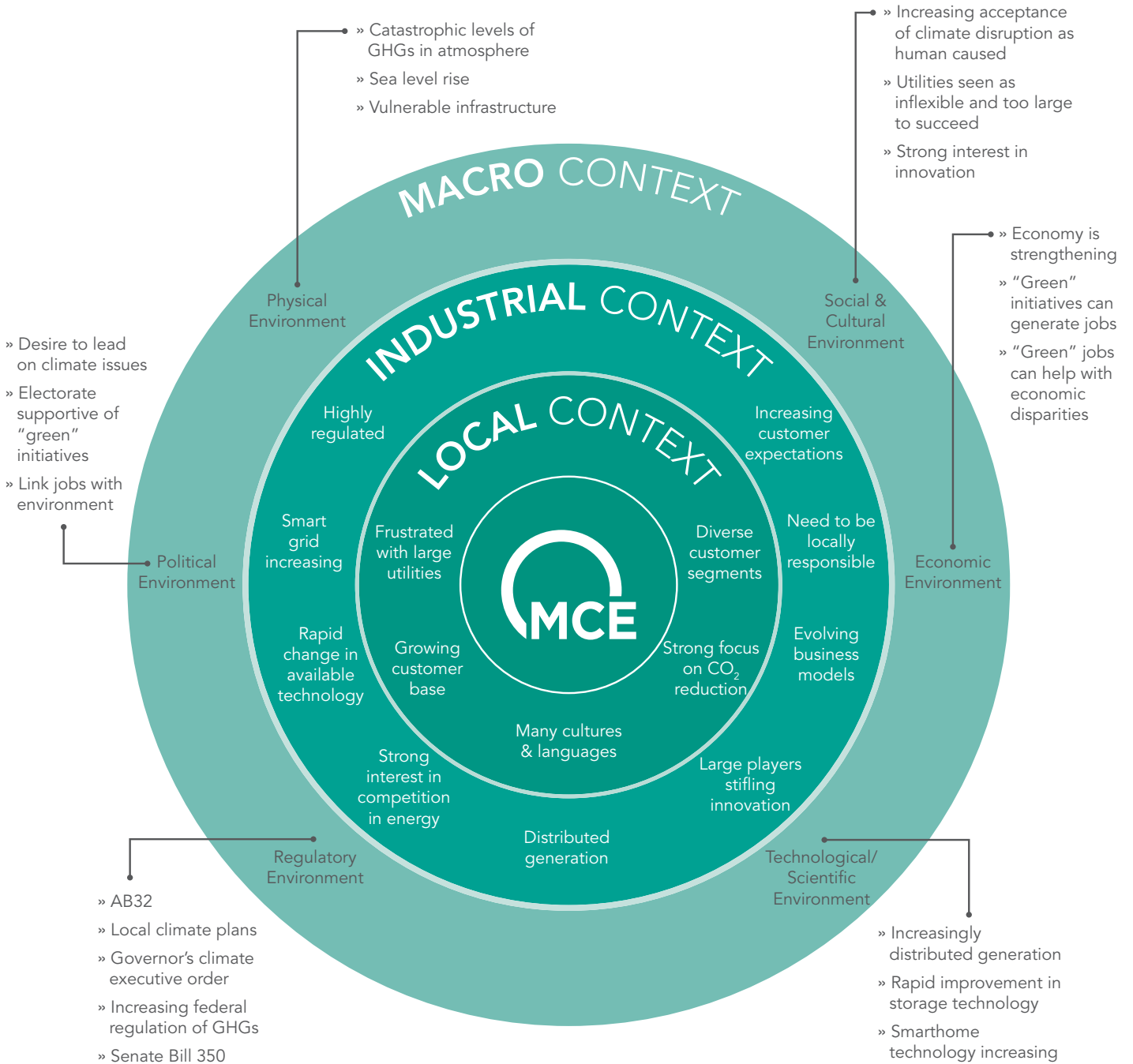
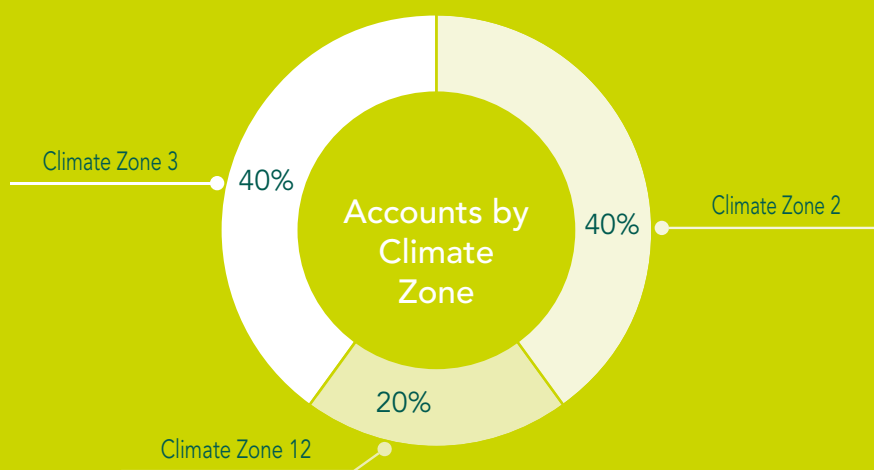


Figure 6. Accounts by Title 24 Climate Zone



6.1 Current Market Boundaries

MCE serves a much broader and more diverse service area today than it did in its founding years. MCE's service area has grown from the largely residential and small commercial customers in Marin to include some of the San Francisco Bay Area's agricultural, industrial, and large commercial ratepayers. MCE's expanded energy efficiency portfolio provides programs designed for all customers in its expanded service area. MCE's service area now spans four Title 24 Climate Zones (Figure 6).

6.2 Customer Segments

MCE serves customers in the following sectors:

- » Residential: Single Family
- » Residential: Multifamily

- » Industrial
- » Agricultural
- » Commercial

The residential segment characterizes the largest number of energy users in MCE's service area at 272,982 accounts, or nearly 90% of all ratepayers. However, MCE's high-consuming energy accounts in industrial, agricultural, and commercial make up 62% of its estimated electricity consumption and over 41% of estimated natural gas consumption, representing an equally important opportunity for efficiency.⁷

⁷ The numbers reported for natural gas consumption exclude agricultural customers due to privacy concerns.

Unincorporated Napa County

- » Climate Zone 2
- » Higher proportion of large, high-energy use single family homes
- » More pronounced air conditioning load
- » Hotels and vineyards comprise large commercial and industrial/agricultural accounts

Napa County

Cities of Benicia, Lafayette, Walnut Creek

- » Climate Zone 12
- » Higher proportion of large industrial accounts and high-energy use homes
- » Cooler winters and hotter summers than neighboring climate zones; more pronounced air conditioning load

Solano County

Marin County

Cities in Marin County

- » Climate Zones 2 & 3b
- » Higher proportion of residential and small commercial accounts
- » High electric vehicle adoption
- » Agricultural uses include dairy and small organic farms

Benicia

Contra Costa County

Richmond

San Pablo

El Cerrito

Lafayette

Walnut Creek

Cities of El Cerrito, Richmond, San Pablo

- » Climate Zone 3a
- » Higher proportion of large industrial accounts
- » El Cerrito has highest "Deep Green" (100% renewable energy) opt-in rates, indicating possible early adopters for new measures and technologies
- » High diversity of languages spoken in Richmond and San Pablo, including Mandarin and Spanish

6.3 Market Opportunities

Consideration of the following opportunities will help guide energy efficiency efforts. Indicators for potential savings include:

- » Buildings constructed prior to California’s building energy code (Title 24)
- » HVAC systems installed prior to 2000 (expected lifespan: 15–20 years)
- » Considering water/energy nexus: residential and small–commercial water fixtures installed before 1992 (Energy Policy Act) and agricultural irrigation systems
- » Lighting upgrade potential, “leapfrogging” incandescent to LED where possible
- » Communities/segments with larger per–account usage compared to others in MCE’s service area

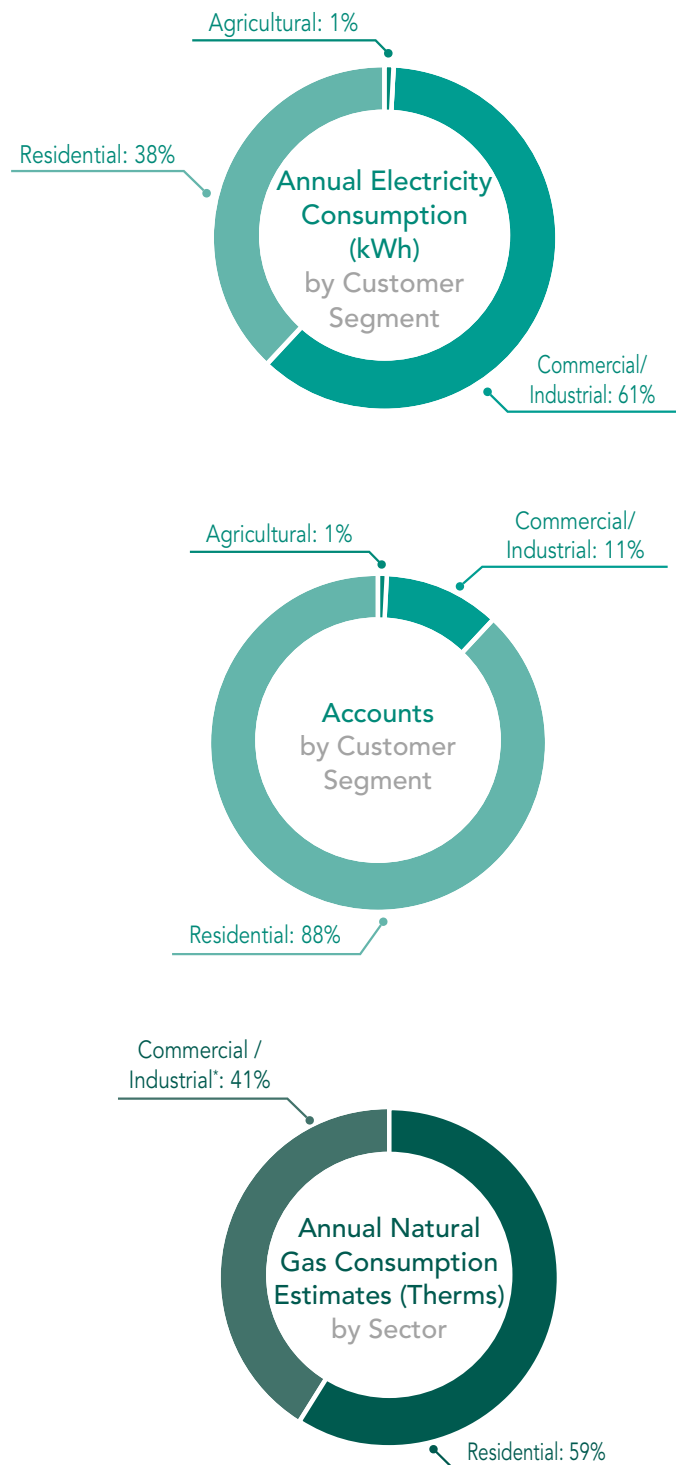
6.4 Building Stock and Energy Efficiency

MCE analyzed information from Housing Elements reports, US Census Bureau State & County QuickFacts, and county assessor data to gain insights into building characteristics.⁸ This information informs program design, marketing and outreach efforts.

Residential Building Stock Characteristics

Construction in the residential sector has followed relatively similar trends within MCE’s service area (Figure 8), with the majority of the building stock constructed during 1950–2000, and close to 46% of the buildings between 1950–1975. The exception is

Figure 7. Customer Segmentation



⁸ The data presented in Figures 7, 8, 9, and 10 comes from county assessor data; Marin commercial data is from a February 2014 Navigant study “BayREN Commercial PACE Financing Market Research Survey.”

*Due to possible privacy concerns and violations of the 15:15 rule, a number of Commercial/Industrial accounts are removed from this analysis.

Benicia, which saw its greatest growth in the 1975–1999 timeframe.

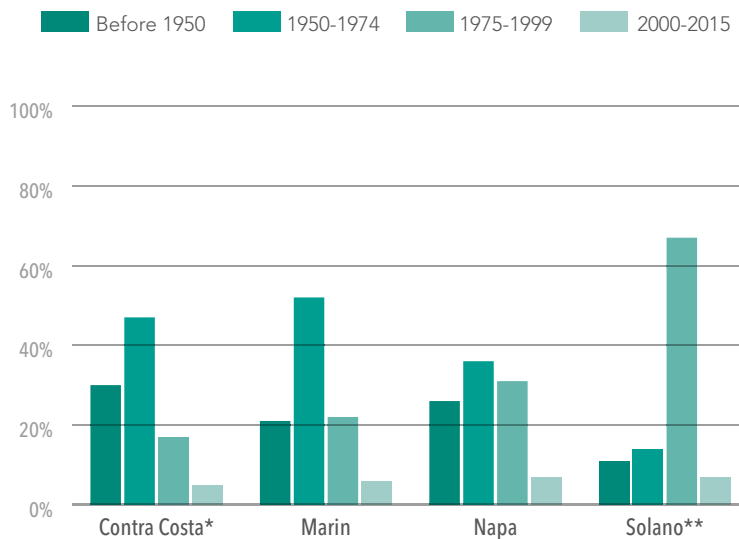
Commercial Building Stock Characteristics

Figure 9 illustrates the diversity of commercial building vintage within MCE’s service area, and can provide insights into trends affecting construction and growth at these locations. Marin County, for example, has seen declining growth since the mid 1970’s due to growth limits and planning regulations, while Benicia has seen considerable growth and expansion during that same time period. Building vintage

provides useful insights for energy efficiency program planning and marketing strategies.

The information presented in Figure 10 provides insights into the types of energy efficiency programs best suited to each of MCE’s service territories. For example, small commercial offerings will be better suited to Contra Costa and Marin County (with the greatest number of commercial buildings under 5,000 square feet); meanwhile, there may be opportunities for large commercial upgrades in Napa, Walnut Creek, Lafayette, and Benicia (which has the greatest share of commercial facilities over 100,000 square feet). ■

Figure 8. Residential Building Vintage by Service Area

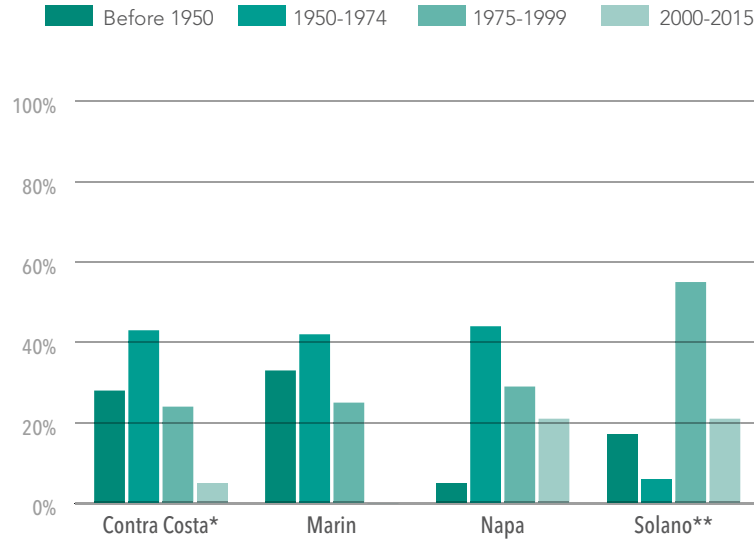


* Includes City of Richmond, El Cerrito, and San Pablo, Walnut Creek and Lafayette

** Includes City of Benicia

Source: County Assessor Data

Figure 9. Commercial Building Vintage by Service Area

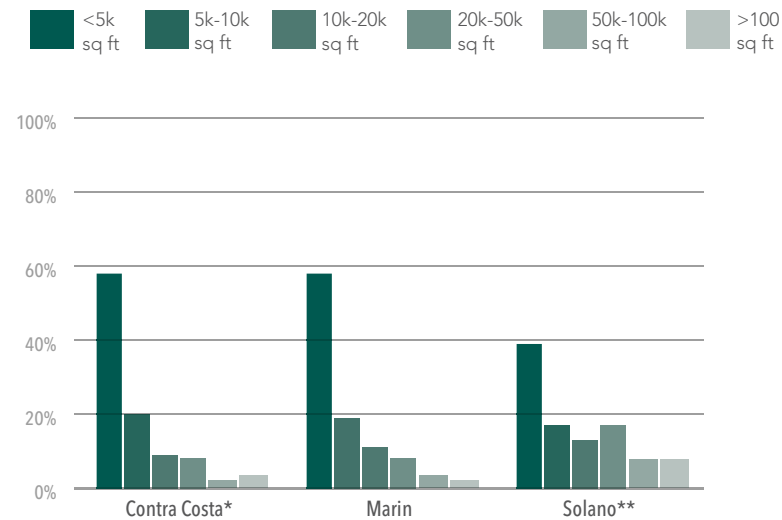


* Includes City of Richmond, El Cerrito, and San Pablo, Walnut Creek and Lafayette

** Includes City of Benicia

Source: County Assessor Data

Figure 10. Commercial Building Size by Service Area
(Sufficient data on parcel size unavailable in Napa County)



* Includes City of Richmond, El Cerrito, and San Pablo, Walnut Creek and Lafayette

** Includes City of Benicia

Source: County Assessor Data

CUSTOMER TRANSFORMATION & DECREASING INCENTIVES

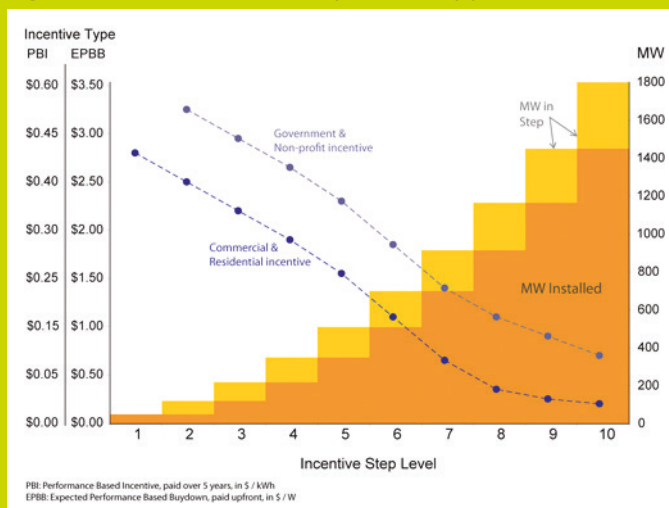
MCE has designed its 10-year energy efficiency program to move towards an energy efficiency market that is not reliant on subsidies using customer transformation logic. As customer demand increases for any given energy measure, and as energy efficiency becomes a way of life, MCE predicts that incentives will be less necessary to increase participation or adoption. Decreasing incentives help move the market to be more demand-driven and less subsidy-dependent. Thus, MCE has set program participation rates that will trigger step-wise incentive decreases at pace with market adoption (described in the Portfolio Budget and Savings section). At the same time, declining incentives will reduce the burden to ratepayers and improve MCE's PAC test results.

The California Solar Initiative (CSI) is an example of a statewide program designed with similar logic. As the solar market has grown, solar electric system costs have dropped and incentives offered through the program have declined according to participation targets. The CPUC divided the overall megawatt goal for the incentive program into ten programmatic incentive level steps. They also assigned a target amount of capacity in each step to receive an incentive based on dollars per-watt or cents per-kilowatt-hour. The megawatt (MW) targets in each incentive step level were assigned to particular customer classes (residential, commercial, and government/non-profit) and allocated across the three IOU service territories, in proportion with each group's contribution to overall state electricity sales.

Once all the MW targets in a particular incentive step level were reserved via CSI application — which could occur at different times for each customer class in each utility service area — the incentive level offered by the CSI Program automatically reduced to the next lower incentive step level. This created a demand-driven incentive program that adjusted solar incentive levels based on local solar market conditions.

The figure below shows how CSI incentives declined as the program progressed through the ten steps and more MWs were installed.⁹ The CSI incentive levels have declined by customer class and utility from January 2007 to the present.

Figure 11. CSI Incentive Step Down Approach.



⁹ <http://www.cpuc.ca.gov/puc/energy/solar/aboutsolar.htm>

7. BUSINESS MODEL

MCE is one of California's CCAs. Community choice aggregation allows communities, residents, businesses, and municipal facilities to pool their electricity demand in order to increase their purchasing power and scale. CCAs also have the authority to administer ratepayer funded energy efficiency programs on equal footing with the existing IOU PAs.¹⁰

With its vision to engage more customers in energy reduction, MCE leverages its local knowledge and customer proximity to penetrate its market. MCE's energy efficiency programs present integrated solutions—including opportunities for distributed generation, on-site energy storage, and water reduction measures—and track opportunities for further engagement with customers. Not only does an integrated approach provide streamlined rather than piecemeal pathways for customers, it also aligns all of MCE's key activities behind its mission of GHG reduction. MCE has carefully considered and invested in some of the partnerships required to provide customers with integrated solutions and has seen the benefits to its customers and programs. It has built upon customer knowledge to create channels that reach customers where they are and provide a suite of programming that is relevant to customer needs.

7.1 Value Proposition: Provide a One-Stop Shop for Energy Savings

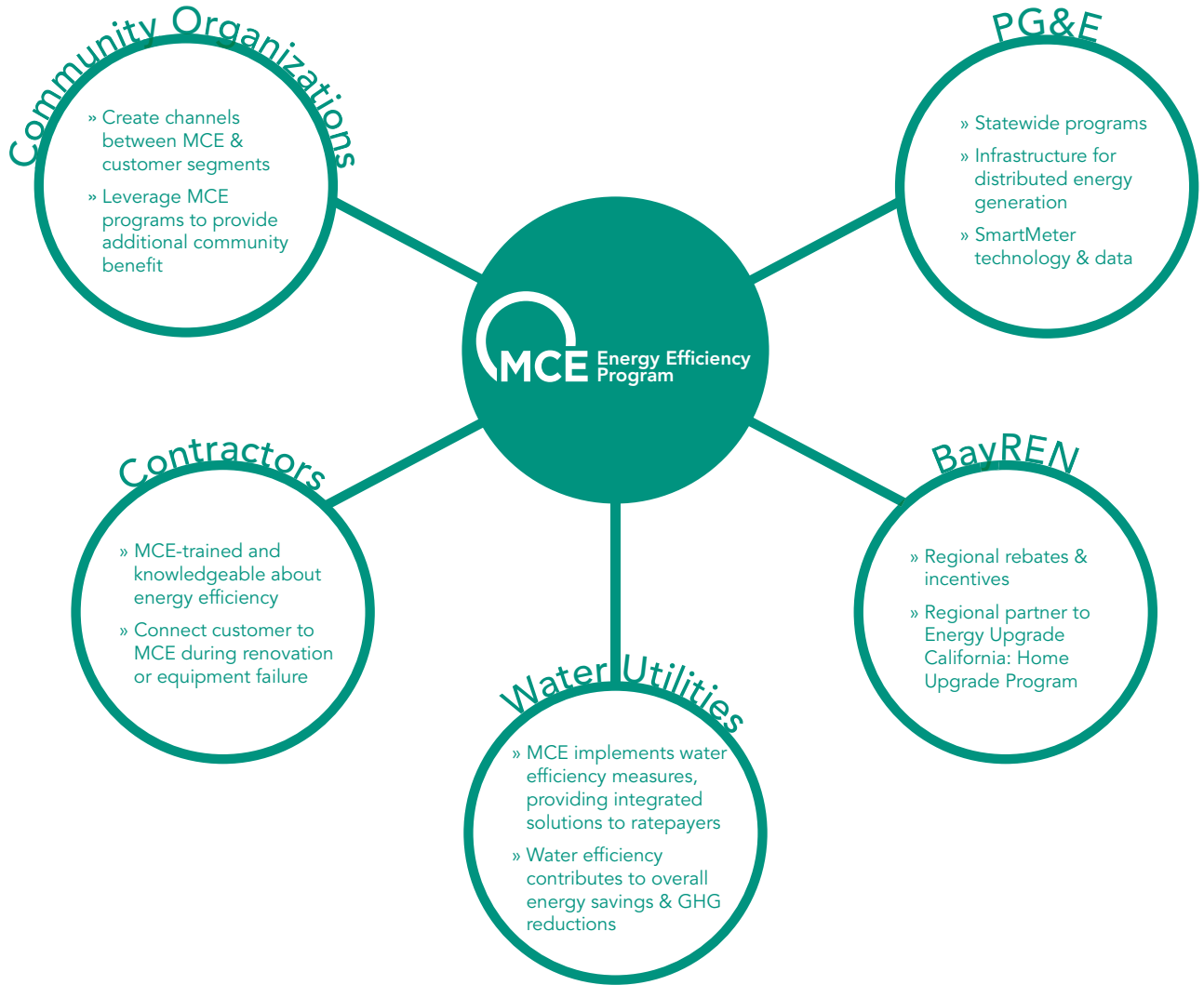
MCE helps customers plan energy reductions holistically by providing integrated, one-stop service. MCE presents customers with complete solutions that best suit their needs by acting as a hub that coordinates all relevant opportunities for energy savings (Figure 12). MCE takes the onus off of customers to navigate all applicable ratepayer programs, including demand response and distributed generation incentives; municipal, county, regional, and national programs; water utility incentives; trained contractors and technicians; and other local offerings. MCE recognizes its proximity to customers as its core strength, allowing MCE to provide tailored, relevant solutions in each of the key segments in its service area.

MCE supports its role as program hub with two customer relationship features: Single Point of Contact staff and sophisticated Customer Relationship Management software.

Single Point of Contact. MCE makes navigating energy savings opportunities simple by providing customers with a Single Point of Contact (SPOC). Across customer segments, the SPOC serves as a facilitator and participant advocate, helping to guide the property owner through the process from initial

¹⁰ California Public Utilities Code Section 381.1 (a-f); California Public Utilities Commission Decision 14-01-033.

Figure 12. MCE as a Critical Hub



contact to project completion. The SPOC develops an integrated assessment process, streamlining multiple program offerings into one customer report.

MCE will effectively remove barriers for residents that face implementation challenges with the aid of the SPOC. The SPOC helps customers take full advantage of MCE’s energy efficiency program by providing the following:

- » **Uniform and Bundled Presentation of Opportunities.** Projects are more attractive to customers and easier to accomplish when all

savings opportunities are bundled together and follow a clear, uniform presentation. Moving incentives toward a point-based system for the multifamily sector has allowed customers to easily calculate the possible incentive from a bundled measure project and combine points to qualify for bigger incentives. This may be an important lesson learned for other programs. The SPOC also helps complete applications for multiple programs, eliminating extra work and information redundancies as well as streamlining the process for customers.

- » **Personalized Attention and Follow-Through.** A SPOC delivery model provides more personalized attention and more follow-through to reduce customer confusion and increase project completion rate.
- » **Project Phasing.** MCE remains in contact with participating properties over time and encourages property owners to implement projects in phases. This allows customers to take advantage of large project incentives without having to implement improvements all at once.
- » **Increased Financing Options.** MCE partners with local banks and leverages Property Assessed Clean Energy (PACE) and statewide financing options to serve building owners who have limited access to private or low-cost financing for retrofits.

Coordinating a full-service solution provides huge value to MCE's ratepayers and helps ensure that customers receive comprehensive energy efficiency solutions. At the conclusion of each energy efficiency project, the SPOC conducts a satisfaction survey and can choose from these projects to develop a case study that serves as a learning tool for MCE and a communications tool with potential customers.

Customer Relationship Management System.

Sophisticated Customer Relationship Management (CRM) allows for an ongoing relationship between the property and the program. MCE aims to provide solutions across customer segments that meet customers' needs, budgets, and levels of readiness for change. By providing resource conservation solutions for customers at any level of desired investment, MCE helps ensure a good customer experience. This increases the likelihood that customers who are not early adopters will consider efficient equipment at future key trigger points, such as at times of equipment failure or refinancing.

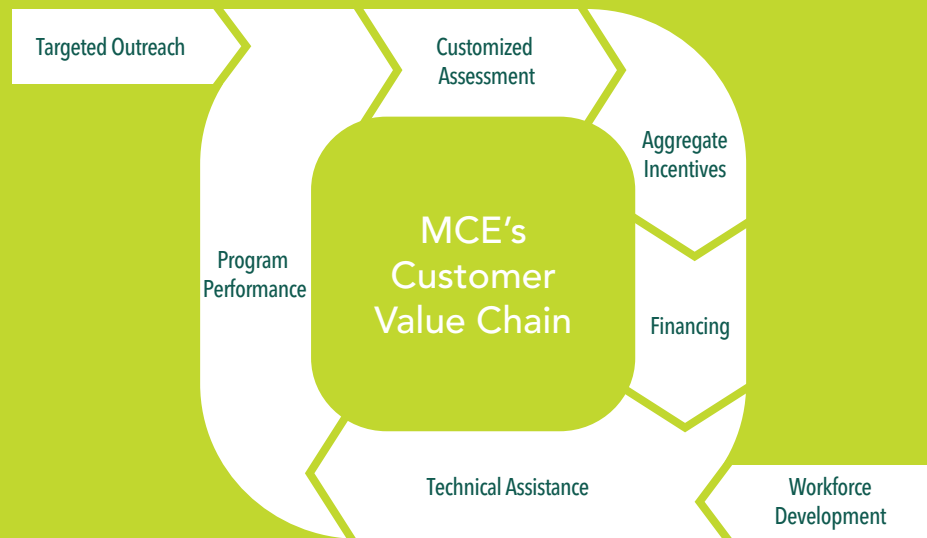
Evolving customer relationships supported by CRM will be key to moving MCE's customers toward ZNE. Sophisticated CRM software allows for an ongoing relationship between the customer and the program by providing a "menu of nudges" based on previous interactions and property knowledge to ultimately move the customer toward ZNE buildings.

Opportunities for future improvements are recorded every time a customer receives an integrated efficiency assessment. If, for example, a customer decides not to take action on a home improvement or replace an inefficient appliance, the energy professional will collect information to support follow-up when the appliance is closer to end-of-life or when a new incentive or technology arises. This allows MCE to rollout new opportunities and programs to "warm" targeted audiences, resulting in stronger customer relationships and increased energy efficiency adoption.

7.2 Customer Value Chain

Excellent customer service is one of the keys to MCE's energy efficiency program. MCE is piloting innovative ways to decrease customer barriers to participation, such as phasing projects with large scopes of work over longer timelines. While MCE is committed to addressing pressing customer needs within their current budget, recording whole building assessments captures opportunities to address further, deeper improvements in the future, especially as new technologies or incentives become available. A SPOC manages the process and provides clear pathways and integrated solutions for customers. The program leverages SmartMeter technology, customer satisfaction surveys, and program performance metrics, creating an instantaneous feedback loop for monitoring success and addressing program issues.

Figure 13. MCE's Customer Value Chain



MCE aims to provide multiple on-ramps for energy efficiency at each step of MCE's value chain for homeowners, multifamily building managers, as well as industrial, agricultural, and commercial business owners. MCE's energy efficiency activities are tailored for each customer segment, but a common underlying value chain describes MCE's key program strategy (Figure 13). MCE's energy efficiency program takes ratepayers from a customized assessment to an implemented solution that informs ongoing program improvement.

- » **Targeted Outreach:** Reach ratepayers through tested channels and in partnership with local organizations. A sophisticated CRM system identifies follow-up opportunities with customers.
- » **Customized Assessment:** Technical assistance providers offer building and property assessments and capture specific opportunities for future improvements in CRM.
- » **Aggregate Incentives:** Provide a one-stop shop for local, regional, statewide, and national rebates and incentives. A SPOC coordinates partner

programs to deliver a complete, tailored solution for the customer.

- » **Financing:** Remove barriers to investment in energy efficiency through low-cost financing.
- » **Technical Assistance:** Select the highest performing and most innovative technical assistance providers through solicitation procedures where appropriate.
- » **Workforce Development:** Partner with local workforce development organizations to provide articulated career pathways with on- and off-ramps based on the participant.
- » **Program Performance:** Evaluate each subprogram for actual energy savings, program performance metrics, market transformation indicators, and participant satisfaction surveys. Advanced Metering Infrastructure (AMI) data informs continuous program improvement. Rebate levels reduce over time, following market trends indicating that financial incentives are no longer needed as motivation to implement specific energy efficiency measures and upgrades. ■

Figure 14. MCE's Market Context





ENERGY EFFICIENCY GUIDING PRINCIPLE: INTEGRATE RESOURCE CONSERVATION SOLUTIONS

At every energy assessment opportunity, MCE presents efficiency solutions that integrate energy, water, and GHG reductions. This makes it easy for customers to adopt integrated resource conservation approaches rather than to have to cull together piecemeal solutions from different partners.

Across the organization, MCE takes a systems-thinking approach to reducing GHG emissions. Energy efficiency programs are considered alongside distributed generation and emerging technologies. Where it can, MCE leverages partnerships to address all operational aspects that affect energy consumption, including water and waste management. The program leverages Smart Meter technology, customer satisfaction surveys, and program performance metrics, creating an instantaneous feedback loop for monitoring success and addressing program issues. MCE partners with local water utility providers, leveraging water utility rebates for hot water and other water conservation energy measures.

MCE's CRM solution supports long-term engagement with its ratepayers. While MCE is committed to addressing pressing customer needs within customers' budgets, recording whole building assessments and audits in a CRM system captures opportunities to address further, deeper improvements in the future, especially as new technologies and incentives become available.

8. SINGLE FAMILY SECTOR

8.1 Introduction

MCE's single family program has a wide range of offerings: from one-off rebates for customers who have financial or structural barriers to incentives and technical assistance for customers who want to upgrade to Zero Net Energy.¹¹ The program also aims to help the highest energy users reduce their consumption with energy management tools. Online tools and real-time feedback on utility reports are emerging tactics that can help influence a household's interaction with energy use.

Motivators for energy efficiency and reductions can differ greatly from household to household. Likewise, each household's budget and readiness for change will also vary. Providing bundled solutions that offer meaningful support for any type of project a customer is considering will increase satisfaction and result in continued energy improvements over time.

Core Activities

- » Provide participants with a Single Family Single Point of Contact (SPOC) to serve as a facilitator and participant advocate, guiding customers through the process from initial contact to project completion.
- » Facilitate access to financing and rebates to help overcome upfront cost barriers.
- » Provide the highest consuming customers with information about how they use energy and advice for how to reduce consumption.

Key Innovations

- » Online portal provides a one-stop-shop to understand energy usage, identify upgrade opportunities, search available rebates and licensed contractors, and perform cost comparisons of energy efficiency appliances.
- » Access to one-off energy efficiency rebates for customers who have financial or structural barriers that prevent them from participating in the Energy Upgrade California: Home Upgrade Program.

¹¹ Zero Net Energy (ZNE) is defined as, "The societal value of energy consumed by the building over the course of a typical year is less than or equal to the societal value of the on-site renewable energy generated." (IEPR Workshop on the Definition of ZNE, July 2013).

- » Additional incentives and technical assistance to educate and enable Zero Net Energy (ZNE) customers to improve their home’s efficiency beyond code.
- » Online social networking platforms stimulate behavior changes, utilizing tactics such as competitions and DIY tutorials on a YouTube channel.

Summary Tables

The proposed budget for the first four years of the single family program is as follows:

Table 2. Single Family Program Budget Summary

Budget Category	Year 1	Year 2
Administrative	\$187,526	\$271,789
Marketing	\$265,256	\$217,256
Direct Implementation	\$1,027,046	\$1,287,254
Incentives	\$463,464	\$975,920
Evaluation, Measurement, and Verification (EM&V)	\$75,175	\$108,880
TOTAL	\$2,018,466	\$2,861,099

The expected total resource cost and estimated savings are detailed below:

Table 3. Cost Effectiveness Summary

Sector Summary	Year 1	Year 2
Total Resource Cost (TRC)	1.13	
Budget	\$2,018,466	\$2,861,099
Estimated Net Savings	845,005 kWh 36,644 therms	1,635,911 kWh 101,384 therms

Figure 15. Integrated Program Structure — Single Family

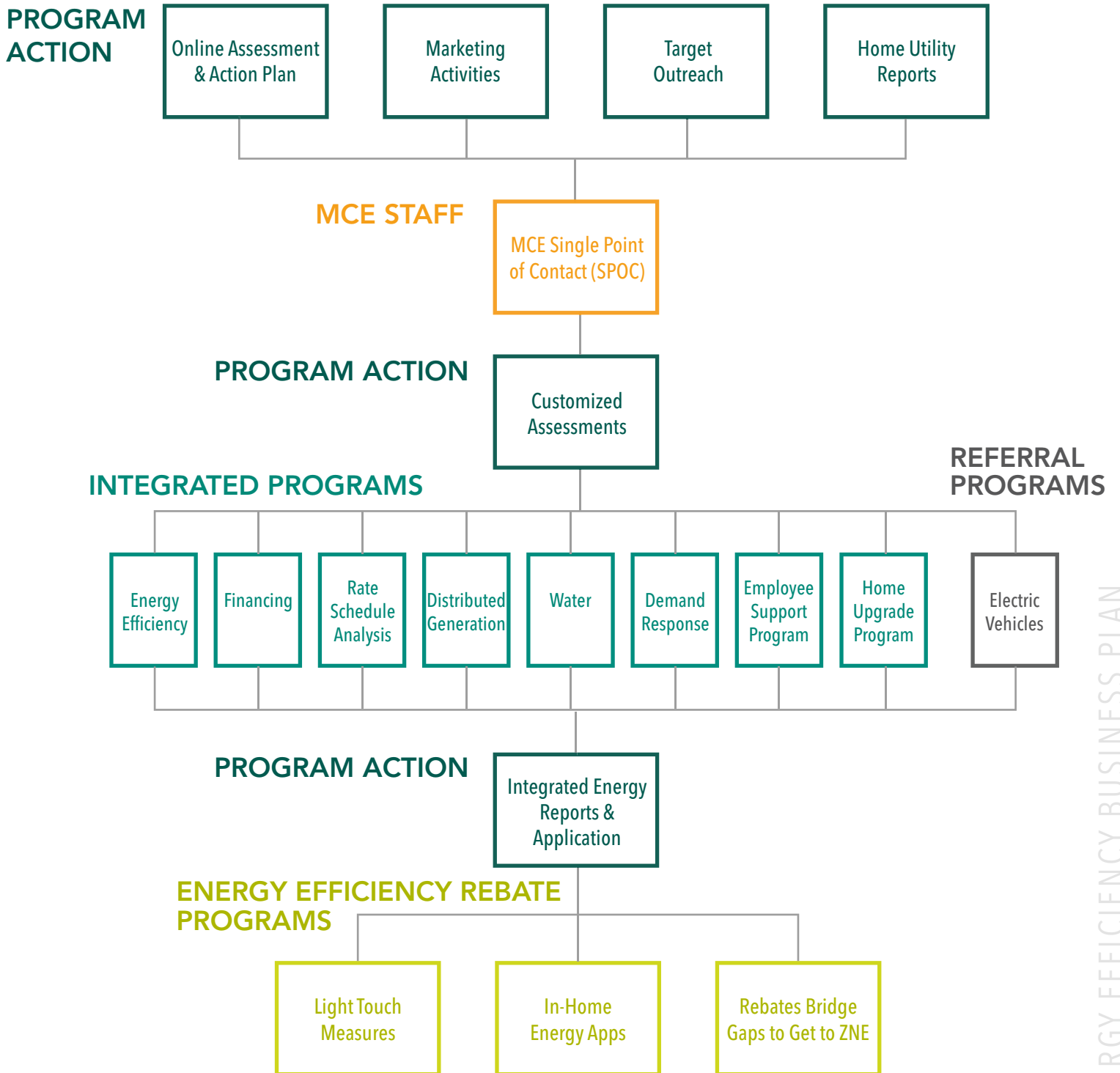
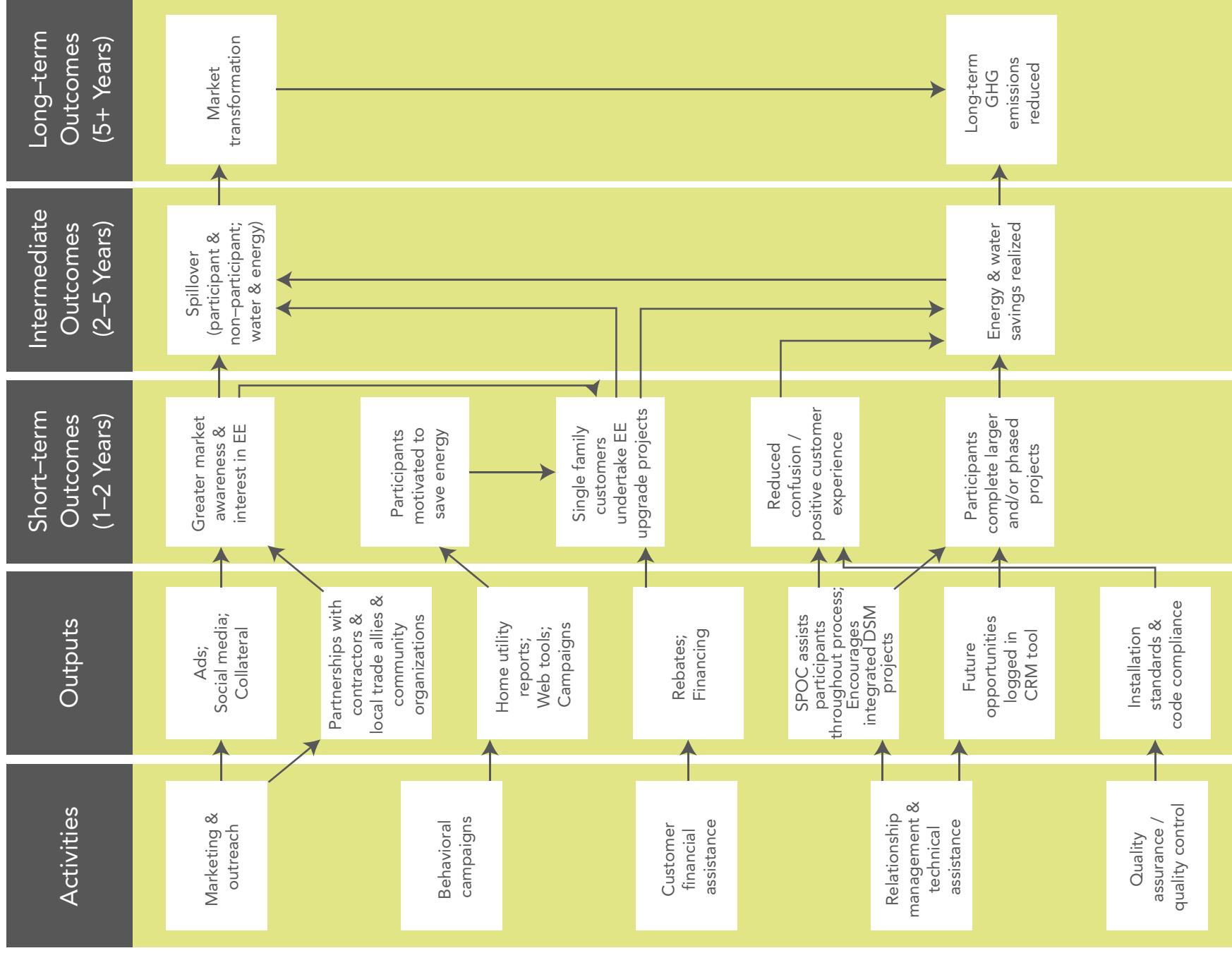


Figure 16. Single Family Program Logic Model



8.2 Gap Analysis and Market Characterization

MCE has analyzed energy consumption, building data, barriers, triggers, key market actors, and energy efficiency adoption to better understand the opportunities that exist within the single family sector.

The main gap in the residential sector is a single access point for customers to coordinate various residential sector program opportunities, actively track and manage EE opportunities in customers' homes, and serve as a guide to help navigate multiple program offerings. MCE's Single Point of Contact (SPOC) approach will bridge that gap by using sophisticated Customer Relationship Management (CRM) tools to track opportunities at the individual home level and guide homeowners through the various programs that are available to them. In doing so, MCE will serve as a trusted source of information and reduce barriers to customers participation in energy efficiency programs.

Additionally, there is a need in the residential sector for customers to better understand how they use energy in their home. Advanced metering technology provides highly detailed and real-time information about energy usage. Programs can couple this information with social science theories on behavior modification to try to influence customers' energy usage habits. MCE proposes a robust web tool that will integrate energy usage information with customer-provided data to develop recommendations. MCE will use their connection to local groups to extensively test this website and provide improvements on an ongoing basis based on customer feedback. This information will also feed into the CRM to help target messaging and advertisement about MCE programs. MCE will explore options for integrating the web tool into home displays, mobile phones, and home automation tools.

Energy Consumption

Single family homes represent the majority of MCE's customer accounts and about half of overall energy usage in MCE's service area. There is significant variety in the single family sector, and developing a program to serve this sector requires research into how energy is used in MCE's service area.

Across MCE's service area, there are substantial differences in electricity consumption per home per year. Marin and Napa Counties have per home electricity consumption that is somewhat higher than the statewide average while El Cerrito, Richmond, San Pablo and Benicia are higher than the statewide average but somewhat lower than the national average.

Statewide, lighting represents the largest share of residential electricity end-use, followed by refrigerators and freezers, then plug loads.¹² For residential natural gas end-use, space and water heating are the largest consumers, followed by cooking. Although they are still emerging on the market, electric vehicles have a significant effect on the electricity consumption of households where they are present.

Plug load is the most difficult end use to control, as there is significant variety among the types of devices that can be plugged into the wall. The United States Environmental Protection Agency labels certain efficient appliances with the Energy Star brand to help consumers navigate purchasing choices. There is large remaining potential in appliances like computers, air conditioners, clothing washers, refrigerators, and other appliances.¹³ The California

12 California Long Term Energy Efficiency Strategic Plan. California Public Utilities Commission. September 2008. Available at <http://www.cpuc.ca.gov/NR/rdonlyres/D4321448-208C-48F9-9F62-1BBB14A8D717/0/EEStrategicPlan.pdf>

13 Adoption of Energy Star Equipment Varies Among Appliances. Energy Information Administration. October 2012. Available at <http://www.eia.gov/todayinenergy/detail.php?id=8370>

Energy Commission (CEC) creates standards for appliance energy use,¹⁴ but can only target a finite number of technologies. Strategies focusing on controlling end uses, for example with automation or information, will be central to managing this fast growing source of consumption.

Building Data

The vast majority of the residential building stock in MCE’s service area was built between 1950 and 2000, with approximately 50% of the buildings built between 1950 and 1975. The exception is in Benicia where the majority of residential buildings were built between 1975 and 1999 (Figure 17). Title 24 was established in 1978 by the CEC and set regulations regarding energy conservation standards for new residential and new non-residential buildings.¹⁵ The pre-1978 building stock was not built with these conservation standards. Older single family buildings present both for more impactful improvements, but also present a challenge with costs increased for bringing those buildings up to code.

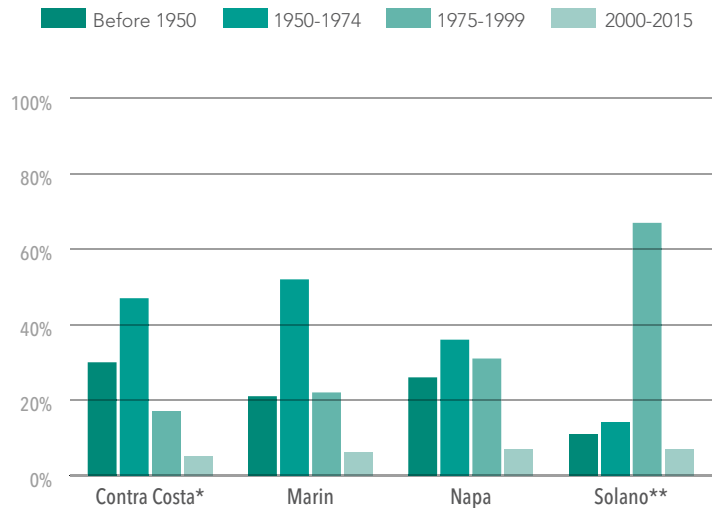
More than half (65%) of homes in Richmond, El Cerrito, and San Pablo are between 800 and 1,600 square feet (Figure 18). Meanwhile, in Benicia, Marin, and Napa, over 50% of homes are greater than 1,600 square feet. This data is used to tailor strategies to target residential consumers across MCE’s diverse service area.

Statewide, approximately 60% of households own their homes, with the remaining 40% renting. However, the percentages essentially reverse for low-income households, where

14 California Code of Regulations, Title 20. Public Utilities and Energy. California Energy Commission. November 2016.

15 Regulations Establishing Energy Conservation Standards for New Residential and New Nonresidential Buildings. California Energy Commission. Conservation Division. July 26, 1978. Available at http://www.energy.ca.gov/title24/standards_archive/1978_standards/CEC-400-1978-001.PDF

Figure 17. Residential Building Vintage in MCE Service Area

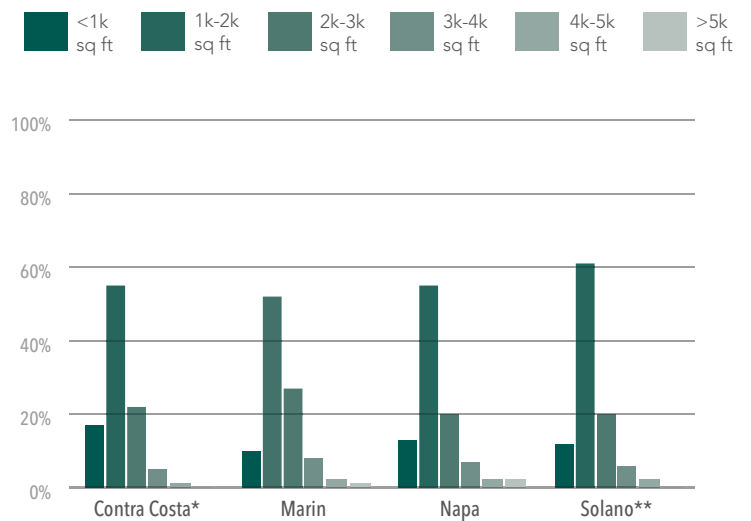


*Richmond, El Cerrito, San Pablo, Walnut Creek and Lafayette

**Benicia

Source: County Assessor Data

Figure 18. Residential Building Size by Service Area



*Richmond, El Cerrito, San Pablo, Walnut Creek and Lafayette

**Benicia

Source: County Assessor Data

approximately 40% own and 60% rent. MCE's single family program is structured to assist both owners and renters.

Problem Statements

There are several barriers that may prevent the single family customers from fully taking advantage of energy efficiency opportunities. These barriers include:

- » **Financial Constraints.** Customers may not have sufficient funds to cover the costs of upgrades, or may be uncertain as to the length of their tenure in a home. Customers may not be aware of financing options to overcome first cost barriers. Some customers may not qualify for traditional financing tools.
- » **Split Incentive Issues.** In renter-occupied homes, it can be challenging to encourage energy efficiency upgrades when the tenant pays for electricity, but does not own the home. Landlords are not incentivized to invest in efficiency upgrades because the financial benefits will go to the tenant. Tenants are not likely to invest in the property because they lose the value of the upgrades upon move out.
- » **Contractor Limitations.** There are a limited number of contractors with technical knowledge of integrated and comprehensive demand-side management.¹⁶ Additionally, there is the perception among some contractors that rebate programs are time and labor intensive.¹⁷ This poses a significant barrier, as contractors prefer to work outside of existing rebate programs.¹⁸
- » **Baseline Challenge.** Since the Title 24 code baseline increased considerably, the opportunities to bring existing buildings above the baseline is expensive. AB 802 (2015) addressed the issue of code baseline but the transition to measuring below code savings will be a learning experience with specific problems to overcome.
- » **Lack of Awareness.** Customers may not realize the potential benefits of energy efficiency upgrades in general and the benefits of MCE's program in particular, and may be concerned by the uncertainty in achievable savings. Customers may be overwhelmed by the large number of energy and water programs available.

MCE's single family program is designed to address these barriers by reaching customers at trigger points and offering tailored solutions.

Trigger Points

Trigger points are moments of opportunity when the likelihood of engaging customers in an energy efficiency program is highest. Trigger points for single family customers include:

- » **Appliance and Equipment Failure.** Convincing customers to upgrade to more expensive but highly efficient equipment can be challenging to do until the equipment is at or near failure, especially for costly and long-lived equipment. Proactively educating contractors and customers about rebates and incentives can address this barrier. It is also important to make programs easy to access to ensure customers are informed and ready to replace equipment with more efficient alternatives. This also presents an opportunity to expand the energy efficiency savings beyond the replacement of equipment to a larger project.
- » **Resident and Owner Turnover.** Periods of change, such as a turnover in renters, or sale of a home,

¹⁶ Energy Upgrade California Home Upgrade Program Process Evaluation 2014–2015. EMI Consulting. September 2016.

¹⁷ *ibid.*

¹⁸ *ibid.*

present an opportunity to perform home retrofits with minimal disruption.

Key Market Actors

There are many entities that influence the single family sector. It is important that MCE understand the role that each entity plays and how this role can affect efforts to promote energy efficiency:

- » **Local Governments.** Local governments set local building and zoning laws, issue permits, and provide information to local residents and property owners. Local governments have a pre-existing relationship with their constituents and are attuned to the community's opportunities, needs, and challenges. MCE is a local government agency and will partner with other local government personnel to conduct outreach to support implementation of its single family program.
- » **Property Owners, Renters, and Home Owners Associations.** Property owners are the primary decision makers and funders of expenditures on home improvements, such as energy efficiency improvements. MCE must engage them in order to accomplish projects and will benefit from building lasting relationships.
- » **Contractors, Builders, Designers, Architects, and Engineers.** Contractors, builders, designers, and architects are key influencers of home owners and make referrals to energy efficiency programs. These key actors often have significant influence over homeowners' decisions regarding the energy efficiency and capital improvements to properties. MCE will provide targeted training opportunities to these players to create a shift in the building industry to better incorporate energy efficient decision making. The design and construction workforce will also be integral to driving participants to the program.

» Retail Stores/Equipment Manufacturers.

Manufacturers and retail stores can use stocking and display practices to influence consumers' purchasing decisions. MCE will work with vendors to optimize these practices for greater adoption of energy efficient equipment.

MCE tracks key market actors in order to identify opportunities and challenges, and the impact of these entities on a customer's energy efficiency decision-making.

Adoption and Penetration

Before implementing single family program strategies, MCE evaluated current adoption and penetration of energy efficiency programs to identify opportunities and determine market gaps. Existing programs fall into four categories: (1) rebate and technical assistance programs; (2) direct install programs; (3) financing programs; and (4) behavioral programs.

- » **Rebate and Technical Assistance Programs.** One of the largest residential energy efficiency efforts in California is the Home Upgrade Program, which operates under the umbrella of the statewide Energy Upgrade California brand. Within Marin County (a subset of MCE's service area), over 230 homes participated in the Home Upgrade program (over 70 basic and over 160 advanced projects) between 2013 and 2015.¹⁹

PG&E reported the following 2013–2014 program savings: 149,983 MWh for Energy Advisor Program, 29,700 MWh for Energy Upgrade California, 7,233 MWh for new construction, and 7,233 MWh for California Advanced Homes program.²⁰ These numbers represent savings recently achieved, which reduce the available energy efficiency

¹⁹ Data from staff at County of Marin.

²⁰ Eestats.cpuc.ca.gov

opportunities in those homes. It's important to note that the data is across all of PG&E's service territory, so is more insightful on relative savings potential than remaining savings opportunities within MCE's service area.²¹

- » **Direct Install Programs.** PG&E currently offers direct install services for single family residences in MCE's service area. The direct install program, which provides youth training and light-touch measures, reached around 5,000 Marin homes between 2006 and 2014. The program can serve as an introduction to the benefits of energy efficiency and can be a gateway to deeper home energy upgrades.
- » **Financing Programs.** Financing can allow homeowners to mitigate the first cost barrier, or the need for significant amounts of capital availability at the beginning of a project, by spreading the cost over time. MCE will facilitate access to Property Assessed Clean Energy (PACE) financing programs and help to ensure PACE providers meet appropriate standards for conduct in its role as PACE administrator in Marin County. Additionally, MCE will help customers access the statewide financing offerings.

During the 2013–2015 program cycle, the CaliforniaFIRST PACE program was authorized in most of MCE's service area. Participation data for Marin shows that there have been 183 residential PACE applications received by the CaliforniaFIRST program, with 58 projects funded and/or under construction (as of Q2 2015).²² There are now five PACE providers authorized within Marin County,

where MCE serves as a lead generator, liaison and impartial advisor in the Open PACE marketplace.²³ MCE is also tracking and supporting the spread of PACE to other jurisdictions within its service area.

- » **Behavioral Programs.** Behavioral programs offer an untapped area of energy conservation activities. While the definition of a behavioral program has been limited in California to energy report style programs, there are many other activities that could be employed to influence energy consumption behavior. Emerging devices that communicate a home's energy usage to a web-based dashboard have increased the ability for homeowners to understand and control their energy usage. Pilot programs have been explored in this area with increasing frequency throughout the past few years in California.

In the past, MCE has offered a sophisticated web-based tool to inspire customers to take action to reduce energy use. Customers could search for contractors, rebates, and financing through MCE's MyEnergyTool.

MCE supplemented its web tool with a schools program in 2013 and 2014, designed to educate youth about energy conservation, using the web tool as supporting material. MCE, in partnership with Strategic Energy Innovations and Planet Ecosystems, Inc., was able to reach 2,025 students through this campaign.

MCE has also explored residential demand response (DR) programs, leveraging existing web technology to streamline access to DR programs. In 2016, MCE's web-based tool was offered on

21 Statewide Residential Programs 2013–2014. California Public Utilities Commission. Available at <http://www.cpuc.ca.gov/NR/rdon-lyres/3DE5A49C-9E9C-4945-AD78-161338282638/0/201314ResidentialFactSheet.pdf>

22 CaliforniaFIRST Activity Summary. July Q2 Report, Marin. Received via email from Jonathan Kevles at Renew Financial.

23 MCE worked with the County of Marin to implement an Open PACE marketplace in Marin. An Open PACE marketplace is a system in which any PACE provider who can agree to a minimum set of best practices is eligible to operate in Marin.

a statewide level by the Statewide Marketing, Education and Outreach program, so the MCE-specific tool was discontinued. In the future, MCE plans to offer a complimentary web-based tool that focuses on customer usage data and integrating DR, renewable energy, electric vehicle and storage offerings while also offering education on energy efficiency. MCE will continue to coordinate with the statewide program.

8.3 Intervention Strategies

MCE's single family program is designed to provide a positive customer experience and drive customer transformation. Program strategies are integrated and delivered in a seamless fashion by a SPOC, who will serve as a facilitator and customer advocate. Non-energy benefits are an important component of each of the strategies. For example, MCE recognizes the importance of benefits such as aesthetics, reduced energy costs, and greater comfort.

Emerging technology platforms provide customers with information and control related to their energy usage. For program administrators, these tools can also allow for a more powerful interaction with the customer. MCE will pair CRM software with home dashboard and data analytics platforms. This will help MCE provide targeted outreach according to demographics and energy savings opportunities and open the door to integration of demand side resources.

MCE proposes to offer the following four program strategies during the next program cycle: (1) rebate and technical assistance strategy; (2) direct install strategy; (3) financing strategy; and (4) behavioral strategy. To help ensure a successful outcome, MCE proposes a phased rollout, focusing first on building up existing programs and high-potential strategies.²⁴

Rebates and Technical Assistance

MCE plans to offer rebates and financial assistance to single family customers in its service area. The MCE single-family sector strategy offers solutions for the widest possible range of customers. For those customers ready to perform significant home upgrades, MCE proposes a comprehensive rebate and technical assistance program. This comprehensive program will include the option to pursue ZNE buildings, with ZNE design assistance and incentive kickers. For customers who are not yet prepared to do a comprehensive retrofit, MCE is offering a more streamlined single measure rebate program. MCE plans to support these programs with accessible and engaging outreach and educational tools available on the web and across the service area.

Single Measure Rebates

Not every residential customer is able or willing to consider a comprehensive upgrade to his or her property. However, providing meaningful rebate solutions for an individual project contributes to a positive customer experience. This offering may be valuable for tenants who do not have decision-making control over measures related to building envelope but still seek to save money on bills.

MCE will offer a suite of one-off rebates for measures including lighting, HVAC, insulation, and efficient appliances. There will be higher rebates for measures that offer benefits across multiple resources (e.g. water-energy measures). MCE's goal is to provide a positive experience to customers who have specific and discrete needs, and to use this entry point to establish an ongoing relationship with the customer. MCE anticipates that, as customers have good experiences with the MCE program, they have a higher likelihood to consider further upgrades down the road. For example, a customer who had a positive experience with an MCE energy

²⁴ High-potential strategies include those for which there is more energy savings opportunity in the MCE service area. For example, there is less new construction overall in MCE's service area, and

hence retrofit programs will be emphasized before new construction.

audit and toilet replacement in the past may turn to MCE for assistance as their HVAC equipment nears replacement.

Comprehensive Retrofit Program

MCE proposes a comprehensive retrofit program that will offer customers a customized audit and rebate package. The focus of this offering is to encourage homeowners to undertake a cost-effective suite of energy efficiency measures. The program will take advantage of the natural trigger point that occurs when a homeowner is renovating their home to encourage energy efficiency through technical assistance, project management, and financial incentives such as rebates and financing.

Zero Net Energy

The California Public Utilities Commission (CPUC) and the CEC have reinforced a commitment to increased development of Zero Net Energy (ZNE) buildings in California. For the purposes of this program offering, a ZNE building is one that annually produces at least as much energy on site as it consumes. To achieve statewide carbon mitigation goals and the goals laid out in AB 758 (2009), ZNE buildings will be crucial. This will require deep retrofits for existing buildings and significant design and technical assistance for new construction.

MCE's approach to ZNE buildings will be two fold. Design assistance will be offered to local area architects and contractors to assist in integration of ZNE strategies at the onset of the project. MCE has the benefit of significant local interest and capacity in the ZNE building realm, and MCE will partner with local organizations to offer technical and design assistance for ZNE retrofits. MCE will also work with these organizations to develop a skilled workforce and advocate for codes and standards that facilitate the implementation of projects. The SPOC will also have a very strong role to play in ZNE projects, as these projects will require multiple demand-side

resources. The SPOC will facilitate applications to multiple funding streams to access renewable energy incentives, EV incentives, and to encourage ZNE projects to also incorporate water saving measures as well.

For ZNE retrofit projects, MCE will offer additional incentives to customers that want to achieve ZNE and are already undertaking home upgrade projects. Incentives will be provided on the basis of percent improvement over the modeled baseline of the home upgrade project. This will be an add-on to the existing comprehensive retrofit program.

ZNE for new construction will primarily involve front-end work with building professionals to ensure the ZNE strategies are integrated at the earliest possible stage of the project. As stated above, MCE will work with local organizations to offer technical and design assistance in accomplishing these projects. Contractors will be required to demonstrate compliance with codes and standards, and may be required to agree to minimum installation standards for specific technologies to ensure proper installation.

Door-to-Door Residential Direct Installation Program

MCE proposes to build on the successful door-to-door residential direct installation campaigns. MCE will emphasize youth vocational services and provide free installation and education for residential households, which will provide benefits to both the customer and the installers. This activity will be co-funded between marketing and outreach as well as direct implementation, and will be used as a lead generation strategy. The direct installation campaigns will introduce residential households to energy conservation and help establish a relationship with the program. MCE will follow up to encourage them to implement more energy savings measures over time.

Financing

MCE's SPOC will help customers navigate the landscape of financing offerings available and encourage them to participate to the extent that it facilitates energy efficiency upgrades.

PACE is a tool where property owners can voluntarily opt into a tax assessment, which is then tied to the property. The main advantage of PACE is the transferability with the property, helping to mitigate concerns over payback period and average tenancy in a residential building. PACE financing also enables investment in renewable energy and water savings improvements, and in some cases can be a source of financing for new construction projects.²⁵

MCE worked with the County of Marin to establish an Open PACE marketplace model.²⁶ MCE will seek to work with other parts of its service area to expand this approach to PACE. Additionally, SPOCs will refer customers directly to PACE providers.

Behavioral Strategy

Behavioral savings are an increasingly important component of energy efficiency programs. No-cost energy efficiency actions may serve as an introduction to energy savings concepts for customers who are not yet ready to invest money in performing energy upgrades. There are also certain energy end uses, such as plug loads that pose significant challenges to traditional rebate programs.²⁷ MCE seeks to expand its existing behavioral program offerings.

School Programs

Based on past experiences with the schools program, MCE has found that working with local schools is an important strategy for educating youth and parents alike about the value and benefits of energy and water conservation. MCE will continue to work with local schools to deliver curriculum based on energy savings. MCE will continue to provide in-class instruction, take home assignments, and presentations during school assemblies in order to raise energy awareness, encourage families to perform online energy assessments, and create energy actions plans. MCE will also seek to provide a platform for competitions between schools or classrooms around energy savings accomplishments.

Home Information and Automation Program

The information and automation strategy aims to empower customers with a deeper understanding of their energy consumption and habits, and provide tools that enable energy savings at a level of engagement that matches the customer's preferences.

The logic behind MCE's information strategy is that knowledge is power, and people are motivated by their peers.²⁸ The home automation element provides a promising way to integrate energy efficiency with other demand-side management resources, and possibly provides avenues for limiting plug load energy use. Providing insights into energy consumption and benchmarking peers against one-another (using web-based tools and home utility reports) is enough to motivate many consumers to take action.²⁹ By employing innovative social norming

25 Some PACE providers utilize SB 555 (2012) as the enabling legislation; this follows the Mello-Roos style assessment (rather than the Streets and Highways Code assessment enabled under AB 811 [2008]), which can be used for new construction.

26 An Open PACE marketplace is a system in which any PACE provider who can agree to a minimum set of best practices is eligible to operate in Marin.

27 Plug Load and Appliances Program Needs and Strategy, March 2013 (available at energydataweb.com).

28 Household Energy Use: Applying Behavioural Economics to Understand Consumer Decision-Making and Behaviour. Elisha R Frederiks, Karen Stenner, Elizabeth V Hobman. Renewable and Sustainable Energy Reviews, Volume 41. January 2015. Pp. 1385-1394. ISSN 1364-0321. Available at: <http://dx.doi.org/10.1016/j.rser.2014.09.026>

29 Household Energy Use: Applying Behavioural Economics to Understand Consumer Decision-Making and Behaviour. Elisha R

and marketing tactics that help people emotionally connect to energy savings and home performance, MCE anticipates effectively motivating customers with its energy efficiency message.

The strategy will offer multiple avenues for educating residential single family customers on how they use energy in their homes and ways they can save energy. The program will offer a web-based energy tool while looking for ways to expand into home automation tools and home dashboard technologies.

The web tool will use publicly available housing data, energy usage information, and any customer-provided data to develop a set of customized energy saving actions. The web tool will also guide users to resources (e.g., rebates, contractors, and financing) that can help them take the recommended actions. MCE will expand upon its current offerings to provide customers with a dashboard to track project progress and participation in other demand management programs (e.g., automated demand response using remotely controllable smart thermostats and load control devices).

MCE will explore options for integrating the web tool into home displays, mobile phones, and home automation tools.

Community Engagement and Gamification

MCE will work closely with community groups and local schools to recruit volunteers for geographically targeted campaigns encouraging households to implement energy saving actions and compete for rewards. This program will use the web tool and utility records to track the progress of groups. Participants will receive newsletters on their progress and competitive standing throughout the campaign.

MCE will also work with local groups taking action to address climate change as a means to keep members engaged throughout the competition. Participants will compete for free energy efficient equipment. Middle and high-school students from participating households will be eligible to participate in a photo and essay contest about their experiences with energy efficiency. The winning entries will be put on display in MCE's energy efficiency demonstration room, the Barbara George Learning Center, and the winning students will receive scholarships.

This platform may also enable group purchasing for the residential sector. Through these campaigns, participating households that would like to pool resources to make a bulk purchase of a certain measure, for example efficient water heaters, may be able to combine purchasing power and receive better costs. MCE will facilitate this aggregated purchasing on behalf of interested community groups.

Metrics Tables (Table 4)

Alongside the other program administrators, MCE developed metrics that connect market barriers to intervention strategies, and that provide near, mid, and long term targets that build towards a 10-year vision. The metrics are based on the framework presented to the Energy Division in August 2016, which emphasized:

- » Usefulness for program administrators to manage portfolio
- » Information on the progress towards achieving desired market effect(s) and strategy effectiveness
- » Reliance on data collected during program implementation and/or data reporting to the CPUC
- » Simple to understand and clear of any subjectivity
- » Emphasis on long-term outcomes

Frederiks, Karen Stenner, Elizabeth V Hobman. Renewable and Sustainable Energy Reviews, Volume 41. January 2015. Pp. 1385–1394. ISSN 1364–0321. Available at: <http://dx.doi.org/10.1016/j.rser.2014.09.026>

Table 4. Single Family Sector Market Barriers & Metrics

Problem Statement	Market Barriers	Desired Market Effects/ 10-year Vision	Intervention Strategies
Customers lack sufficient funds to cover the costs of upgrades. Customers are not aware of financing options or do not qualify for traditional financing tools	Financial barrier; lack of awareness	Increase in the number of homeowners who are aware of and make use of financing options to help them cover the cost of energy efficient home upgrades	<ol style="list-style-type: none"> 1. Rebates¹ 2. Education about financing offered by other entities (i.e. PACE)
In renter-occupied homes the homeowner pays for the upgrades but the renter sees the financial benefit on their utility bill resulting in fewer homeowners willing to make the investment in energy efficiency	Split incentive	Increase in the awareness of non-energy benefits of energy efficiency measures (i.e. comfort, light quality, etc.) and the value that has on the rental market	<ol style="list-style-type: none"> 1. Door-to-door direct install provides energy efficiency measures free of cost 2. Behavioral campaigns encourage low-cost and no-cost solutions
There are a limited number of contractors with technical knowledge of integrated and comprehensive demand-side management or above code opportunities	Lack of contractors trained in IDSM and how to meet or exceed code	Increase in the number of contractors who understand the benefits of IDSM and can use that knowledge to sell projects	<ol style="list-style-type: none"> 1. Contractor training
There is a perception among contractors that rebate programs are time and labor intensive	Confusion among contractors about program processes, high administrative burden of participating in programs	Increase participation and decrease customer/contractor confusion	<ol style="list-style-type: none"> 1. SPOC guides customers through various program offerings and supports contractors in selling projects
Energy Efficiency improvements are not as visible as other clean energy strategies, such as rooftop solar panels, and therefore they are not valued as highly by homeowners or prospective home buyers	Low perceived value of energy efficiency measures	Energy efficiency improvements are valued in the real estate market	<ol style="list-style-type: none"> 1. Home information and automation devices to make energy consumption more conspicuous 2. Community engagement and gamification to motivate customers to save energy
Customers are not aware of the potential benefits of energy efficiency upgrades or the availability of MCE's program	Lack of awareness	Increased awareness of MCE's program offerings and financial benefit of energy efficiency upgrades	<ol style="list-style-type: none"> 1. Door-to-door campaigns and community outreach increase awareness of MCE programs 2. SPOC approach tracks opportunities for an individual customer over time
Customers are concerned about uncertainty in achievable savings	Uncertainty in savings	Increased certainty around achievable energy savings	<ol style="list-style-type: none"> 1. Metered energy savings increase accuracy of projected energy savings and validate savings post-installation

Sector Metric	Baseline	Metric Source	Short Term Target (1-3 years)	Mid Term Target (4-7 years)	Long Term Target (8-10 years)
<ol style="list-style-type: none"> 1. Number of completed projects 2. Number of referrals to PACE programs 3. Number of completed projects using PACE financing 	<ol style="list-style-type: none"> 1. Program Year 1 (PY1) 2. PY1 3. 2015 Baseline: 128 projects completed in MCE service area using PACE tax assessments 	<ol style="list-style-type: none"> 1. Program tracking data 2. Program tracking data 3. PACE providers 	<ol style="list-style-type: none"> 1. Increase 10% over PY1 baseline 2. Increase 10% over PY1 baseline 3. Increase 5% over 2015 baseline 	<ol style="list-style-type: none"> 1. Increase 20% over PY1 baseline 2. Increase 20% over PY1 baseline 3. Increase 10% over 2015 baseline 	<ol style="list-style-type: none"> 1. Increase 30% over PY1 baseline 2. Increase 30% over PY1 baseline 3. Increase 15% over 2015 baseline
<ol style="list-style-type: none"> 1. Number of homes receiving direct install measures 2. Number of customers reached through behavioral campaigns 	<ol style="list-style-type: none"> 1. PY1 Participation 2. PY1 Participation 	<ol style="list-style-type: none"> 1. Program tracking data 2. Program tracking data 	<ol style="list-style-type: none"> 1. 0.1% of homes 2. 2% of residential customers 	<ol style="list-style-type: none"> 1. 0.5% of homes 2. 5% of residential customers 	<ol style="list-style-type: none"> 1. 1% of homes 2. 10% of residential customers
<ol style="list-style-type: none"> 1. Number of contractors that participate in training 	<ol style="list-style-type: none"> 1. 2015 Baseline: 17 contractors attended training 	<ol style="list-style-type: none"> 1. Program tracking data 	<ol style="list-style-type: none"> 1. 10% increase over 2015 baseline 	<ol style="list-style-type: none"> 1. 10% increase over 2015 baseline 	<ol style="list-style-type: none"> 1. 10% increase over 2015 baseline
<ol style="list-style-type: none"> 1. Number of repeat participants 2. Number of projects provided with technical assistance 3. Percentage of projects completed with more than one demand side strategy 	<ol style="list-style-type: none"> 1. PY1 Participation 2. PY1 Participation 3. PY1 Participation 	<ol style="list-style-type: none"> 1. Program tracking data 2. Program tracking data 3. Program tracking data 	<ol style="list-style-type: none"> 1. NA 2. 2% of homes 3. 50% of projects 	<ol style="list-style-type: none"> 1. 5% of participants 2. 10% of homes 3. 60% of projects 	<ol style="list-style-type: none"> 1. 10% of participants 2. 20% of homes 3. 80% of projects
<ol style="list-style-type: none"> 1. Increase in value of energy efficiency retrofits in home sales 2. Participation in community outreach/competitions 	<ol style="list-style-type: none"> 1. PY1 Participation 2. PY1 Participation 	<ol style="list-style-type: none"> 1. Market study 2. Program tracking data 	<ol style="list-style-type: none"> 1. Increase 2% over PY1 baseline 2. 2% of residential customers 	<ol style="list-style-type: none"> 1. Increase 5% over PY1 baseline 2. 5% of residential customers 	<ol style="list-style-type: none"> 1. Increase 7% over PY1 baseline 2. 10% of residential customers
<ol style="list-style-type: none"> 1. Participation in door to door campaigns and community outreach activities 2. Number of repeat referrals from SPOC 	<ol style="list-style-type: none"> 1. PY1 Participation 2. PY1 Participation 	<ol style="list-style-type: none"> 1. Program tracking data 2. Program tracking data 	<ol style="list-style-type: none"> 1. 2% of residential customers 2. NA 	<ol style="list-style-type: none"> 1. 5% of residential customers 2. 5% of participants 	<ol style="list-style-type: none"> 1. 10% of residential customers 2. 10% of participants
<ol style="list-style-type: none"> 1. Increased alignment between projected energy saving and metered energy savings 	<ol style="list-style-type: none"> 1. PY1 Participation 	<ol style="list-style-type: none"> 1. Impact evaluation 	<ol style="list-style-type: none"> 1. Realization rate > 75% 	<ol style="list-style-type: none"> 1. Realization rate > 80% 	<ol style="list-style-type: none"> 1. Realization rate > 90%

8.4 Evaluation, Measurement & Verification

MCE will gather data on participation metrics, savings, and installed measure information as a standard business practice. Additionally, MCE will gather customer satisfaction and SPOC referral metrics, — either on project forms or via a customer survey submitted shortly after project completion. MCE takes an adaptive management approach to continuously evaluate program performance. MCE will use Advanced Metering Infrastructure (AMI) data, customer feedback, participation surveys, among other sources to measure the effectiveness of intervention strategies. This feedback loop enables MCE to make improvements throughout the program cycle. This data will be analyzed to ensure continuous improvement and that program strategies align with customer needs.

Anticipated Study Needs

To supplement any EM&V activities conducted by the CPUC, MCE will undertake an evaluation of its home automation intervention strategies to understand how customers are engaging with the technology, the persistence of the savings generated by the technology and the potential for expanding the application of home automation systems in the future.

In addition, MCE will conduct a cross-sector process evaluation of the SPOC offering to determine to what degree it helps alleviate customer confusion and encourages repeat participation.

8.5 Coordination

Key Partners

MCE will partner closely with other organizations promoting resource conservation, including water districts, climate coalitions, renewable and distributed

generation companies and installers, and electric vehicle companies. MCE will communicate regularly with these entities to ensure that they have access to the latest program information. MCE will facilitate program participants' applications for rebates with these partner agencies and to the extent possible integrate those applications with the MCE application to streamline the participation process.

MCE supports innovative community-based partnerships (such as neighborhood-based or peer-to-peer learning approaches), using the United States Department of Energy's "Tool Kit Framework: Small Town Energy Program".³⁰ This guide highlights models of successful community engagement and serves as a reference manual for running community-based energy programs.

MCE will adjust its partnership strategy throughout the program cycle based on key performance indicators, and customer needs and drivers. MCE constantly seeks new partnership opportunities to help achieve its end goal of deeper energy and greenhouse gas savings.

The partners that MCE will work with in the single family sector include:

- » **Building Industry Partners.** MCE will work with builders and contractors to generate referrals. MCE will connect with building industry partners through local organizations and through direct outreach. MCE will partner with local building officials to identify the contractors pulling the most permits in the region, and will conduct targeted outreach to them.

30 Department of Energy. Tool Kit Framework: Small Town Energy Program. Available at <http://energy.gov/eere/better-buildings-neighborhood-program/tool-kit-framework-small-town-energy-program-step>. Accessed August 5, 2015.

- » **Local Governments.** Local governments set local building and zoning laws, issue permits, and provide information to local residents and property owners. Local governments have a pre-existing relationship with their constituents and are attuned to the community's opportunities, needs, and challenges. MCE will partner with local governments to conduct outreach to support implementation of its single family program.
- » **Property Owners and Renters/Home Owners Associations (HOA).** Property owners are the primary decision makers and funders of expenditures on home improvements, such as energy efficiency improvements. MCE must engage them in order to accomplish projects and will benefit from building lasting relationships.
- » **Contractors/Builders/Designers/Architects/Engineers.** Contractors, builders, designers, and architects are key influencers of home owners and make referrals to energy efficiency programs. These key players often hold significant delegated authority regarding the energy efficiency and

capital improvements to properties. MCE will provide targeted training opportunities to these players to create a shift in the building industry to better incorporate energy efficient decision making. They will also be integral to driving participants to the program.

- » **Retail Stores/Equipment Manufacturers.** Manufacturers and retail stores can use stocking and display practices to influence consumers' purchasing decisions. MCE will work with vendors to optimize these practices for greater adoption of energy efficient equipment.
- » **Schools/Community Groups.** Schools and community groups will be key partners in engaging residential customers, especially in regards to behavioral tactics and marketing and education efforts.

Table 5 maps strategies to key partners. It is not intended to be fully comprehensive, but rather, a visual representation. ■

Table 5. Single Family Key Partners

	Information & Automation	Community Engagement	Energy Upgrades	Zero Net Energy	Basic Rebates	Financing
Contractors (HVAC, lighting, etc.)			X	X	X	X
Community Groups	X		X		X	
City and County Organizations	X		X	X	X	X
Business Partners (implementers, software and web tool providers, etc.)	X		X	X	X	X
Schools		X				

9. MULTIFAMILY SECTOR

9.1 Introduction

Multifamily buildings are distinct enough from single family homes to warrant their own program approach. Multifamily programs are often characterized by split incentives because owners commonly bear the investment costs for energy consuming equipment or conservation upgrades while tenants reap the savings. Tenant turnover is also a factor; landlords may be reluctant to disrupt tenants for invasive upgrades, particularly in market rate buildings.

The multifamily program is an area where MCE's flexibility can greatly address participation barriers in tenant/owner situations. MCE takes a phased approach with multifamily upgrades, allowing owners to plan larger projects that take advantage of maximum incentive levels but are implemented over time, as tenants turn over. A combination of light touch, bundled, and customized measures help accommodate the specialized needs of each multifamily building upgrade opportunity.

Core Activities

- » Provide participants with a Multifamily Single Point of Contact (SPOC), who will provide personalized attention, follow-through, and assistance

identifying solutions that meet customers' needs, budget, and levels of readiness for change.

- » Develop an integrated assessment process streamlining multiple program offerings into one customer report.
- » Deploy sophisticated Customer Relationship Management software, allowing for an ongoing relationship between the property and the program.

Key Innovations

- » Integrates energy savings and on-site generation opportunities, allowing property owners to see the full benefit of upgrade projects, rather than isolating opportunities by savings type.
- » Project phasing allows building owners to capitalize on savings for large projects, while completing improvements over time, as tenants turn over.
- » A point-based incentive structure encourages and rewards a more comprehensive scope of work and helps the owner easily identify potential rebates based on planned improvements.

Summary Tables

The proposed budget for the first four years of the multifamily program is as follows.

Table 6. Multifamily Program Budget Summary

Budget Category	Year 1	Year 2
Administrative	\$146,917	\$288,745
Marketing	\$248,743	\$316,993
Direct Implementation	\$ 886,586	\$1,262,815
Incentives	\$286,024	\$1,066,357
Evaluation, Measurement, and Verification (EM&V)	\$58,862	\$115,593
TOTAL	\$1,627,131	\$3,050,503

The expected total resource cost and estimated savings are detailed below:

Table 7. Cost Effectiveness Summary

Sector Summary	Year 1	Year 2
Total Resource Cost (TRC)	1.33	
Budget	\$1,627,131	\$3,050,503
Estimated Net Savings	639,661 kWh 46,234 therms	1,859,560 kWh 154,203 kWh

Figure 19. Integrated Program Structure — Multifamily

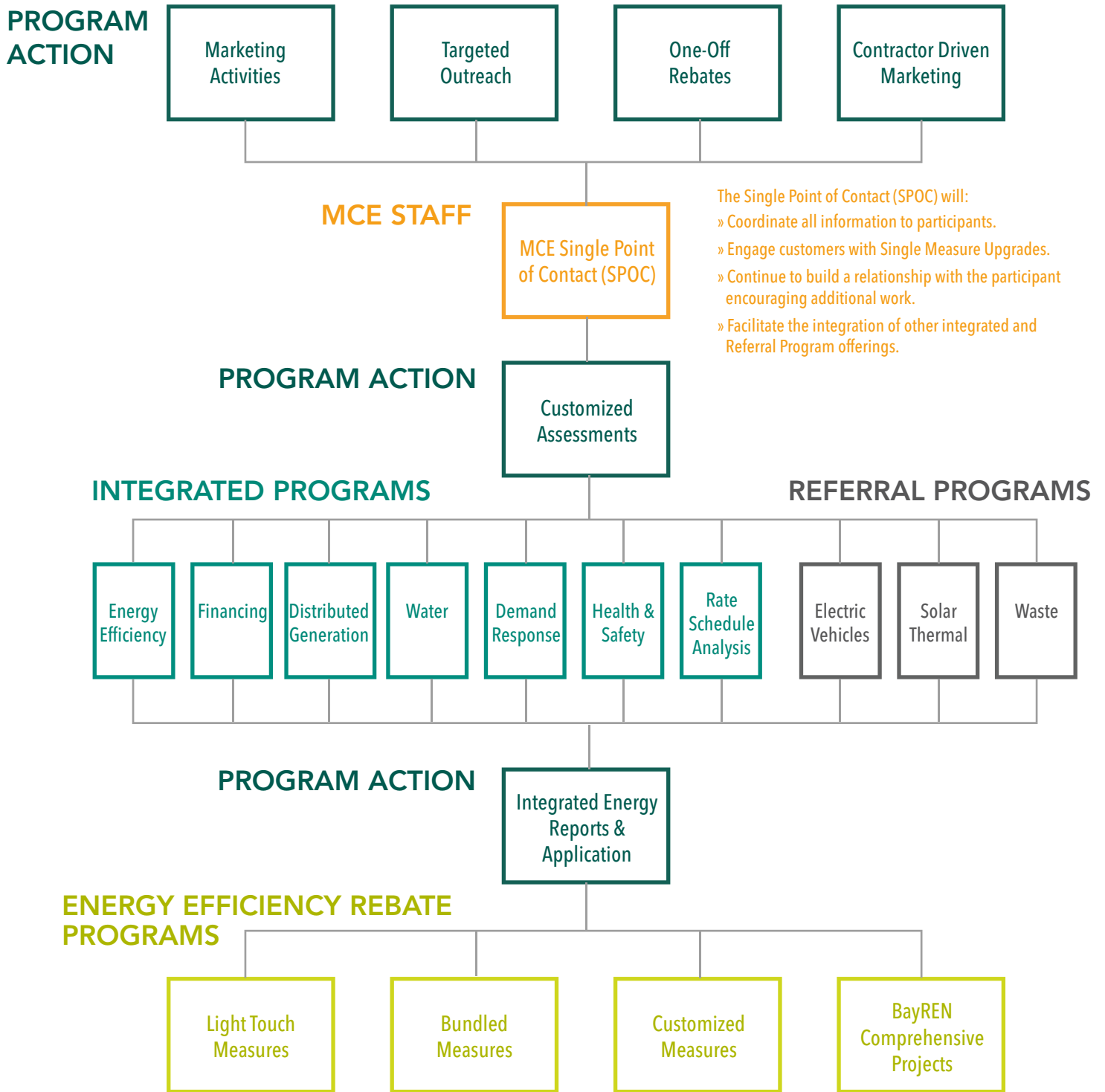
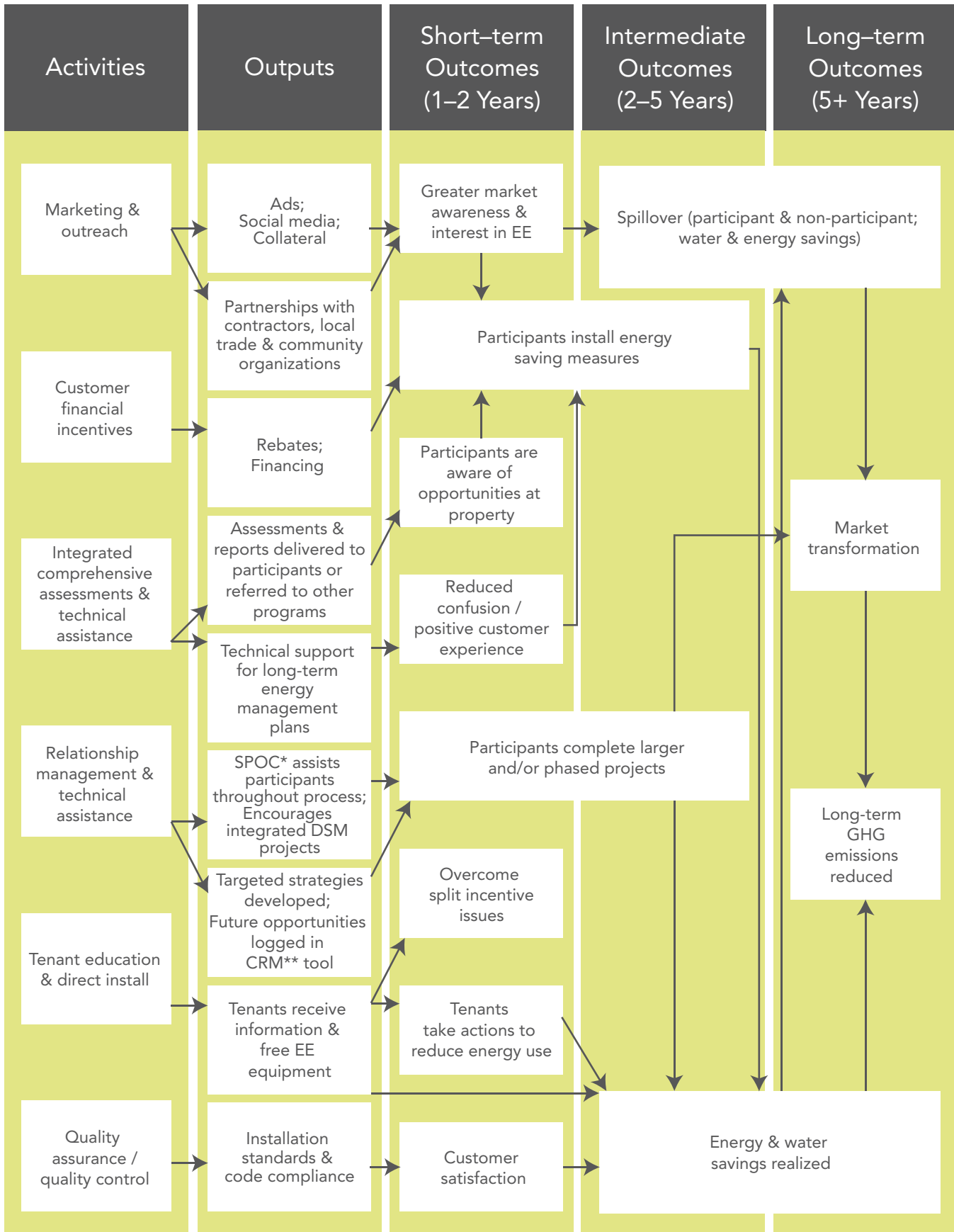


Figure 20. Multifamily Program Logic Model



* SPOC = Single Point of Contact

** CRM = customer relationship management

9.2 Gap Analysis and Market Characterization

MCE recognizes two major issues in the multifamily sector. First, that it is underserved in comparison to its potential,³¹ and second, that programs are not designed to meet the needs of the building owners.³² MCE has addressed both of these issues by designing a completely customizable program based on the needs, goals, and budget of the property or portfolio of properties.

MCE works with property owners and managers to understand their immediate needs and long-term goals, and then structures projects tailored to each customer. MCE also assists customers who are only prepared to initiate a small scope of work develop a long-term, phased scope of work. A Single Point of Contact (SPOC) serves as a facilitator and participant advocate, helping to guide property owners through the process from initial contact to project completion. The SPOC model also allows properties to address other conservation and resiliency opportunities using MCE's resources (technical expertise, rebates, financing, etc.) without having to over extend their own staff, who have many competing priorities.

MCE has removed many of the barriers to participation by providing property owners and managers with technical assistance, project management, incentives for in-unit upgrades, no-cost direct install service, identification of other resource conservation

31 Evaluation of the 2004–2005 Partnership for Energy Affordability in Multi-Family Housing Program. KEMA. (2006) p. 3–20. Available at http://www.calmac.org/publications/04-05_Eval_of_Partnership_for_Energy_Affordability_in_MF_Housing_%28ID_1211-04%29.pdf

32 Evaluation of the 2004–2005 Partnership for Energy Affordability in Multi-Family Housing Program. KEMA. (2006) p. 1–12. Available at http://www.calmac.org/publications/04-05_Eval_of_Partnership_for_Energy_Affordability_in_MF_Housing_%28ID_1211-04%29.pdf

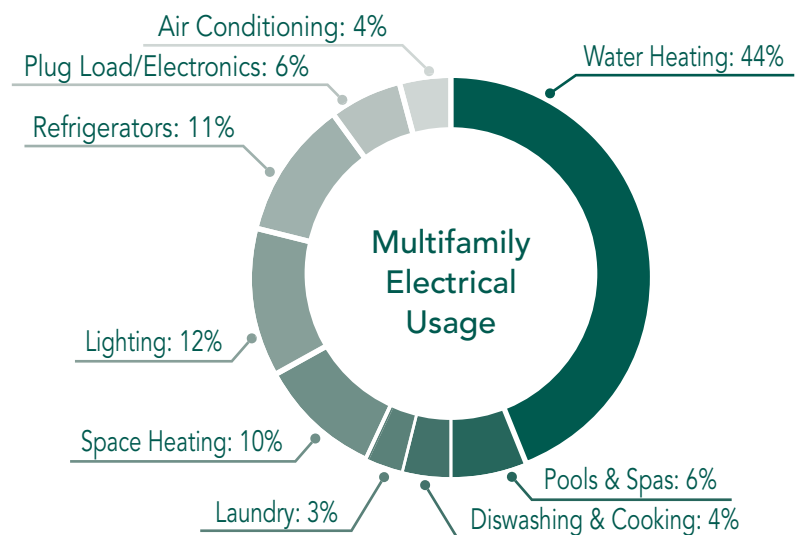
opportunities, and access to technical assistance and rebates to address those opportunities. MCE's multifamily program supports property owners in completing upgrades at unit turnover by providing sliding scale rebates. It also supports phasing projects to accommodate budgets, larger retrofits and long-term planning.

Energy Consumption

The multifamily sector accounts for 11% of building energy use in California and approximately 24% of all residential energy use.³³ Water heating accounts for the largest single end use of electricity in multifamily buildings at 44%, with lighting, space heating, and refrigeration making up another 33% of electrical use in the multifamily sector (Figure 21).

33 Multifamily energy use is representative of all buildings with 2+ units. California Energy Commission, Existing Buildings Energy Efficiency Action Plan (Sept. 2015), pg. 15. Available at http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-05/TN206015_20150904T153548_Existing_Buildings_Energy_Efficiency_Action_Plan.pdf

Figure 21. Electricity Use in Multifamily Building by End Use¹ (2009 RASS)



1 2009 California Residential Appliance Saturation Study. KEMA, Inc. for the California Energy Commission. October 2010. <http://www.energy.ca.gov/2010publications/CEC-200-2010-004/CEC-200-2010-004-ES.PDF>

Building Data

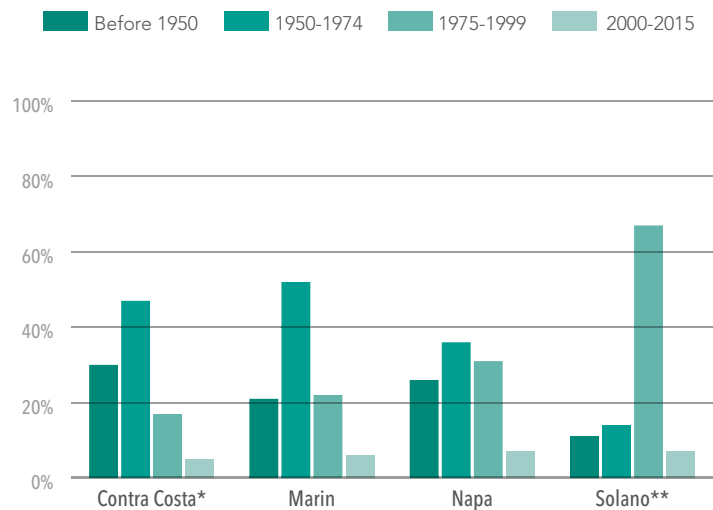
The majority of the residential building stock in MCE's service area was built between 1950 and 2000, with approximately 50% of the buildings being built between 1950 and 1975 (Figure 22). The exception is in Benicia where the majority of residential buildings were built between 1975 and 1999 (Figure 22). Title 24 was established in 1978 by the California Energy Commission (CEC) and set regulations regarding energy conservation standards for new residential and new non-residential buildings.³⁴ The pre-1978 building stock was not built with these set conservation standards. These older buildings present an opportunity for improvements but also a challenge as there will be costs associated with bringing those buildings up to code. The data provided above is not multifamily specific as the county assessor data does not provide that level of information.

MCE's service area is primarily residential, with 88% of its customers on a residential rate schedule. MCE does not have sufficient data to determine what proportion of customers live in multifamily properties.

Affordable Properties. MCE's multifamily program has been serving affordable and income-qualified properties since its inception in 2013. Affordable properties tend to require the most upgrades and lack sufficient resources. When these properties do have access to funds, it tends to be multiple funding streams each with its own constraints. Budgets are typically allocated at least a year in advance.

Public Housing. MCE's multifamily program also serves public housing. As with all multifamily

Figure 22. Residential Building Vintage by Service Area



*includes Cities of El Cerrito, Lafayette, Richmond, San Pablo, and Walnut Creek

**includes City of Benicia

Source: County Assessor Data

properties, public housing has unique characteristics (minimal funding, competing priorities, limited staffing resources and expertise) and requires extensive resources to complete comprehensive retrofits.

Market Rate Properties. MCE's multifamily program includes service to market rate properties (properties that are not deed restricted) as well. The challenges market rate properties experience are the split incentive issue and not wanting to disturb tenants for fear of turnover.

Homeowners Associations. MCE's multifamily program has served a number of homeowners association (HOA) properties. HOA properties have unique challenges, as they have a combination of multifamily and single family characteristics. A Board of Directors usually makes management decisions for common area measures. The HOA Board of Directors tends to get consensus from all owners prior to

34 California Energy Commission, Conservation Division. Regulations Establishing Energy Conservation Standards for New Residential and New Nonresidential Buildings. July 26, 1978. Available at http://www.energy.ca.gov/title24/standards_archive/1978_standards/CEC-400-1978-001.PDF, accessed July 15, 2015.

making any decisions about upgrades. This can be a complicated and time intensive process. However, individual owners are often responsible for making upgrades within their units, which requires agreement from each individual property owner.

Problem Statements

There are several barriers that may prevent the multifamily sector from fully taking advantage of energy efficiency opportunities. These barriers include:

- » **Financial Constraints.** Energy-efficient upgrades can be quite costly. Multifamily property owners face difficulty in receiving loans for energy efficiency upgrades, as the risk-adverse underwriting market and lack of existing valuation for energy efficiency upgrades often results in high interest rates.³⁵
- » **Difficulty in Accessing Decision Makers.**³⁶ The majority of large market-rate properties are managed by property management companies. Within the structure of these companies, it can be difficult to communicate with property owners, who are often the primary decision makers on capital improvements spending.
- » **Split Incentive Issue.** The vast majority of multifamily property residents rent the unit they occupy.³⁷ When renters are responsible for paying utility bills, building owners are not incentivized to invest in upgrades from which they will not receive financial benefits.
- » **Contractor Limitations.** Based on community feedback that MCE received at a contractor workshop, there is a perception among some contractors that rebate programs are time and labor intensive. Therefore, some contractors give customers an out-of-pocket discount to avoid referring projects to existing rebate programs.
- » **Negative Customer Experience.** MCE attended a multifamily property safety meeting in Richmond where participants who participated in other low-income energy efficiency programs provided MCE with negative feedback regarding the quality of those programs, leading to reluctance to participate in MCE's Multifamily Energy Savings Program.

MCE's multifamily program is designed to address these barriers by reaching customers at trigger points and offering tailored solutions.

Trigger Points

Trigger points are moments of opportunity when the likelihood of engaging customers in an energy efficiency program is highest.

For example, there are particular times over the lifetime of a multifamily building when it is most cost effective to make energy efficiency upgrades. MCE will tailor its offerings to capitalize on opportunities such as:

- » Unit turnover
- » Major rehabilitation and renovations
- » Emergency equipment failure
- » And, affordable housing financing and budget cycles

35 Energy Efficiency Financing in California: Needs and Gaps. Harcourt, Brown and Carey, Inc. (2011) p. 24. Available at http://www.harcourtbrown.com/wp-content/uploads/CPUC_FinancingReport_HBC_Jul8v2.pdf

36 2010–2012 Multifamily Property Owner and Operator Study, Cadmus. (2013) p. 21. Available at http://www.calmac.org/publications/Multifamily_Property_Owners_and_Managers_GEN_POP_FINAL_130415.pdf

37 "Overlooked and Untapped: Unlocking the Energy-Efficiency Potential in Multifamily Housing." Benningfield Group. 2010.

Additionally, MCE will use upcoming or anticipated changes in codes, standards, and regulations as a trigger point to motivate multifamily customers to act on resource conservation.

MCE's objective is to utilize these trigger points to effectively engage customers in energy efficiency measures. To achieve this, MCE must identify and understand the entities that influence this sector.

Key Market Actors

There are many entities that influence the multifamily sector. It is important that MCE understands the role that each entity plays and how this can affect efforts to promote energy efficiency.

- » **Local Governments.** Local governments set local building and zoning laws, issue building permits, influence affordable housing policies, and provide information to local residents and property owners. Local governments have a pre-existing relationship with their constituents and are attuned to the community's opportunities, needs, and challenges.
- » **Property Owners and Developers, Home Owners Associations, and Property Management Companies.** Property owners are the primary decision makers and funders of capital improvements. Working with owners to implement upgrades over a portfolio of properties will support deeper upgrades through the development of long-term plans. Property managers, facility managers, and property management companies are the "boots on the ground" for replacement and maintenance of capital equipment. These key players are integral to the success of MCE's multifamily sector offerings. MCE will engage them in order to accomplish projects and will endeavor to build lasting relationships.
- » **Contractors, Builders, Designers, Architects, and Engineers.** Contractors, builders, designers,

architects, and engineers are important influencers of building owners and operators and are crucial to making referrals to energy efficiency programs. These key players often hold significant authority regarding the energy efficiency and capital improvements to properties. MCE will provide targeted workforce opportunities to these individuals to create a shift in the building industry to better incorporate energy efficient decision making.

MCE tracks key market actors in order to identify opportunities and challenges, and the impact of these entities on a customer's energy efficiency decision making.

Adoption and Penetration

Before developing multifamily program strategies, MCE evaluated current adoption and penetration of energy efficiency programs to identify opportunities and determine market gaps.

In the 2010–2012 program cycle, PG&E programs saved approximately 17 GWh and just under 2 MMtH in the multifamily sector.³⁸ The vast majority of the electricity savings came from indoor lighting, with much smaller savings coming from HVAC, appliances, and water heating. On the gas side, water heating generated the greatest savings, with HVAC and appliances contributing smaller savings figures.

According to MCE's internal tracking system, the multifamily program has provided technical assistance to more than 4,621 units and has completed upgrades in over 1,900 units over three years. The program has achieved the greatest savings from domestic hot water measures, pool pumps and lighting.

³⁸ "California Energy Efficiency Statistics," accessed July 9, 2015, <http://eestats.cpuc.ca.gov/Views/EEDataPortal.aspx>

In addition to the energy efficiency programs administered under California Public Utilities Code Section 381.1, there are also energy efficiency programs available to the low income sector. The Energy Savings Assistance Program (ESAP) is administered in MCE's service area by PG&E. The ESAP provides free installation of energy saving equipment and performs energy upgrades at no cost to program participants. To qualify for these services, household incomes must be at or under 200% of the federal poverty level.

In program years 2007–2012, PG&E provided ESAP services to 81,555 participants, or 21% of the eligible population.³⁹ Information for program year 2010–2012 shows that of 58,877 multifamily households served through the ESAP, the most commonly installed measures were lighting (89% of households received lighting), domestic hot water (84%), and building envelope and air sealing (82%).⁴⁰ Other measure categories included appliance replacement: primarily refrigerators (14%), cooling equipment (14%), and heating equipment (1%).⁴¹

At the November 10, 2016 California Public Utilities Commission voting meeting, MCE's proposal for the Low Income Families and Tenants pilot (LIFT) was approved.⁴² MCE will run the LIFT pilot for two years with a budget of \$3.5 million. MCE will layer additional rebates onto multifamily projects at affordable properties that complete in-unit upgrades. Other objectives will include a heat pump pilot, resident education, referrals to the Low Income Weatherization Program (which provides rebates for solar systems), and to enroll properties in MCE's on-bill repayment financing program at a reduced interest rate.

9.3 Intervention Strategies

The multifamily program is an area where MCE's flexibility can greatly reduce participation barriers in tenant/owner situations. MCE takes a phased approach with multifamily upgrades, allowing owners to plan larger projects that take advantage of maximum incentive levels but are implemented over time, as tenants turn over. A combination of light-touch, bundled, and customized measures help accommodate the specialized needs of each multifamily building upgrade opportunity.

Based on the sector analysis, MCE will implement the following multifamily program offerings.

Combined Measure Incentives

The combined measure incentive program provides free technical assistance to property participants, including an initial on-site assessment, help in soliciting contractors, project management oversight, and post-project installation verification. Under this program, participants will need to complete at least two measures and incentives are offered on a per unit basis, with incentives increasing based on the depth of the project. If upgrades will be completed over a longer period of time, MCE will support project phasing; however, MCE will require monthly progress updates in order to continue to reserve rebates for a project with an extended completion schedule.

Single Measure Incentives

MCE will offer rebates on single measures to get properties engaged with its program. Examples of single measures would be small lighting projects, appliance replacements in 50% or less of units, window replacements, and pool pump replacements. These single measure rebates allow properties to complete smaller, cost-effective energy savings upgrades with little to no tenant disruption. This approach is intended to address an immediate need or a specific problem at the property. By meeting the

39 Energy Savings Assistance Program Multifamily Segment Study, Volume 1: Report. Cadmus, 2013. P.58.

40 Ibid, p.62.

41 Ibid.

42 D 16.11.002, CPUC.

immediate need and solving a specific problem, MCE hopes to provide a positive customer experience which will result in repeat participation and achieving deeper retrofits.

In-Unit Direct Install Service

MCE will offer a no-cost direct install service to multifamily properties in its service area. Representatives of MCE will install measures such as LEDs and high performance faucet aerators and showerheads in participating units. This service will be offered in two formats:

- » As a stand-alone offering for tenants who would like to upgrade their energy and water saving equipment.
- » As part of a larger combined measure project scope at the request of the property owner or manager.

The direct install service is also a component of MCE's workforce development program. MCE will partner with local workforce development organizations to provide outreach and equipment installation trainings to develop a pool of installers. In addition to installing equipment, direct install team members will educate tenants on energy and water conservation, the equipment being installed, and any larger upgrades being undertaken at the property.

Unit Turnover Program

MCE has found that property owners and managers are more willing to invest in energy efficient upgrades in tenant units when the unit is vacant. Thus, MCE has begun piloting a process to help property managers schedule in-unit upgrades at the time of unit turnover. Normally, a property would be required to do in-unit upgrades in at least 75% of units to be eligible for in-unit measure incentives under the combined measure rebate offering. However, MCE will work with property owners who commit to a

phased schedule to pay out incentives incrementally as units are upgraded.

Retrocommissioning and Maintenance Education Programs

In order to support ongoing energy savings beyond equipment replacement or retrofit, MCE will offer support for property managers to develop long-term energy management plans. These plans will achieve energy savings and help ensure persistence of previously realized savings. Strategies employed under this offering could include incentives for retrocommissioning and operations and maintenance training for building staff.

Zero Net Energy

The California Public Utilities Commission (CPUC) and the CEC have reinforced a commitment to increased development of Zero Net Energy (ZNE) buildings in California. For the purposes of this program offering, MCE defines a ZNE building as one that annually produces at least as much energy on site as it consumes. To achieve statewide carbon mitigation goals, ZNE buildings will be crucial, and deep retrofits for existing buildings will be necessary. Significant design and technical assistance will be required to help new construction reach ZNE goals. MCE will offer additional incentives and technical assistance to multifamily properties that are interested in reducing their energy consumption to the point that they could reasonably offset their full load with a combination of deep retrofits and on-site generation.

A significant part of this offering will be outreach and education about the value of ZNE to generate interest within the multifamily sector and to ensure that there is a robust trained network of professionals. MCE will work with ZNE and passive house advocates and local governments to advocate for codes and standards that will facilitate successful development of ZNE projects.

Tenant Education Strategies

MCE will develop an online platform that is specifically for tenants. The platform will provide how-to and do-it-yourself resources aimed specifically at renters, as well as resources to provide property managers or owners with information on MCE's rebate offerings to support property-wide upgrades.

MCE will explore opportunities to integrate the platform with home automation devices and programmable thermostats, enabling tenants to participate in emerging residential side demand response programs and take advantage of time-of-use rates. The SPOC will facilitate access to these programs where appropriate.

Data Access

MCE uses a portfolio manager dashboard to assist multifamily properties and portfolios of properties in accessing their energy and water data. The dashboard allows properties to better understand their usage and identify potential issues and opportunities. MCE is able to support properties in addressing these issues by connecting properties to necessary resources.

Financing

MCE will help customers navigate the landscape of available financing offerings and encourage them to participate to the extent that it facilitates energy efficiency upgrades. Financing structures can possibly stimulate investment where the split incentive would otherwise present a barrier. Specific financing strategies are described below.

» Green Property Loans

This on-bill repayment option provides eligible customers with a low interest loan they can repay on their monthly utility bill. The program is a public/private partnership between MCE and River City Bank. MCE has set aside ratepayer funds to

serve as a loan loss reserve, which will cover any losses the bank incurs on a portfolio of loans up to 20% of the value of the total portfolio. In exchange, the bank has agreed to a lower interest rate. The loan terms and conditions are detailed below.

Table 8. Terms of MCE's Green Property Loan

Interest Rate	5% APR
Loan Terms	5–10 years
Security	UCC–1 Fixture Filing
Eligible Projects	Multifamily properties participating in an MCE rebate program

» Property Assessed Clean Energy

Property Assessed Clean Energy (PACE) is a tool where property owners can voluntarily opt into a tax assessment, which is then tied to the property. Advantages of PACE include transferability with the property, helping to mitigate concerns over the payback period and average tenancy in a building, and the fact that it is paid on property taxes. PACE financing also enables investment in renewable energy and water savings improvements, and in some cases can be a source of financing for new construction projects.⁴³

Currently MCE and the County of Marin have established an Open Market PACE model, where any provider who can agree to a minimum set of best practices is eligible to operate in Marin. MCE will seek to work with other parts of its service area to expand this approach to PACE. SPOCs will refer customers to PACE providers if the customer is interested in this option.

43 Some PACE providers utilize SB 555 (2012) as the enabling legislation; this follows the Mello-Roos style assessment (rather than the Streets and Highways Code assessment enabled under AB 811 [2008]), which can be used for new construction.

» **Bay Area Multifamily Capital Advance Program**

The Bay Area Multifamily Capital Advance Program (BAMCAP) is offered by BayREN and provides loan capital at 0% interest to a lender of choice, which means participants only pay interest on the loan capital supplied by the lender. For example, if the lender approves their portion of the energy efficiency loan at 7% interest rate, BAMCAP provides half of the capital at 0%, the combined interest rate on the loan would be 3.5%. The program's share of the financing is limited to no more than 50% of the cost of the approved scope of work minus any program incentives.

In addition, the share of the financing is up to \$5,000 per unit or \$500,000 per project, whichever is less.

Metrics Tables (Table 9)

Alongside the other program administrators, MCE developed metrics that connect market barriers to intervention strategies, and that provide near, mid, and long term targets that build towards a 10-year vision. The metrics are based on the framework presented to the Energy Division in August 2016, which emphasized:

- » Usefulness for program administrators to manage portfolio
- » Information on the progress towards achieving desired market effect(s) and strategy effectiveness
- » Reliance on data collected during program implementation and/or data reporting to CPUC
- » Simple to understand and clear of any subjectivity
- » Emphasis on long-term outcomes

9.4 Evaluation, Measurement & Verification

MCE will track metrics for measurement and verification (M&V) but will need to conduct Evaluation, Measurement, and Verification (EM&V) to gain richer insights through process and impact evaluations including two specific study proposals discussed below.

Anticipated Study Needs

MCE will undertake a process evaluation at the end of year two of the unit turnover strategy. The evaluation will explore the extent to which the phased approach helps property owners commit to larger projects and the expected rate of tenant turnover in participating properties. Based on the findings, the evaluation will offer recommendations about program continuation and recommendations for improvement.

Additionally, MCE will conduct a cross-program process evaluation of the SPOC offering to determine to what degree it helps alleviate customer confusion and encourages repeat participation through project phasing.

9.5 Coordination

MCE is an independent Program Administrator operating within PG&E's service territory and overlapping Bay Area Regional Energy's service territory. Coordination among different programs will be important to minimize customer and contractor confusion while also achieving program objectives.

As part of the SPOC model, MCE will partner closely with other organizations promoting resource conservation, including water districts, climate coalitions, renewable and distributed generation companies and installers, and electric vehicle technology companies. MCE will communicate

Table 9. Multifamily Sector Market Barriers & Metrics

Problem Statement	Market Barriers	Desired Market Effects/10-year Vision	Intervention Strategies
Energy efficiency upgrades can be costly	Lack of capital and willingness to incur financing	Energy efficiency becomes the norm (7% increase over 2016 baseline)	<ol style="list-style-type: none"> Educate property owners on the value of energy efficiency upgrades¹ Work with properties to develop long-term scope of work that fits into capital improvement plans Develop programs that address entire portfolios
Energy efficiency upgrades can be costly ²	Risk adverse underwriting and high-interest loans	Financing programs that meet the needs of property owners opposed to financial institutions (5% increase over 2016 baseline)	<ol style="list-style-type: none"> Work with partners to design financing programs that meet the needs of properties³ Partner with existing financing programs to educate properties on their options
Affordable properties and HOAs have multiple owners and complex operating structures requiring time—consuming coordination to get buy-in, consensus and sign-off for individual measures and large-scale projects	It is difficult to access decision makers	MCE is the first point of contact for property owners considering upgrades (7% increase over 2016 baseline)	<ol style="list-style-type: none"> Partner with trusted entities already working with properties⁴ Leverage existing relationships for introductions to other decision makers⁵ Targeted outreach to decision makers⁶
Market rate property owners are more likely to complete common area measures than resident unit upgrades ⁷	Property owners are hesitant to disturb or displace residents and risk loss of income	Energy efficiency improvements are valued and desired by renters (7% increase over 2016 baseline)	<ol style="list-style-type: none"> Develop a long-term plan to upgrade units at turnover using a sliding scale incentive Resident energy efficiency certificate program
Renters are typically responsible for paying their own utility bill, disincentivizing owners from paying for in-unit upgrades ⁸	Split-incentive issue	Energy efficiency improvements are valued and desired by renters (7% increase over 2016 baseline)	<ol style="list-style-type: none"> Stand alone direct install program Resident energy efficiency certificate program Cost-share direct install program for in-unit measures Higher incentives for in-unit measures paid for by owners⁹
Contractors perceive rebate programs to be time and labor intensive ¹⁰	High transaction cost of engaging with complex rebate programs	Contractors incorporate energy efficiency measures into all proposals and MCE is their first point of contact for rebate programs (7% increase over 2016 baseline)	<ol style="list-style-type: none"> Establish a contractor advisory committee to help design and champion program offerings¹¹ Develop feedback loops for contractor input on processes and systems Work with manufacturers to train contractors on new technologies
Properties are reluctant to participate in current programs based on past experiences being negative ¹²	Property owners'/ managers' perception of rebate programs	MCE is the first point of contact for property owners considering upgrades (7% increase over 2016 baseline)	<ol style="list-style-type: none"> Add more resources offerings to the SPOC program SPOC will build and maintain long-term relationships with property owners and managers¹³ Provide opportunities for properties to experience MCE's program without having to make a long-term commitment

Sector Metric	Baseline	Metric Source	Short Term Target (1–3 years)	Mid Term Target (4–7 years)	Long Term Target (8–10 years)
<ol style="list-style-type: none"> Number of properties completing assessments Number of properties that complete multiple projects over multiple years Dollar amount of rebates given at the portfolio level 	2016 baseline	Program tracking data	Increase 2% over baseline	Increase 5% over baseline	Increase 7% over baseline
<ol style="list-style-type: none"> Number of loans disbursed Increase in number of referrals to other financing programs 	2016 baseline	Program tracking data	Increase 1% over baseline	Increase 3% over baseline	Increase 5% over baseline
<ol style="list-style-type: none"> Number of properties brought in by trusted partners Number of projects from referrals Number of meetings/presentations to decision makers 	2016 baseline	Program tracking data	Increase 2% over baseline	Increase 5% over baseline	Increase 7% over baseline
<ol style="list-style-type: none"> Percentage of market rate property owners completing common and in-unit measures Number residents receiving certifications 	2016 baseline	Program tracking data	Increase 2% over baseline	Increase 5% over baseline	Increase 7% over baseline
<ol style="list-style-type: none"> Number of units served Number of units receiving in-unit upgrades where resident pays utility bill Number of units served Number of units receiving upgrades (not including DI) 	Determine baseline from PY1 data	Program tracking data	Increase 2% over baseline	Increase 5% over baseline	Increase 7% over baseline
<ol style="list-style-type: none"> Number of unique contractors on the advisory committee Number of project referrals from contractors Number of contractors participating in trainings 	Determine baseline from PY1 data	Program tracking data	Increase 2% over baseline	Increase 5% over baseline	Increase 7% over baseline
<ol style="list-style-type: none"> Number of referrals to other resource/ rebate programs Number of properties completing multiple projects Number of properties phasing upgrades 	2016 baseline	Program tracking data	Increase 2% over baseline	Increase 5% over baseline	Increase 7% over baseline

- 1 Center for Sustainable Energy. Energy Upgrade California: Marketing Plan 2013-2014 pg 49.
- 2 Existing Buildings Energy Efficiency Action Plan. CEC. (2015) p. 12. Available at CEC.com/laladoc.
- 3 Casey J. Bell, Stephanie Sienkowski, and Sameer Kwatra, "Financing for Multi Tenant Building Efficiency: Why this Market is Underserved and What Can be done to Reach It," Washington, D.C.: ACEEE, 2013. Pg. iii.
- 4 Existing Buildings Energy Efficiency Action Plan. CEC. (2015) p. 66. Available at CEC.com/laladoc.
- 5 Energy Upgrade CA Marketing Plan 2013-2014. Center for Sustainable Energy. (2013) p. 97. Available at www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6091
- 6 Existing Buildings Energy Efficiency Action Plan. CEC. (2015) p. 58. Available at CEC.com/laladoc.
- 7 Financing for Multi Tenant Building Efficiency: Why this Market is Underserved and What Can be done to Reach It. Casey J. Bell, Stephanie Sienkowski, and Sameer Kwatra. (2013) Pg. iii.
- 8 Overlooked and Untapped: Unlocking the Energy Efficiency Potential in Multifamily Housing. Benningfield Group. (2010). Available at http://in-online.co/wp-content/uploads/2015/02/BenningfieldGroup_Brochure_9-FINAL.pdf
- 9 Existing Buildings Energy Efficiency Action Plan. CEC. (2015) p. 17. Available at CEC.com/laladoc.
- 10 Feedback form a Contractor Workshop held in 2014 by MCE, Marin County Energy Watch and PG&E.
- 11 Existing Buildings Energy Efficiency Action Plan. CEC. (2015) p. 63. Available at CEC.com/laladoc.
- 12 Feedback from Richmond property managers at a 2013 Richmond Safety Meeting.
- 13 Existing Buildings Energy Efficiency Action Plan. CEC. (2015) p. 67. Available at CEC.com/laladoc.

regularly with these entities to ensure that they have the latest program information.

MCE will facilitate program participants' applications for rebates with these partner agencies and to the extent possible integrate those applications with the MCE application to streamline customer participation in multiple programs.

Key Partners

MCE will adjust its partnership strategy throughout the program cycle based on key performance indicators and customer needs and drivers. MCE constantly seeks new partnership opportunities to help achieve its end goal of deeper energy and greenhouse gas savings.

Some of the key partners include:

- » **Building Industry Partners.** MCE will work with builders and contractors to generate referrals. MCE will connect with building industry partners through local organizations and through direct outreach. MCE will partner with local building officials to identify the contractors pulling the most permits

in the region, and will conduct targeted outreach to them.

- » **Technical Assistance Providers, Raters, and Inspectors.** MCE will conduct outreach to educate technical assistance providers, raters, and inspectors for project referrals. MCE will work with professional organizations such as the Building Performance Institute to identify trained professionals in its service area, and will use this information to reach out to professionals and ensure they are aware of the MCE program offerings. MCE will also use these channels to communicate the availability of specific incentives including a referral bonus for completed projects.
- » **Energy Services Company/Tax Credit Allocation Committee/Housing & Urban Development.** MCE will work with Energy Services Companies, the Tax Credit Allocation Committee providers, and the Department of Housing and Urban Development to ensure affordable housing developers are aware of MCE's multifamily program offerings. MCE will leverage the LIFT pilot funding for eligible properties to provide additional incentives and energy savings for income qualified customers.

- » **Local Governments.** MCE will work with local governments to advocate for codes and standards that support the inclusion and ease of implementation for ZNE projects.
- » **Manufacturers.** MCE will partner with manufacturers to provide demonstrations and trainings on the use of new equipment and technologies.
- » **Community Based Organizations.** MCE will partner with community programs offering services and support around health and safety issues and to conduct education and outreach.
- » **Real Estate Agents and Moving Companies.** Real estate professionals and moving companies have access to multifamily property decision makers and

tenants at key trigger points. Working with these entities will enable access to properties at the right time to influence efficiency upgrades.

- » **Building Supply Stores.** MCE will work with equipment supply stores to create awareness around available rebates. Opportunities here include labeling eligible equipment on the store shelves and working with stores to display outreach materials at checkout counters. Many stores also have established relationships with the contractor community through special programs; MCE will work with local stores to identify these relationships and gain access to these communication channels where possible.

Table 10 maps strategies to key partners. It is not intended to be fully comprehensive, but rather, a visual representation. ■

Table 10. Multifamily Key Partners

	Combined Measure Incentives	Light Touch Measure Incentives	In-unit Direct Install Service	Unit Turnover	RCx & Maintenance Education	Zero Net Energy	Tenant Education	Financing	Marketing & Outreach
Building Industry Allies	X	X		X	X	X		X	X
Technical Assistance Partners	X	X	X	X	X	X	X	X	X
Lending Institutions								X	X
ESCO / TCAC / HUD	X	X	X		X		X	X	
Local Governments						X	X	X	X
Community Organizations			X		X	X	X	X	X
Real Estate Organizations				X		X			X
Building Supply Stores							X		X

10. INDUSTRIAL SECTOR

10.1 Introduction

Dollar savings from energy efficiency are significant for some industrial customers. A key consideration for these customers is the need to ensure that reduced energy use does not affect the timing, quality, or workforce efficiency of creating their product. Industrial activities vary significantly by region within MCE's area, though most offer major opportunities for energy use reduction, water conservation, and distributed generation.

The high-intensity energy demand of food production qualifies many of MCE's agricultural customers that process on-site as "industrial" ratepayers. Thus, in some cases MCE's industrial program is designed to serve both manufacturing and refinery facilities as well as some large agricultural producers.

MCE's industrial program is designed to serve all types of industrial customers. The program acknowledges inherent differences in opportunities between the myriad types and sizes of facilities, and emphasizes integrating diverse program offerings under one umbrella. The program focuses on customer satisfaction and repeat engagement to drive towards greater GHG reduction, and ultimately driving toward customer transformation.

Core Activities

- » Provide participants with an Industrial Single Point of Contact (SPOC) to serve as a facilitator and customer advocate and to help guide business owners through the process from initial contact to project completion.
- » Offer financing and rebates to help overcome upfront cost barriers.
- » Offer technical assistance to help with measure selection, project planning, and project management.
- » Use billing data and building characteristics to identify the highest energy users for targeted outreach.
- » Utilize one-off or widget rebates as a marketing strategy to get customers in the door.

Key Innovations

- » Promote energy efficient industries by partnering with existing Green Certification Programs.
- » Leverage peer advisory groups to offer training within a particular industry and share best practices.

- » Offer pay-for-performance incentives.
- » Promote strategic and continuous energy improvement.

Summary Tables

The proposed budget for the first four years of the multifamily program is as follows.

Table 11. Industrial Program Budget Summary

Budget Category	Year 1	Year 2
Administrative	\$97,782	\$101,289
Marketing	\$110,902	\$110,902
Direct Implementation	\$497,945	\$497,945
Incentives	\$289,780	\$517,564
Evaluation, Measurement, and Verification (EM&V)	\$45,893	\$49,588
TOTAL	\$1,042,302	\$1,277,288

The expected total resource cost and estimated savings are detailed below:

Table 12. Cost Effectiveness Summary

Sector Summary	Year 1	Year 2
Total Resource Cost (TRC)	1.24	
Budget	\$1,042,302	\$1,277,288
Estimated Net Savings	352,310 kWh	830,725 kWh
	76,256 therms	113,910 therms

Figure 23. Integrated Program Structure — Industrial

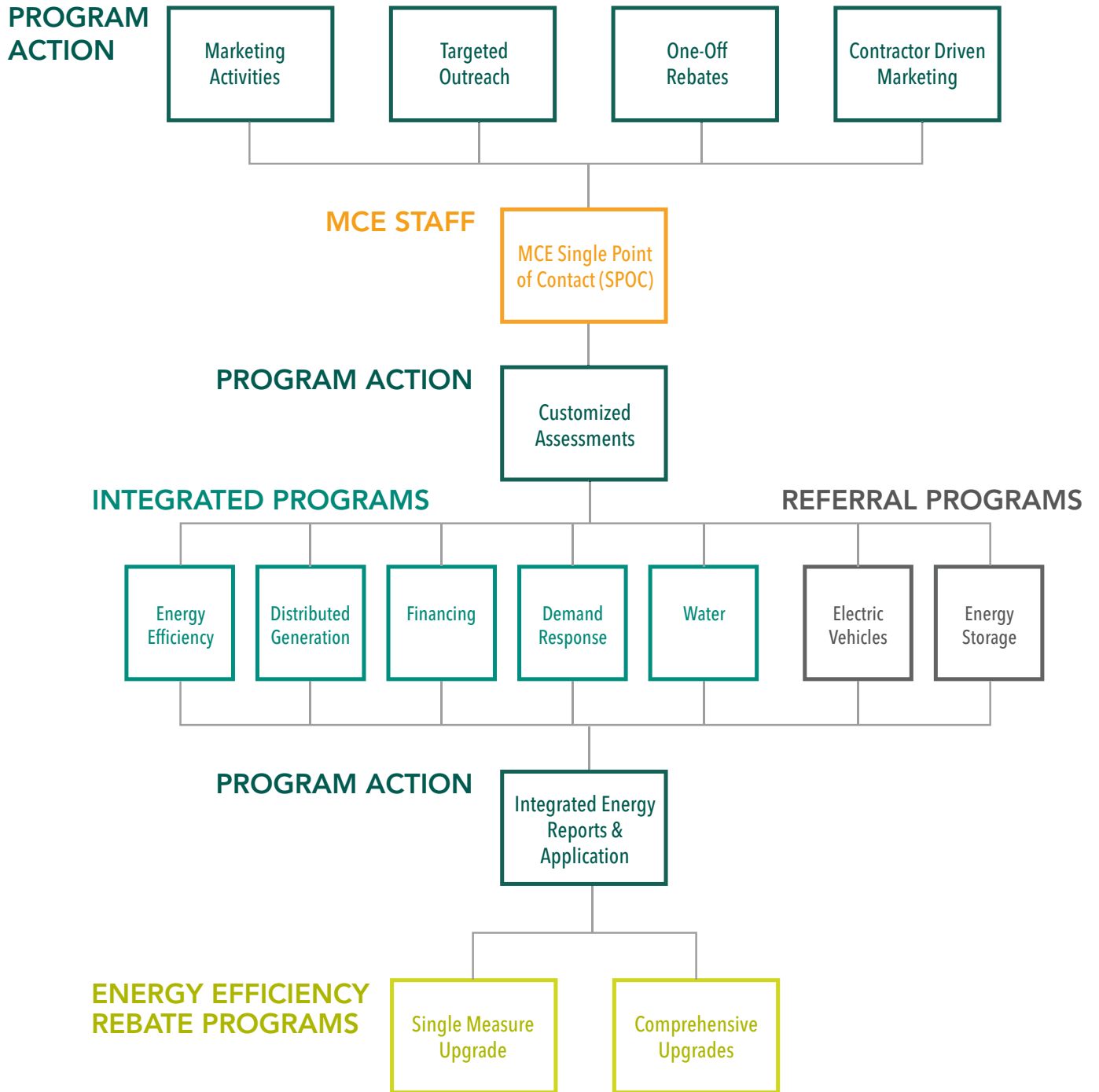
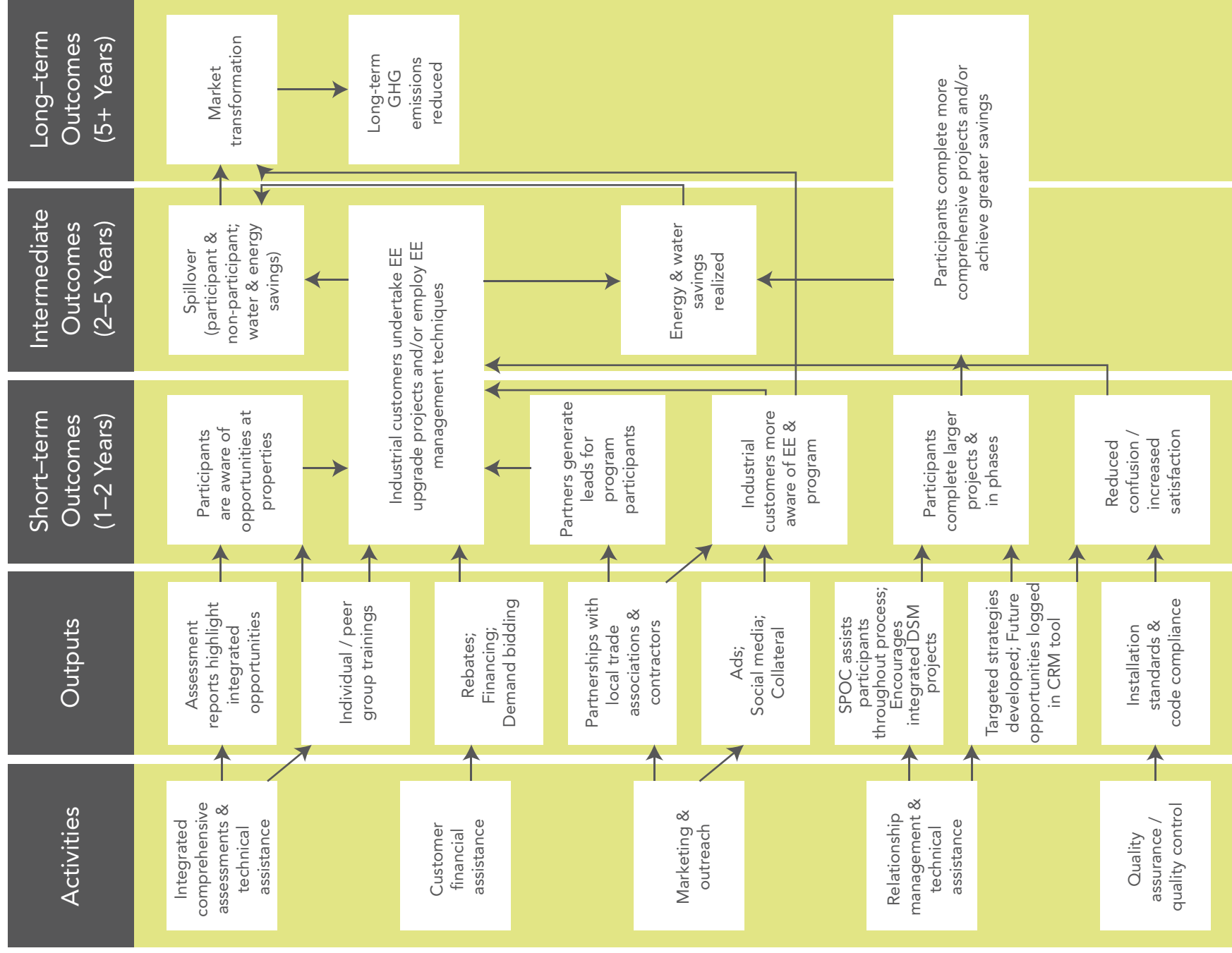


Figure 24. Industrial Program Logic Model



10.2 Gap Analysis and Market Characterization

MCE researched the industrial market size, basic demographics, and the landscape of existing programs. There are a handful of existing industrial programs in MCE's service area. For instance, ENERGY STAR offers the "Challenge for Industry"⁴⁴ program; PG&E offers programs such as Industrial Energy Advisor, calculated incentives, deemed incentives, and a continuous energy improvement program.

Given the uniqueness of each facility, the industrial sector requires highly tailored customer solutions. MCE's intervention strategies offer a unique one-stop shop that integrates programs such as demand response, distributed generation, energy efficiency, and water savings to maximize the value of the project for each customer.

MCE has analyzed energy consumption, barriers, triggers, key market actors, and energy efficiency adoption to better understand the opportunities that exist within the industrial sector. MCE's market characterization focuses primarily on a combination of energy consumption and publicly available data.

Energy Consumption

Within MCE's service area, industrial and commercial customers account for about 60% of electricity consumption and 41% of the gas usage.⁴⁵

Some examples of industrial customers in MCE service area include ports, refineries, glass factories, and wineries.

Problem Statements

There are several barriers that may prevent the industrial sector from fully taking advantage of energy efficiency opportunities. These barriers include:

- » **Financial Constraints.** While some larger companies may have the capital available to undertake projects, energy efficiency upgrades need to compete against other possible investments for funding and often have to pass initial screening to be considered, such as a short payback period (typically one to three years).⁴⁶
- » **Corporate Tax Structures.** Federal tax policy on issues such as depreciation and treatment of energy costs can complicate weighing the costs and benefits of upgrades.
- » **Budgetary Planning Cycles.** Energy efficiency programs should work around customers' budgetary planning cycles to ensure projects are proposed and considered at the appropriate time and that expensive upgrades can be incorporated into capital planning processes.
- » **Failure to Recognize Non-Energy Benefits.** Non-energy benefits such as reduced maintenance costs, grid reliability, and improved air quality are often not built into project proposals.
- » **Equipment Downtime.** The lost production time resulting from equipment being off-line for upgrades is costly to a manufacturer.
- » **Unique Processes Can be Difficult to Benchmark.** Each manufacturer may have unique and specific processes that make it difficult to find appropriate

44 ENERGY STAR Challenge for Industry. Available at https://www.energystar.gov/buildings/facility-owners-and-managers/industrial-plants/earn_recognition/energy_star_challenge_industry2

45 MCE internal data. Data for the Commercial and Industrial sectors have been combined to comply with CPUC privacy regulations.

46 Barriers to Industrial Energy Efficiency. U.S. Department of Energy. (2015). Available at https://www.energy.gov/sites/prod/files/2015/06/f23/EXEC-2014-005846_6%20Report_signed_0.pdf

comparisons to determine the relative efficiency of each site.

- » **Proprietary Information.** Manufacturers with unique processes may be unwilling to invite outside energy auditors to assess their facilities in the interest of protecting proprietary information.
- » **Lack of Awareness.** Smaller manufacturers may not have dedicated energy professionals on staff. With limited staff resources, the time needed to research energy efficient equipment and rebate programs may be a significant barrier.

MCE's industrial program is designed to address these barriers by reaching customers at trigger points and offering tailored solutions.

Trigger Points

Trigger points are moments of opportunity when the likelihood of engaging customers in an energy efficiency program is highest. Trigger points for industrial customers include:

- » **Equipment Failure.** Once equipment fails the ability to replace it quickly is critical. Establishing a relationship with customers prior to equipment failure is crucial to MCE's ability to influence the efficiency of the replacement equipment and to encourage a more comprehensive efficiency project.
- » **Coordination with other Resource Conservation Programs.** There is an opportunity to further reduce GHG emissions and stack value streams for the customer by coupling energy efficiency upgrades with other program opportunities, such as demand response and renewable energy generation.
- » **Capital Improvement Campaigns.** Larger industrial customers are likely to have a longer

term planning horizon for managing equipment turnover or making investments and improvements. This longer planning horizon can create an opportunity to incorporate energy efficiency into overall procurement.

- » **Change in Law or Regulation.** MCE will use upcoming or anticipated changes in codes, standards, and regulations as a trigger point to motivate industrial customers to act on resource conservation.

MCE's objective is to utilize these trigger points to effectively engage customers in MCE's energy efficiency offerings. To achieve this, MCE must identify and leverage the entities that influence this sector.

Key Market Actors

There are many entities that influence the industrial sector. It is important that MCE understand the role that each entity plays and how this can affect efforts to promote energy efficiency.

- » **Contractors.** Contractors are the primary point of contact with customers. They are involved in installation of projects and often have influence over the decision making process.
- » **Industry Groups.** Industry groups, such as West Contra Costa Council of Industries, Concrete Masonry Association of California and Nevada, and California Manufacturers and Technology Association, have broad networks of members that can be potential program participants. They also have knowledge of issues affecting the industrial sector and can be valuable advisors.
- » **Equipment Distributors and Manufacturers.** Equipment distributors and manufacturers have control over which products are available on the market.

- » **Regulatory bodies.** Regulatory bodies, such as the Occupational Safety and Health Administration, United States Food and Drug Administration, California Energy Commission, California Public Utilities Commission (CPUC), and others set the rules that govern the market which may affect product availability, product prices, and program design.
- » **Existing energy efficiency programs.** Existing energy efficiency programs have been working with the industrial sector to offer rebates, education, and advocacy around energy efficiency issues.

MCE tracks key market actors in order to identify opportunities and challenges, and the impact of these entities on a customer's energy efficiency decision-making.

Adoption and Penetration

Before implementing industrial program strategies, MCE evaluated current adoption and penetration of energy efficiency programs to identify opportunities and determine market gaps.

In the 2013 to 2015 program cycle, PG&E industrial programs saved nearly 82 GWH of energy, although MCE has not received figures on how much of that occurred in MCE service area.⁴⁷ The most commonly installed measures through PG&E's programs were process pumping, high bay fluorescents, motors, and air compressors. While this provides some insight into savings potential and measure opportunities, much more information is needed to understand the specific opportunities in MCE's service area.

10.3 Intervention Strategies

Based on the market characterization, gaps, barriers, and trigger points, MCE proposes to pursue the following intervention strategies:

Technical Assistance and Comprehensive Projects

MCE will offer technical assistance to customers to help them understand the full scope of available resource conservation options. Program offerings will focus on pumps, motors, lighting, refrigeration, water heating, and water conservation measures.

The technical advisor will create a comprehensive report outlining the rebates available to the customer at the time, including those offered through other program administrators, state, and federal programs, as well as take note of when existing equipment may be nearing the end of its expected useful life. This information will be entered into a Customer Relationship Management (CRM) system to allow the Single Point of Contact (SPOC) to follow up at the appropriate points in the future when the customer is likely to be making purchasing decisions. The SPOC will serve as a project facilitator and customer advocate to help guide business owners through the process from initial contact to project completion as well as helping to identify future participation opportunities.

After the assessment report is complete, the SPOC and technical advisor will work with the customer to develop a work plan for projects they intend to complete in the short-, mid-, and long-term. Project phasing will be encouraged to lessen barriers related to restricted capital and equipment replacement schedules.

On project completion, the SPOC will work with the customer to help them with local certification or recognition programs and help them market their investment in energy efficiency.

⁴⁷ 2013–2015 California Energy Efficiency Program Cycle Statistics. CPUC EE Stats. (2016). Available at <http://eestats.cpuc.ca.gov/Views/EEDataPortal.aspx>

Single Measure Rebates

MCE will offer single measure rebates for certain common measures as an introduction to the program. The program will work closely with its contractor network to allow them to be the primary driver of this offering and minimize any contractor participation barriers such as burdensome paperwork and long rebate turnaround time.

Single measure rebate recipients will be screened by the SPOC for opportunities for deeper upgrades and encouraged to receive a full assessment through the comprehensive program offering and to consider the pay-for-performance program. Measures will likely include, but are not limited to pumps, motors, lighting, refrigeration, water heating, distributed generation, and water conservation measures.

Benchmarking

MCE will investigate benchmarking platforms (such as Environmental Protection Agency's ENERGY STAR for Industry) and program design frameworks to assist customers in gathering data and taking appropriate action.

Data Analytics

MCE will leverage insights from data analytics platforms to better target stranded potential, and provide tailored solutions when approaching customers.

Pay-for-Performance

MCE will offer incentives to customers based on measured and verified savings. This "pay-for-performance" approach will leverage Advanced Metering Infrastructure (AMI) data and innovative meter-based measurement strategies to capture real, verified savings while minimizing administration expenses. This program may be delivered in conjunction with demand response programs. The load reductions could then be aggregated and bid into California Independent System Operator (CAISO) market.

Another model that pay-for-performance can support is the use of a transaction structure in which a third-party investor finances building efficiency upgrades. MCE would then buy the actual energy savings from the third-party investor. MCE would partner with industry leaders to pilot this innovative approach to using energy savings as a means of income.

The approach is intended to spur investment by building a market for efficiency bundled with demand response, solar, electric vehicles, and distributed generation. Smart Meter measured savings increases transparency and can spread program risk across contractors, customers, program administrator, and investor.

Strategic and Continuous Energy Improvement

Strategic and Continuous Energy Improvement (S-CEI) aims to promote energy efficiency as a lifestyle. The typical pillars of an S-CEI program include: obtaining management support for ongoing energy efficiency enhancements, conducting ongoing assessments, trainings and improvements, and periodically developing and reviewing strategic efficiency goals. An emerging best practice is to offer energy management certification to help ensure the long-term success of projects. The goal is to create lasting changes driven from management and facilities personnel alike.

S-CEI projects can be similar to retrocommissioning in that they typically target more behavioral and operational measures; however, they go beyond retrocommissioning by emphasizing leadership buy-in and ongoing updates to energy management plans.

Anticipated benefits to MCE include measurement of actual savings, plus a higher likelihood of deeper savings, greater persistence, and improved customer satisfaction.

The program design will leverage findings from several recent Evaluation, Measurement, and Verification (EM&V) studies. One report, the 2012 Industrial Market Characterization⁴⁸ study provides trends in consumption, impact of legislation, program design for national programs, and market characterization. It also emphasizes the importance of management support, discusses strategies for specific sectors, and suggests a focus on “incremental improvement to existing equipment and technologies” not just technological upgrades.⁴⁹ Second, the 2013 Custom Impact Evaluation⁵⁰ provides insights to all industrial strategies, but its focus on free ridership⁵¹ has particular implications for S–CEI. The study found moderately high free ridership due to corporate policy or regulatory compliance, non–energy benefits, or decisions to implement energy efficiency improvements prior to application. It also suggested a need for better ex–ante reporting of operating conditions. Finally, a variety of studies have shown strategic energy management (a type of program that currently exists in a number of states and is similar to S–CEI in its emphasis on assessments, obtaining buy–in, and training staff) can help industrial customers reduce energy and water use through operations and management practices. Some studies point to higher cost–effectiveness for small to midsized customers that were engaged via cohorts and/or trade associations – or single engagements with large

industrial customers.⁵² All of this feedback will be integrated into the S–CEI program design.

Peer Outreach and Training Cohorts

In addition to, or as a sub–component of S–CEI, MCE will convene cohorts of similar small industrial customers to discuss experiences with energy efficiency upgrades and equipment maintenance best practices. MCE will develop targeted outreach efforts, trainings, and technical assistance for this group. When possible, MCE will aim to coordinate with existing industry groups to bring cohorts together at existing events. The focus of these groups will be on sharing best practices around operations, maintenance, and behavioral energy efficiency. Additionally, MCE will work with each group to develop energy management metrics. Bringing similar businesses together will foster a network for sharing best practices and benchmarking. The cohorts could also provide a valuable feedback channel for MCE on its program offerings. This program may be best delivered on a regional basis, thus MCE will coordinate with neighboring counties to the extent that there is a benefit.

Financing

MCE will help customers navigate the landscape of financing offerings available and encourage them to participate to the extent that it facilitates energy efficiency upgrades. Specific financing strategies are described below.

» MCE Green Business Loans

This provides eligible industrial customers with a low interest loan they can repay on their monthly utility bills. The program is a public/private partnership between MCE and River City Bank.

48 Industrial Sectors Market Characterization. Kema. (2012). Available at http://calmac.org/publications/Final_Industrial_Sector_Market_Characterization_Chemicals_Report.pdf

49 Ibid. page 5.

50 Custom Impact Evaluation: Industrial, Agricultural, and Large Commercial. Itron. (2013). Available at http://www.calmac.org/publications/ALC_2013_Report_Final_071715.pdf

51 “free riders [free ridership]” are defined as “Program participants who would have installed the program measure or equipment in the absence of the program. California Energy Efficiency Policy Manual. (2013). Page 53. Available at http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/EEPPolicyManualV-5forPDF.pdf

52 Process Evaluation of California’s Continuous Energy Improvement Pilot Program. Cadmus Group. (2012). Available at www.calmac.org/startDownload.asp?Name=CA_CEI_Process_Evaluation.pdf

MCE has set aside ratepayer funds to serve as a loan loss reserve, which will cover any losses the bank incurs on a portfolio of loans up to 20% of the value of the total portfolio. In exchange, the bank has agreed to a lower interest rate. As of December 2016, the interest rate is 5% for \$10,000 to \$265,000 projects, with 5- to 10-year payment terms (terms subject to change). Up to 30% of the loan value can be used for non-energy related projects.

» **Property Assessed Clean Energy**

Property Assessed Clean Energy (PACE) is a form of financing that enables property owners to pay for energy efficiency, renewable energy, and water conservation upgrades through a tax assessment on their property. Advantages of PACE include transferability with the property upon sale, long-term financing, and the ability to share the financing with tenants. Finally, it can be a source of financing for new construction projects.⁵³

MCE works with the County of Marin to implement an Open Market PACE model whereby any provider who agrees to a minimum set of best practices is eligible to operate in Marin. MCE will seek to work with other parts of its service area to expand this approach to PACE. Additionally, SPOCs will refer customers to PACE providers.

» **On-Bill Financing**

As of December 2016, the Investor Owned Utilities (IOUs) have a statewide program that uses ratepayer funds to offset the upfront cost of a project and the customer can pay back the improvements over time on the utility bill. This product, offered at 0% and available for loans between \$5,000 and \$100,000, requires

participants to limit the payback of projects financed through the loan to five years. The SPOC will ensure that customers who are a good fit for this program are made aware of the offering, and will facilitate participation to the extent possible.

Metrics Tables (Table 13)

Alongside the other program administrators, MCE developed metrics that connect market barriers to intervention strategies, and that provide near-, mid-, and long-term targets that build towards a 10-year vision. The metrics are based on the framework presented to the Energy Division in August 2016, which emphasized:

- » Usefulness for program administrators to manage portfolio
- » Information on the progress towards achieving desired market effect(s) and strategy effectiveness
- » Reliance on data collected during program implementation and/or data reporting to CPUC
- » Simple to understand and clear of any subjectivity
- » Emphasis on long-term outcomes

10.4 Evaluation, Measurement & Verification

MCE will track metrics for measurement and verification (M&V) but will need to conduct Evaluation, Measurement, and Verification (EM&V), in conjunction with the CPUC and its consultants, to gain richer insights through process and impact evaluations.

Anticipated Study Needs

To supplement the existing body of knowledge, and to better understand program success and market

53 Some PACE providers utilize SB 555 (2012) as the enabling legislation; this follows the Mello-Roos style assessment which can be used for new construction rather than the Streets and Highways Code assessment enabled under AB 811 (2008).

Table 13. Industrial Sector Market Barriers & Metrics

Problem Statement	Market Barriers	Desired Market Effects/ 10-year Vision	Intervention Strategies
Energy efficiency upgrades need to compete against other possible investments for funding and often have to pass initial screening to be considered, such as a very short payback period (under three years)	Financial barrier; prioritization barrier	Modify industrial practices to have organizations naturally consider and adopt EE solutions	1. Intelligent outreach 2. Strategic and continuous energy improvement / SEM 3. Rebates and incentives 4. Direct install 5. Financing
Lost production time resulting from equipment being off-line for efficiency upgrades is costly to a manufacturer	Equipment downtime	Create simple, no hassle, low cost program transaction that encourages greater customer investment in EE	1. Intelligent outreach 2. Peer outreach and training cohorts
Manufacturers with unique processes may be unwilling to invite outside energy auditors to assess their facilities in the interest of protecting proprietary information	Proprietary information	Win customers' trust as a partner and advisor	1. Intelligent outreach 2. Strategic and continuous energy improvement / SEM
Smaller manufacturers may not have dedicated energy professionals on staff	Lack of time and awareness	Majority of industrial facilities have an energy manager	1. Incentives and trainings for dedicated and shared energy managers

Sector Metric	Baseline	Metric Source	Short Term Target (1–3 years)	Mid Term Target (4–7 years)	Long Term Target (8–10 years)
1. Number of industrial customer participating in EE programs	2015 SEM participation levels in Oregon Energy Trust (OET) – % of industrial customer participation	OET Program Report	50% of OET 2015 participation level	75% of OET 2015 participation level	OET 2015 participation level
2. Amount of EE savings achieved from process-related projects	Program Year 1 (PY1)	MCE Program database	Increase in program savings by 10% over 2017 levels by Year 3	Increase in program savings by 15% over PY1 levels by Year 7	Increase in program savings by 20% over PY1 levels by Year 10
3. Number of industrial customer participating in EE programs	2015 SEM participation levels in Oregon Energy Trust	OET Program Report	50% of OET 2015 participation level	75% of OET 2015 participation level	OET 2015 participation level
4. Percentage of industrial customers with a dedicated or shared energy manager	PY1	MCE Program database	Increase by 10% over baseline	Increase by 15% over baseline	Increase by 20% over baseline

needs over time, MCE proposes the following studies be conducted:

» **Potential Study:** The existing Navigant potential study provides little insight for MCE customers. It is not granular enough to provide insights into the potential in MCE’s service area. Further, the limited industrial segmentation in the study is unlikely to provide useful insights due to the uniqueness of industrial facilities — even when producing a similar product. The forthcoming potential study, spearheaded by the Energy Division, should include more detail on the industrial sector, including more measure-level categories (currently only machine drivers and process refrigeration are included).

- » **Market Assessments:** Aimed at understanding key drivers and decision making processes for industrial customers, market assessments are to be conducted by the Energy Division or MCE.
- » **Impact Evaluation:** Impact evaluations, which focus on key program metrics, are to be conducted by the Energy Division.
- » **Process Evaluation:** Aimed at providing insights into customer drivers for participating, and areas for program design and process improvements, process evaluations are to be conducted by the Energy Division or MCE. For the strategic and continuous energy improvement strategy, MCE proposes an independent survey of participants to gather qualitative information on program design,

marketing and outreach, program implementation, participation experience, and market barriers.

In addition, MCE will conduct a cross-sector process evaluation of the SPOC offering to determine to what degree it helps alleviate customer confusion and encourages repeat participation through project phasing.

10.5 Coordination

MCE is an independent Program Administrator operating within PG&E’s service territory and overlapping the Bay Area Regional Energy Network’s service territory. Coordination among different programs will be important to minimize customer

and contractor confusion while also achieving program objectives.

Key Partners

MCE will partner closely with other organizations promoting resource conservation, including water districts, climate coalitions, renewable and distributed generation companies and installers, and electric vehicle companies. MCE will communicate regularly with these entities to ensure that they have the latest program information. MCE will facilitate program participants’ applications for rebates with these partner agencies and to the extent possible integrate those applications with the MCE application to streamline participation in multiple programs.

MCE will adjust its partnership strategy throughout the program cycle. MCE constantly seeks new partnership opportunities to help achieve its end goal of deeper energy and greenhouse gas savings.

Some of the key partners include:

- » **Implementation Partners.** Implementation partners will provide technical assistance, project management, training, quality assistance, and quality control.
- » **Other Program Administrators and Publicly-Owned Utilities.** Other program administrators and publicly-owned utilities are a great source of lessons learned and best practices. In addition, MCE will coordinate offerings with program administrators that share MCE’s service area.
- » **Contractors.** Contractor will install measures and be the primary driver of new participants for the single measure rebates.
- » **Local Trade Associations.** Local trade associations will help with marketing and outreach, recruit participants, and provide feedback on program design.

- » **Equipment Distributors.** Equipment distributors will help with marketing and outreach.
- » **Lending Institutions.** Lending institutions will provide the secured financing for MCE’s on-bill repayment offering.
- » **Local Government Sustainability Offices.** Local government sustainability offices or energy programs will identify key participants to facilitate their engagement with the program.
- » **Universities, Government and Other Research Institutions.** Universities, government and other research institutions such as the United States Department of Energy and Lawrence Berkeley National Laboratory test emerging technologies and program strategies, and can provide lead generation ideas.
- » **PACE Program Providers.** PACE program providers will be a potential source of financing for participants to cover upfront costs.

The table below maps strategies to key partners. It is not intended to be fully comprehensive, but rather, a visual representation. ■

Table 14. Industrial Key Partners

	Technical Assistance & Comprehensive Rebates	Single Measure Rebate	Pay-for-Performance	Peer Outreach	Financing	Marketing & Outreach
Implementation Partners	X	X	X	X	X	X
Contractors	X	X	X	X	X	X
Local Trade Associations				X		X
Lending Institutions					X	X
Local Governments				X	X	X

11. AGRICULTURAL SECTOR

11.1 Introduction

MCE's agricultural program focuses on dairies and vineyards, the region's largest agricultural users. This sector is characterized by a small number of overall accounts in MCE's member communities, a relatively low load, and a lack of time and resources to prioritize energy efficiency.

The program aims to overcome these barriers by integrating multiple resource conservation opportunities, such as water conservation and sustainable farming practices, with on-site generation and energy efficiency offerings to create integrated solutions that are attractive to local agricultural operations. Furthermore, the program will coordinate closely with applicable commercial and multifamily energy efficiency programs, to support aspects of the agricultural business that fall under those sectors, such as farm worker housing or agricultural product processing locations.

Core Activities

- » Provide participants with an Agricultural Single Point of Contact (SPOC) to serve as a facilitator and customer advocate, and to guide business owners through the process from initial contact to project completion.

- » Develop an integrated assessment process that streamlines multiple program offerings into one customer report.
- » Facilitate access to financing and rebates to help overcome up-front cost barriers.
- » Provide technical assistance to develop customized energy upgrade projects that meet the needs of the customer.

Key Innovations

- » Leverage existing certification programs to increase demand for green agricultural practices.
- » Design program and financing options around seasonal work cycles, which impact cash flow and equipment use.
- » Coordinate with MCE's multifamily program to provide farmworker housing energy efficiency assistance.

Summary Tables

The proposed budget for the first four years of the agricultural program is as follows:

Table 15. Agricultural Program Budget Summary

Budget Category	Year 1	Year 2
Administrative	\$74,062	\$106,062
Marketing	\$74,773	\$82,773
Direct Implementation	\$398,501	\$598,501
Incentives	\$215,709	\$407,865
Evaluation, Measurement, and Verification (EM&V)	\$31,506	\$50,088
TOTAL	\$794,553	\$1,245,290

The expected total resource cost and estimated savings are detailed below:

Table 16. Cost Effectiveness Summary

Sector Summary	Year 1	Year 2
Total Resource Cost (TRC)	1.27	
Budget	\$794,553	\$1,245,290
Estimated Net Savings	637,174 kWh 2,808 therms	1,369,357 kWh 4,097 therms

Figure 25. Integrated Program Structure — Agricultural

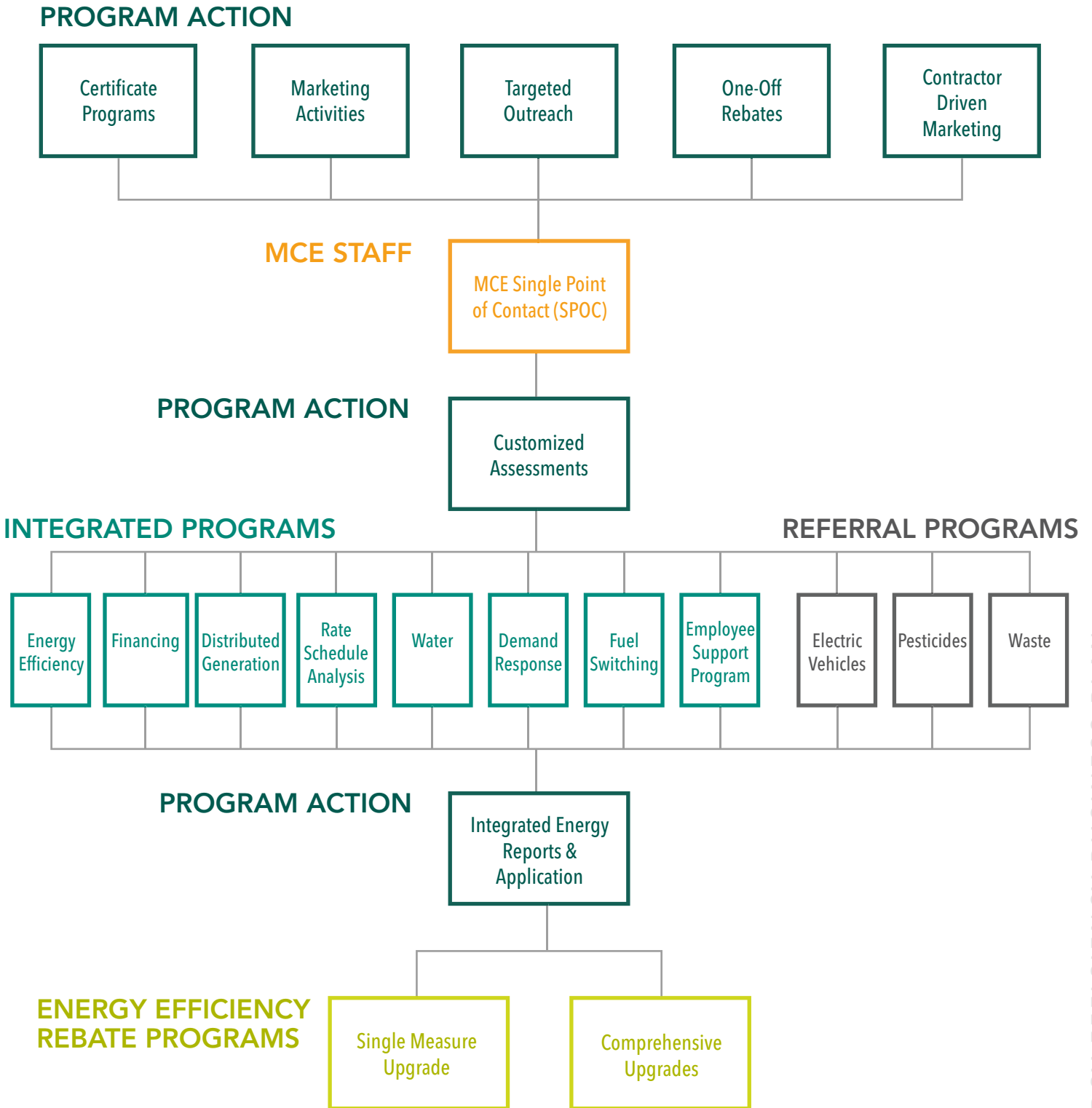
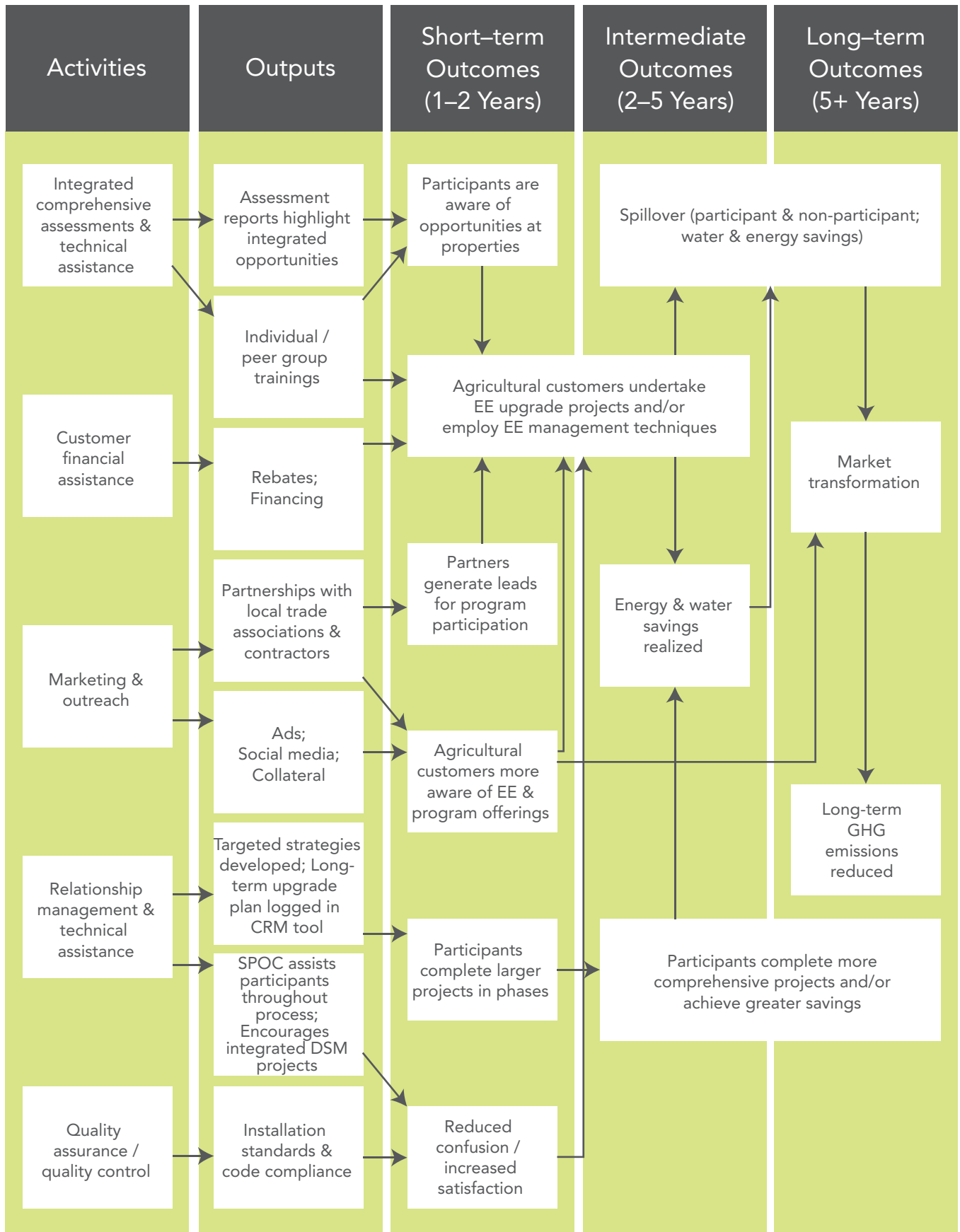


Figure 26. Agricultural Program Logic Model



11.2 Gap Analysis and Market Characterization

MCE researched the sector in detail, including adoption and penetration of key programs and measures, market size, and intervention strategies and tools. MCE also analyzed the landscape of existing programs and had extensive discussions with customers, contractors, implementers, and program administrators running similar programs in MCE's service area and in other areas. While there are many existing programs in MCE's service area, gaps remain in program offerings.

Agricultural energy efficiency projects often have long payback periods.⁵⁴ In order to encourage more projects, energy efficiency programs need to provide low cost capital to facilitate financing these projects. PG&E agricultural programs target large customers, leaving smaller customers without a program specifically tailored to their needs.⁵⁵

Most operations are in rural areas and therefore use propane instead of natural gas. Existing energy efficiency programs do not address propane use and require an onerous three-pronged test to incentivize fuel switching measures. However, fuel switching programs offer energy security and greenhouse gas benefits to these customers, and thus may present an opportunity for leveraged funding.

Many agricultural operations are installing on-site generation without first investigating energy efficiency opportunities. This is likely due to the highly visible nature of solar panels, which can help differentiate an operation as "green" and therefore more desirable to a certain group of customers. There is an opportunity to leverage the solar

transaction to promote a more integrated project that includes energy efficiency measures.

MCE will offer customers a SPOC to help navigate the landscape of demand side management opportunities. The SPOC serves as a facilitator and participant advocate, helping to guide the property owner through the process from initial contact to project completion. The SPOC would track and manage a comprehensive suite of opportunities to save energy and reduce greenhouse gas emissions, and ensure that agricultural customers are aware of all options at their sites.

To address the problem of energy efficiency being less visible to customers than renewable energy projects, working with local certification programs can generate additional value in energy efficiency projects by raising the visibility of energy efficiency improvements.

The seasonal nature of agricultural operations affects the cash flow of these businesses as well as the timing of when equipment is available to be upgraded. MCE can ramp up the activity of its agricultural offerings during the slow production seasons. In addition to energy efficiency opportunities, integrated on-site generation solutions capitalize on feed-in tariffs or net energy metering during the off-season and supplement customer energy needs during periods of high production.

Although agricultural electricity use makes up a relatively small percentage of MCE's load, agriculture is an important part of the character of MCE's service area, especially in Marin County and Unincorporated Napa County. In Marin, approximately 50% of the land is composed of farms and dairies.⁵⁶ There are

54 MCE gathered this information through stakeholder outreach in 2016.

55 MCE gathered this information through stakeholder outreach in 2016.

56 Amazing but True Facts About Marin Agriculture. David Lewis, Paige Phinney and Elli Rilla, ed. University of California Cooperative Extension, Marin County. http://ucanr.edu/sites/Grown_in_Marin/files/213433.pdf

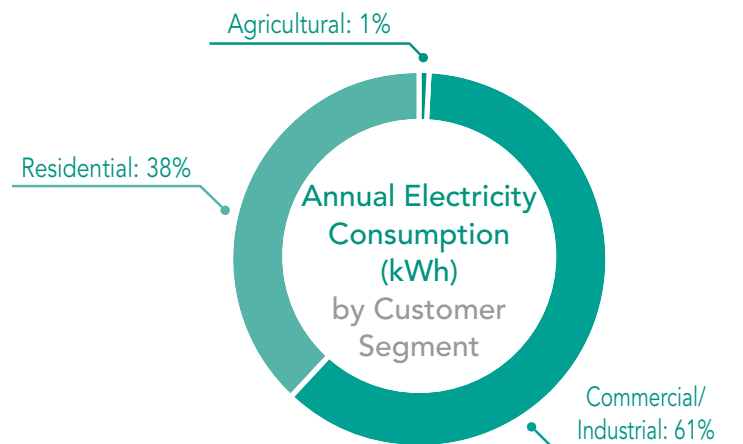
255 agricultural operations in Marin, 64 of which are considered large farms. There are 23 dairies and 159 livestock production operations producing beef cattle, dairy cows, and sheep.⁵⁷ Many of these dairies ship their milk to processors outside of MCE's service area but a few process their milk on site.⁵⁸ The dairy industry is a highly regulated market. The demand for dairy is rising but state regulations cap prices, which can create financial uncertainty for farmers in the face of fluctuating feed prices.⁵⁹

In Napa County, the dominant agricultural activity is grape production for wine, which accounts for approximately 99% of the agricultural revenues in the county.⁶⁰ Vineyards may be winery-owned or independently owned by those who sell their grapes to wineries. Most wineries list electricity among their top costs, along with labor.⁶¹ Both dairies and vineyards are industries that are divided into either large companies with global markets or small companies with local markets.⁶²

Energy Consumption

The agricultural sector accounts for approximately 1% of the electric load in MCE's service area (Figure 27). The sector's natural gas usage is also very small since most operations are in rural areas without access to utility natural gas service. While the primary uses

Figure 27. Electricity Use by Sector



of electricity vary depending on farm type, large end-uses typically include irrigation/water pumping, milking equipment, and refrigeration.⁶³

Problem Statements

There are several barriers that may prevent the agricultural sector from fully taking advantage of energy efficiency opportunities. These barriers include:

- » **Financial Constraints.** Dairies operate under constrained cash flow due to regulations that set milk prices. Many dairies in Marin are able to increase the price of their milk by producing organic milk, while a few others process milk into value added products on site, such as cheese, allowing them to set their own prices.⁶⁴ Other agricultural operations may face capital constraints due to fluctuating production, environmental factors such as drought, and market prices of products.

57 Ibid.

58 Ibid.

59 Market Characterization Report for the 2010–2012 Statewide Agricultural Energy Efficiency Potential and Market Characterization Study. Navigant Consulting. May 2013. Available at: http://www.calmac.org/publications/CA_Ag_Mrkt_Characterization_Final_5-13-13.pdf

60 2014 Agricultural Crop Report. Napa County Department of Agriculture and Weights & Measures. May 2015. <http://www.county-ofnapa.org/agcom/>

61 Market Characterization Report for the 2010–2012 Statewide Agricultural Energy Efficiency Potential and Market Characterization Study. Navigant Consulting. May 2013. Available at: http://www.calmac.org/publications/CA_Ag_Mrkt_Characterization_Final_5-13-13.pdf

62 Ibid.

63 Ibid.

64 Information gathered from conversations with dairy farm owners in Marin County.

- » **Seasonal Cycles.** Many agricultural operations often follow a seasonal calendar that determines high and low periods of activity and equipment use. The seasonal cycles also affect cash flow and financial planning. Energy efficiency projects need to incorporate these considerations in the planning process to ensure projects meet customer needs.⁶⁵ Technical assistance, long-term engagement with the customer, and financing may help bridge this barrier by facilitating a project timeline that minimizes disruption to the agricultural operations.
- » **Equipment Down Time.** Dairies generally operate on an intensive schedule with little to no down time for farm equipment. It can be burdensome and expensive for equipment to be off-line for even a short amount of time for upgrade and/or repairs.⁶⁶
- » **Lack of Awareness.** Compared to other regions of the state, agricultural operations in MCE's service area are smaller with fewer employees and fewer acres in production. These operations may not have staff with energy expertise and may not know where to seek out assistance, rebates, and financing for energy efficiency upgrades.⁶⁷

MCE's agricultural program is designed to address these barriers by reaching customers at trigger points and offering tailored solutions.

Trigger Points

Trigger points are moments of opportunity when the likelihood of engaging customers in an energy efficiency program is highest. Trigger points for agricultural customers include:

- » **Seasonal Triggers.** If an agricultural operation experiences seasonal periods of relatively lower activity, the best time to engage a customer for equipment upgrades is prior to the low point of activity such that upgrades can be performed during that time period. Conversely, the best time to target a customer for behavioral or operational efficiency offerings might be during periods of high use when there is the most opportunity to save.
- » **Equipment Failure.** Given capital constraints, agricultural operations are unlikely to invest in new energy efficient equipment.⁶⁸ However, once equipment fails, the ability to replace it quickly becomes paramount. Establishing a relationship with customers prior to equipment failure will be crucial to MCE's ability to influence the efficiency of the replacement equipment, and encourage customers to pursue more comprehensive efficiency projects. Alternatively, partnering with the contractors who most often provide equipment replacement will also ensure customers are presented with efficient alternatives at the right time.
- » **Coordination with Renewable Energy Installations.** The dairy and wine industries in particular have latched on to renewable energy as a way to distinguish their brand.⁶⁹ There is

65 Market Characterization Report for the 2010–2012 Statewide Agricultural Energy Efficiency Potential and Market Characterization Study. Navigant Consulting. May 2013. Available at: http://www.calmac.org/publications/CA_Ag_Mrkt_Characterization_Final_5-13-13.pdf

66 Information gathered from conversations with dairy farm owners in Marin County.

67 Market Characterization Report for the 2010–2012 Statewide Agricultural Energy Efficiency Potential and Market Characterization Study. Navigant Consulting. May 2013. Available at: http://www.calmac.org/publications/CA_Ag_Mrkt_Characterization_Final_5-13-13.pdf

68 Market Characterization Report for the 2010–2012 Statewide Agricultural Energy Efficiency Potential and Market Characterization Study. Navigant Consulting. May 2013. Available at: http://www.calmac.org/publications/CA_Ag_Mrkt_Characterization_Final_5-13-13.pdf

69 Market Characterization Report for the 2010–2012 Statewide Agricultural Energy Efficiency Potential and Market Characterization Study. Navigant Consulting. May 2013. Available at: http://www.calmac.org/publications/CA_Ag_Mrkt_Characterization_Final_5-13-13.pdf

an opportunity to further reduce greenhouse gas emission by coupling renewable energy installations with energy efficiency upgrades.

- » **Change in Law or Regulation.** MCE will use anticipated changes in codes, standards, and regulations as a trigger point to motivate agricultural customers to act on resource conservation. For example, if water restrictions are anticipated, MCE will reach out to the customer to provide assistance with conserving water and use the opportunity to also pitch energy efficiency.

MCE's objective is to utilize these trigger points to effectively engage customers in energy efficiency measures. To achieve this, MCE must identify and leverage the entities that influence this sector

Key Market Actors

There are many entities that influence the agricultural sector. It is important that MCE understand the role that each entity plays and how this can affect efforts to promote energy efficiency.

- » **Contractors.** Contractors are the primary point of contact with customers. They help select and install equipment for various customer projects.
- » **Equipment Distributors and Manufacturers.** Equipment distributors and manufacturers have control over which products are available on the market and have established relationships with agricultural customers.
- » **Industry Groups and Trade Associations.** Industry groups and trade associations, such as agricultural land trusts, councils of dairy producers, or organic trade organizations have broad networks of members who can be potential program participants. They also have knowledge of issues affecting the local agricultural industries and can be valuable advisors.

- » **Regulatory Bodies.** Regulatory bodies, such as Occupational Safety and Health Administration, United States Department of Agriculture, United States Food and Drug Administration, California Department of Food and Agriculture, California Energy Commission, and the California Public Utilities Commission, set the rules that govern the market and may affect product availability, product prices, and program design.
- » **Organic Certification Groups.** Organic certification groups can help with marketing and can motivate energy efficiency improvements.
- » **Academic Institutions.** Academic institutions, such as University of California Cooperative Extension, can provide research and case studies on resource conservation in agricultural operations and may also be a partner for marketing, outreach, and training.

MCE tracks key market actors in order to identify opportunities and challenges, and the impact of these entities on a customer's energy efficiency decision-making.

Adoption and Penetration

Before determining agricultural program strategies, MCE evaluated current adoption and penetration of energy efficiency programs to identify opportunities and determine market gaps.

According to the California Agriculture Market Characterization Study, vineyards and wineries have seized upon renewable energy — and to a lesser extent energy efficiency — as a means to distinguish their brand.⁷⁰ They are seen as energy efficiency leaders in the agricultural sector. MCE will develop

70 Market Characterization Report for the 2010–2012 Statewide Agricultural Energy Efficiency Potential and Market Characterization Study. Navigant Consulting. May 2013. Available at: http://www.calmac.org/publications/CA_Ag_Mrkt_Characterization_Final_5-13-13.pdf

opportunities to further recognize energy efficiency leaders in its service area.

The energy efficiency upgrades that agricultural operations have already undertaken vary by farm type. Dairies are more likely to have upgraded their lighting equipment than their pumping or cooling equipment.⁷¹ Although pumping accounts for a much greater share of their electricity consumption, lighting equipment has a lower first cost, which makes it more feasible for the capital-constrained dairy farmer. Dairy farmers have indicated that they learn about the energy efficiency measures they install through equipment vendors, suggesting that these vendors will be an important partner in marketing MCE's program offerings.⁷²

Since 2006, over 150 wineries have installed energy efficiency measures through PG&E's wine industry program. Water is a primary concern for grape-growers and many are updating and mechanizing their irrigation systems.⁷³ This represents a major opportunity for MCE to influence equipment purchasing decisions. However, many agricultural customers also operate on well water, so communicating long-term sustainability of ground water supply for environmental and financial reasons will be an important message.

11.3 Intervention Strategies

Technical Assistance and Comprehensive or Phased Projects

MCE will offer technical assistance to customers to help them understand the full scope of available resource conservation options. Program offerings will focus on pumps, lighting, refrigeration, water heating,

distributed generation, and water conservation measures.

The technical advisor will create a comprehensive report outlining the rebates available to the customer at the time, including those offered through statewide programs, as well as take note of when existing equipment may be nearing the end of its expected useful life. This information will be entered into a Customer Relationship Management (CRM) system to allow the SPOC to follow up at the appropriate points in the future when the customer may be making purchasing decisions. The SPOC will serve as a project facilitator and customer advocate to help guide business owners through the process from initial contact to project completion as well as helping to identify future participation opportunities.

After the assessment report is complete the SPOC and technical advisor will work with the customer to develop a work plan for projects they intend to complete in the short, mid, and long term. The SPOC will track projects over time, allowing for energy efficiency upgrades to be scheduled around the seasonal calendar. Project phasing will be available to lessen barriers related to seasonal cash flow and periods of high equipment use.

Upon project completion the SPOC will work with the customer to help them participate in local certification or recognition programs and help them market their investment in energy efficiency.

Peer Outreach and Training Cohorts

MCE will convene cohorts of small farm owners to discuss experiences with energy efficiency upgrades and equipment maintenance best practices. MCE will develop targeted outreach efforts, trainings, and technical assistance for this group. When possible, MCE will aim to coordinate with industry groups to bring peer groups together at existing events. The focus of these groups will be on sharing

71 Ibid.

72 Ibid.

73 Ibid.

best practices around operations, maintenance, and behavioral energy efficiency. Additionally, MCE will work with each group to develop energy management metrics. Bringing similar operations together will foster a network for sharing best practices and benchmarking. The cohorts could also provide a valuable feedback channel for MCE on its agricultural program offerings.

Energy Efficiency Assistance for Farm Worker Housing

There are approximately 500 farm workers in Marin, many of whom are living in homes that do not meet minimum housing standards.⁷⁴ In Napa, the

⁷⁴ Trevor Bach, "Farm Worker Housing: 200 Units Planned," Point Reyes Light, February 23, 2012. <http://www.ptreyeslight.com/article/farm-worker-housing-200-units-planned>

number is even greater. At the peak of the grape harvesting season there may be as many as 7,000 farmworkers in Napa.⁷⁵ Not all of these workers live in Napa permanently, but due to concerns about US immigration policy and a growing demand for year-round work, the trend is for an increasing number to remain in Napa year-round.⁷⁶

Year-round residents have greater housing requirements than seasonal workers — they tend to need family housing instead of just a bed.⁷⁷ A 2013

⁷⁵ Bae Urban Economics, "Final Report: 2012 Napa County Farmworker Housing Needs Assessment," Napa County Housing and Intergovernmental Affairs, March 29, 2013.

⁷⁶ Ibid.

⁷⁷ Bae Urban Economics, "Final Report: 2012 Napa County Farmworker Housing Needs Assessment," Napa County Housing and Intergovernmental Affairs, March 29, 2013.

survey of Napa farm workers found that 34% live in apartments, 31% live in farm worker centers, 14% live in mobile homes, 12% live in single family homes and 9% live in bunk houses or dormitories. MCE will use relationships in the agriculture industry developed through this program to target farm worker housing for participation in MCE's multifamily program.

Financing

MCE will help customers navigate the landscape of financing offerings available and encourage them to participate to the extent that it facilitates energy efficiency upgrades. Financing will help reduce up-front costs and address challenges with seasonal cash flow. Financing is available either through the commercial On-Bill Repayment program offered by MCE, the Property Assessed Clean Energy (PACE) financing programs available in the MCE service

area, the California Energy Commission (CEC) low interest loan program, or agricultural specific lending programs such as those offered by the United States Department of Agriculture (USDA).

The SPOC will facilitate access to financing programs that are most suitable for the applicant. The SPOC will provide assistance in completing applications, supply information about the energy impacts of the proposed project where appropriate, and provide project management and oversight of the application to keep the process moving forward.

Metrics Tables (Table 17)

Alongside the other program administrators, MCE developed metrics that connect market barriers to intervention strategies and provide near-, mid-, and long-term targets that build towards a 10-year vision.

Table 17. Agriculture Sector Market Barriers & Metrics

Problem Statement	Market Barriers	Desired Market Effects/ 10-year Vision	Intervention Strategies
Dairies operate under constrained cash flow due to regulations that set milk prices. Other agricultural operations may face capital constraints due to fluctuating production, environmental factors such as drought, and market prices of products	Financial barrier	Increase in the number of customers who are aware of and make use of financing options and rebate programs to help them achieve energy savings	1. Incentives 2. Education about available financing options
Agricultural operations often follow a seasonal calendar that determines high and low periods of activity and equipment use. The seasonal cycles also affect cash flow and financial planning. Energy efficiency projects need to be arranged for at the appropriate point in the planning process, and conducted at key points during the year	Financial barrier, seasonal time constraints	Increase in the number of customers that have long term energy efficiency plans to upgrade specific equipment during times of low use	1. Technical assistance 2. Increased phasing of projects through SPOC approach
Compared to other regions of the state, agricultural operations in MCE service area are smaller with fewer employees and fewer acres in production. These operations may not have staff with energy expertise and may not know where to seek out assistance, rebates, and financing for energy efficiency upgrades	Lack of awareness of programs and energy efficiency equipment	Increased awareness of MCE's program offerings	1. Increase awareness of MCE's program and energy efficiency opportunities through peer to peer outreach, training cohorts and leveraging existing green certification programs

Market Effect Metrics	Baseline	Metric Source	Short Term Target (1-3 years)	Mid Term Target (4-7 years)	Long Term Target (8-10 years)
1. Number of completed projects through program	1. Program Year 1 (PY1) Participation	1. Program tracking data	1. Increase 5% over PY1 baseline	1. Increase 10% over PY1 baseline	1. Increase 15% over PY1 baseline
1. Number of customers who receive technical assistance 2. Number of customers with long term action plan under SPOC approach 3. Number of repeat referrals through SPOC	1. PY1 Participation 2. PY1 Participation 3. PY1 Participation	1. Program tracking data 2. Program tracking data 3. Program tracking data	1. 2% of ag customers 2. 50% of program participants 3. N/A	1. 5% of ag customers 2. 75% of program participants 3. 5% of participants	1. 10% of ag customers 2. 90% of program participants 3. 10% of participants
1. Number of completed projects through program 2. Number of customers attending training sessions	1. PY1 Participation 2. PY1 Participation	1. Program tracking data 2. Program tracking data	1. Increase 10% over PY1 baseline 2. 5 customers	1. Increase 15% over PY1 baseline 2. 20 customers	1. Increase 20% over PY1 baseline 2. 30 customers

The metrics are based on the framework presented to the Energy Division in August 2016, which emphasized:

- » Usefulness for program administrators to manage portfolio
- » Information on the progress towards achieving desired market effect(s) and strategy effectiveness
- » Reliance on data collected during program implementation and/or data reporting to the CPUC
- » Simple to understand and clear of any subjectivity
- » Emphasis on long-term outcomes

11.4 Evaluation, Measurement & Verification

MCE takes an adaptive management approach to continuously evaluate program performance. MCE will use Advanced Metering Infrastructure (AMI) data, customer feedback, participation surveys, among other sources to measure the effectiveness of intervention strategies. This feedback loop enables MCE to make improvements throughout the program cycle. For the agricultural sector, the following performance metrics will be tracked:

- » Number of completed projects through the program
- » Number of customers who receive technical assistance
- » Number of customers with long term action plans under the SPOC approach
- » Number of repeat referrals through SPOC

- » Number of customers attending peer-to-peer training sessions

Anticipated Study Needs

To supplement any EM&V activities conducted by the California Public Utilities Commission (CPUC), MCE will undertake a process evaluation at the end of year two of the peer training and outreach cohort offering. This evaluation will focus on the effectiveness of this strategy in influencing change in the operations and maintenance at agricultural operations and the effectiveness in encouraging members to undertake comprehensive upgrade projects. In addition, MCE will conduct a cross-sector process evaluation of the SPOC offering to determine to what degree it helps alleviate customer confusion and encourages repeat participation.

11.5 Coordination

Key Partners

MCE will partner closely with other organizations promoting water conservation, waste diversion, dairy digesters, solar power, and electric vehicles. MCE will communicate regularly with these entities to ensure that they have the latest program information. MCE will facilitate program participants' applications for rebates with these partner agencies and to the extent possible integrate those applications with the MCE application to streamline participation in multiple programs.

MCE will also seek to collaborate with neighboring regions that may be connected to farms in MCE service area through the supply chain. An example of this is milk processors in Sonoma that receive shipments from Marin dairies.

The SPOC will coordinate with social service organizations, income assistance programs, and the

MCE multifamily program to ensure that farmworkers living in eligible housing units are given support in upgrading their homes and bringing down their electricity costs. Some of the key partners include:

- » **Implementation Partners** will provide technical assistance, project management, training, quality assistance, and quality control.
- » **Contractors** will install measures and help recruit participants.
- » **Local Agricultural Associations** will help with marketing and outreach, recruit participants, and provide feedback on program design.
- » **Equipment Distributors** will help with marketing and outreach.

- » **Local Certification Bodies** (e.g. Napa Green and the Marin Green Business Program) will help raise visibility of energy efficiency improvements.
- » **Federal Agencies** provide complimentary programs and are a source for financing and grants, which can help cover upfront costs.
- » **MCE’s Low Income Families and Tenants (LIFT) Program** will offer upgrade assistance for qualified farm worker housing.
- » **MCE’s Existing On-Bill Repayment Programs and PACE Program Providers** will be sources of financing for participants to cover upfront costs.

Table 18 maps strategies to key partners. It is not intended to be fully comprehensive, but rather, a visual representation. ■

Table 18. Agricultural Key Partners

	Technical Assistance & Comprehensive Rebates	Peer Outreach	EE Assistance for Farmworker Housing	Financing	Marketing & Outreach
Implementation Partners	X	X	X	X	X
Contractors	X	X		X	X
Local Agricultural Associations					X
Equipment Distributors				X	X
Local Certification Bodies		X			X
USDA				X	

12. COMMERCIAL SECTOR

12.1 Introduction

MCE's commercial program is designed to serve all types of commercial customers. The program acknowledges inherent differences in opportunities between the myriad types and sizes of commercial properties, and emphasizes integrating diverse program offerings under one umbrella. The program focuses on customer satisfaction and repeat engagement to drive towards greater greenhouse gas reduction, and ultimately a transformed market.

Core Activities

- » Provide participants with a Commercial Single Point of Contact (SPOC) to serve as a facilitator and customer advocate and to help guide business owners through the process from initial contact to project completion.
- » Develop an integrated assessment process that streamlines multiple program offerings into one customer report.
- » Deploy user-friendly CRM software that supports ongoing relationships between the business and the program.

Key Innovations

- » Deliver an integrated approach that provides a seamless customer experience.

- » Target buildings by using data analytics in order to focus opportunities and improve MCE's sales approach.
- » Offer innovative behavioral approaches that leverage web-based tools and software programs. Depending on demand, offerings could also include competitions and campaigns, social media, green teams, and interactive dashboards.
- » Leverage existing and forthcoming benchmarking regulations for customers to compare their usage to their peers and best-in-class operations, and as a tool to incentivize upgrades and enhancements. Benchmarking can tie into other offerings and be used as motivation for anything from assessments to deep retrofits to behavioral campaigns to Fault Detection and Diagnostics.
- » Offer financing options through MCE on-bill repayment to help overcome one of the primary barriers for many small commercial customers: access to capital.
- » Provide assistance obtaining Bay Area Green Business certification.

Commitment to Public Sector

Public agencies play a leadership role in their community, and are expected to be a key player supporting the rollout of cornerstone energy efficiency regulations.⁷⁸ MCE has not proposed specific intervention strategies for the public sector because the sector is primarily served through Local Government Partnerships (LGPs) in MCE's service area. MCE will continue to expand public-private partnerships (e.g. PACE financing) and collaborate with LGPs to offer innovative approaches. MCE's SPOC will assist customers in accessing LGP programs that serve public agencies. Where opportunities for leveraging MCE's other offerings exist (e.g. commercial sector offerings), MCE will bundle these offering with LGP public sector offerings.

78 Assembly Bill 758 Existing Buildings Energy Efficiency Action Plan describes the public sector's role in creating a new statewide commercial benchmarking and disclosure program, encouraging local government innovation, and shaping better energy codes for existing buildings.

Summary Tables

The proposed budget for the first four years of the commercial program is as follows:

Table 19. Commercial Program Budget Summary

Budget Category	Year 1	Year 2
Administrative	\$192,496	\$227,696
Marketing	\$314,328	\$283,948
Direct Implementation	\$767,753	\$825,212
Incentives	\$599,621	\$851,637
Evaluation, Measurement, and Verification (EM&V)	\$84,604	\$84,604
TOTAL	\$1,958,803	\$2,273,098

The expected total resource cost and estimated savings are detailed below:

Table 20. Cost Effectiveness Summary

Sector Summary	Year 1	Year 2
Total Resource Cost (TRC)	1.17	
Budget	\$1,958,803	\$2,273,098
Estimated Net Savings	1,829,211 kWh 1,924 therms	3,671,630 kWh (1,983) therms

Figure 28. Integrated Program Structure — Commercial

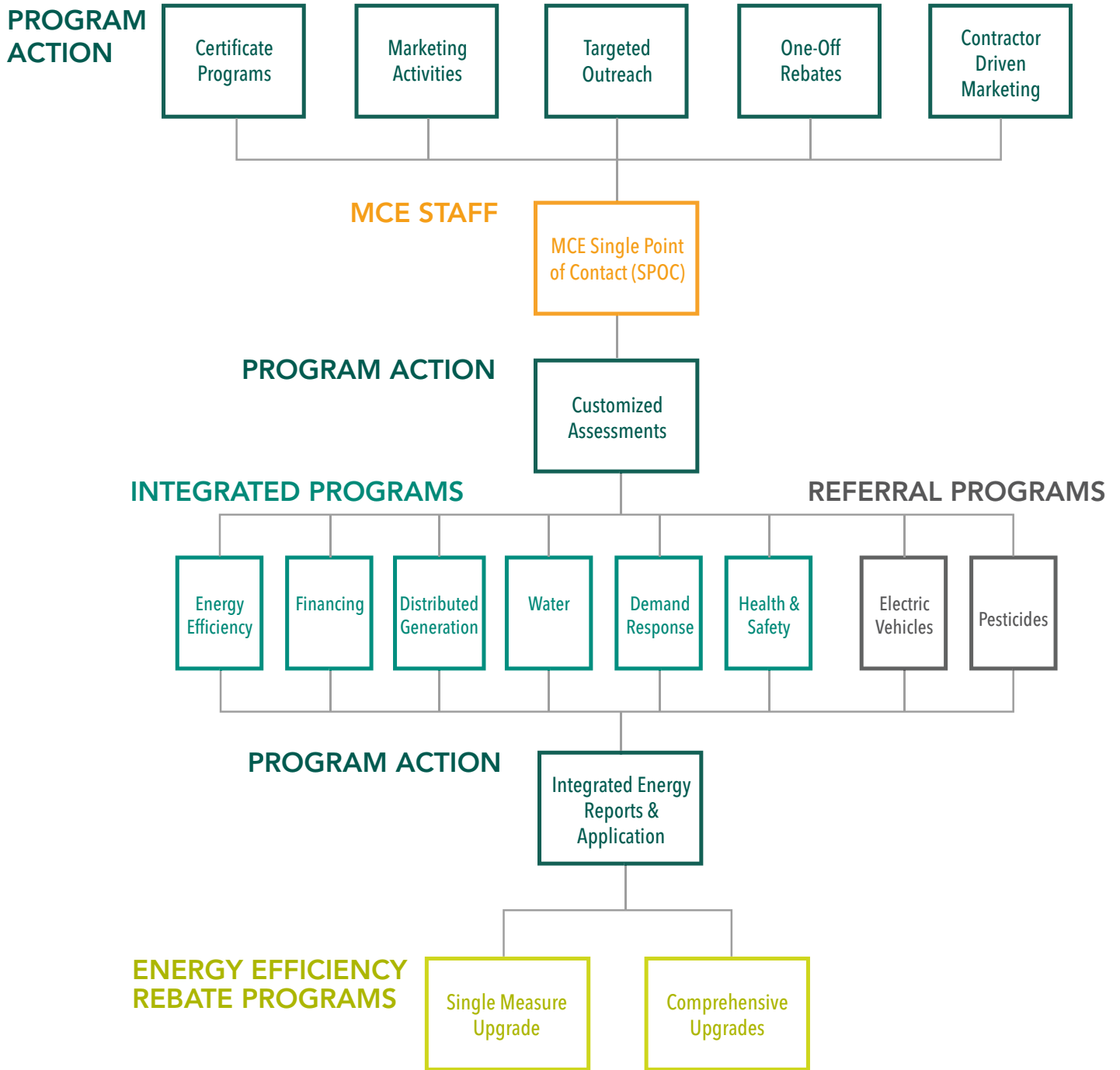
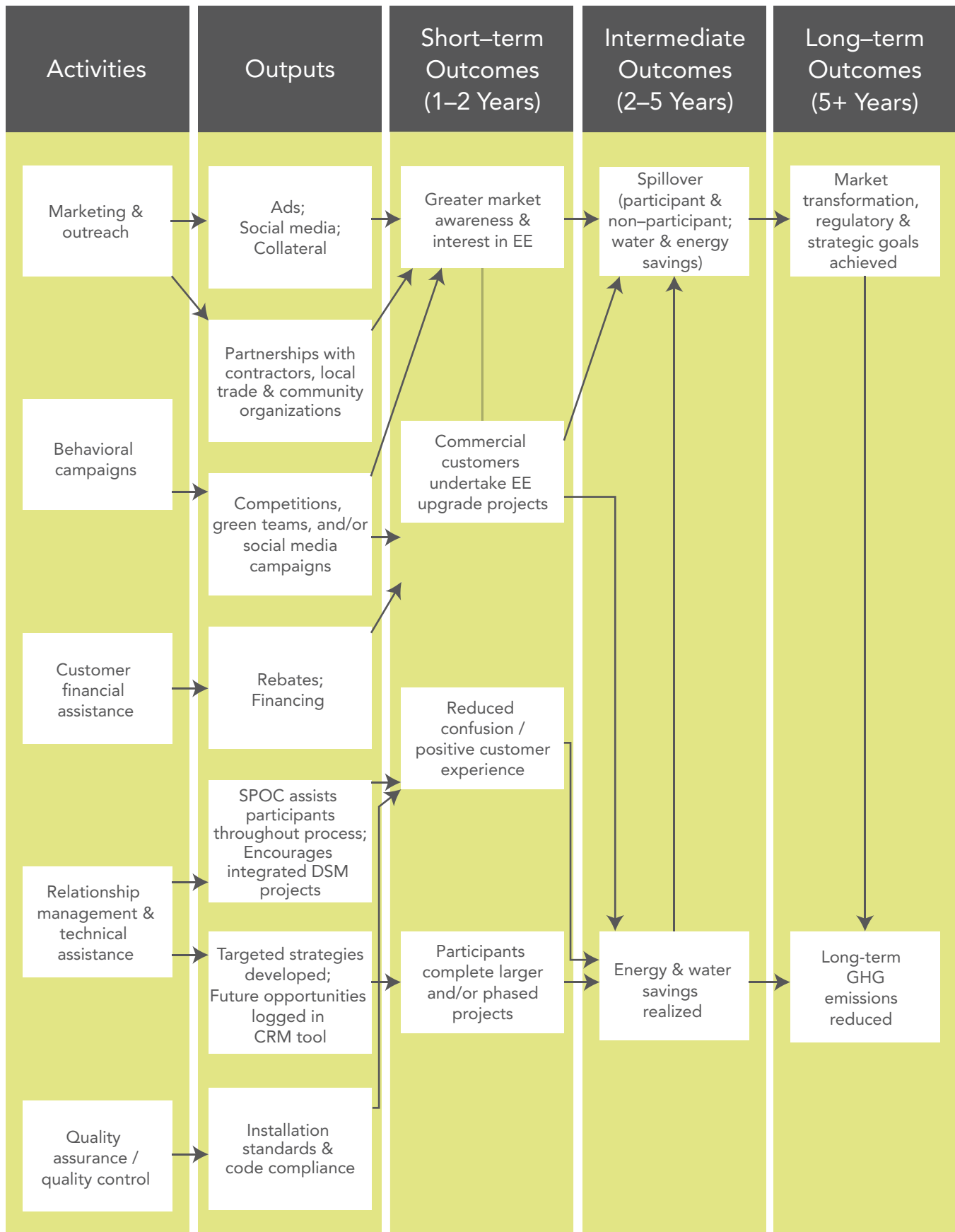


Figure 29. Commercial Program Logic Model



12.2 Gap Analysis and Market Characterization

MCE researched the sector in detail, including adoption and penetration of key programs and measures, market size, and intervention strategies and tools. MCE also analyzed the landscape of existing programs and had extensive discussions with customers, contractors, implementers, and program administrators running similar programs in MCE's service area and in other areas. While there are many existing programs in MCE's service area, gaps remain in program offerings.

Small commercial programs, including MCE's program, market themselves as "comprehensive" but have struggled to get traction for truly comprehensive measure mixes and deep retrofits. Likewise, small commercial programs in MCE's service area focus on boutique size, leaving a gap in the mid-sized facilities. These conclusions are drawn not only from extensive discussions and market research, but also represent a data-driven analysis conducted on the program, and for similar programs in the greater San Francisco Bay Area.

MCE's intervention strategies present solutions to these gaps. The SPOC model provides a framework that maximizes depth of retrofit to enable more comprehensive projects. Similarly, the default administrator status would provide MCE with the necessary autonomy to contract with implementers who can cost-effectively deliver more comprehensive savings and target specific verticals (e.g. restaurants) and market segments (e.g. mid-size businesses) that are currently underserved by the small to mid-size business direct install model.

The sections to follow present MCE's analysis of energy consumption, building data, barriers, triggers, key market actors, and energy efficiency adoption to

better understand the opportunities that exist within the commercial sector.

Energy Consumption

Commercial businesses account for about 10% of MCE's accounts, yet represent a much larger portion of its electrical consumption.⁷⁹ This demonstrates the importance of targeting the commercial sector to achieve energy and greenhouse gas emission reductions.

Since typical commercial energy consumption profiles vary considerably across California and within MCE's service area, MCE will work with partners that understand the diversity of its customer base to develop appropriately diverse strategies.

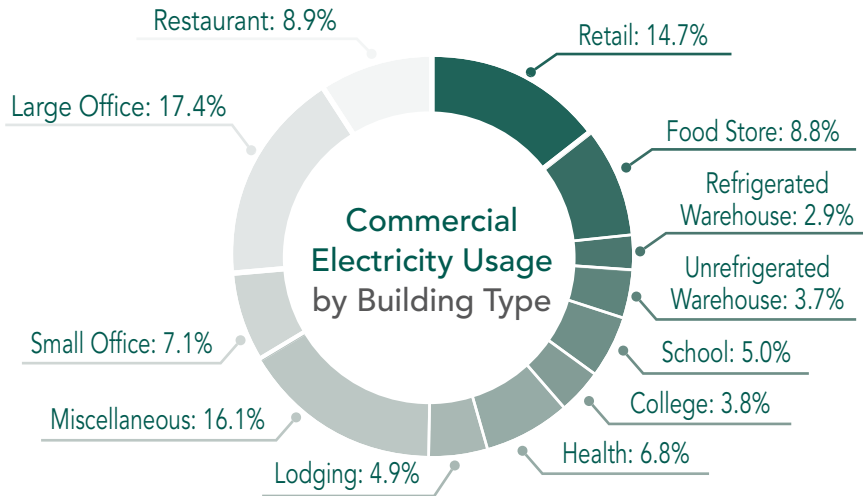
The following graphics depict statewide commercial electricity and gas usage by building type and end use. The data is from the 2006 California Commercial End-Use Survey (CEUS),⁸⁰ which is a comprehensive study of commercial energy use across thousands of commercial facilities in California.

On a statewide basis, electricity and gas use varies considerably across commercial customer segments (Figures 30 and 31). For example, on a comparative basis, the natural gas use of restaurants is a more significant cost driver than it is for large offices (Figure 31). Meanwhile, on an absolute basis, the large office segment represents the highest electricity use segment (Figure 30) while restaurants represent the highest gas use segment (Figure 31). This indicates a need for targeted, relevant customer offerings.

79 MCE internal data; data for the Commercial and Industrial sectors represents about 60% of MCE's electrical consumption; the sectors have been combined to comply with CPUC privacy regulations.

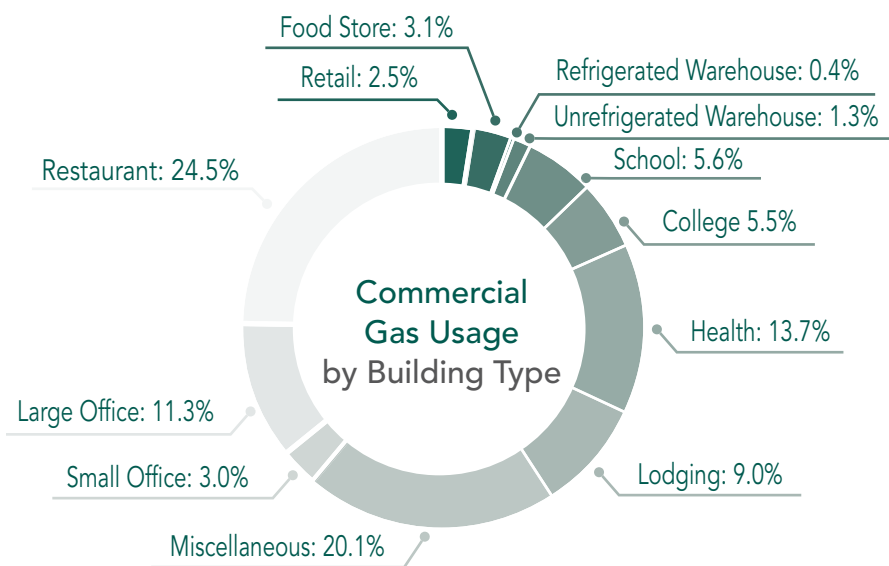
80 California Commercial End-Use Survey. California Energy Commission. (2006). Available at <http://www.energy.ca.gov/ceus/>

Figure 30. California Commercial Electricity Usage by Building Type



Source: CEUS 2006

Figure 31. California Commercial Natural Gas Usage by Building Type



Source: CEUS 2006

In the commercial sector, the primary electricity end uses are interior lighting, cooling, ventilation, and refrigeration (Figure 32). The top three gas end uses comprise over 90% of the sector’s gas usage (Figure 33). These are space heating, water heating, and cooking. Analyzing end-use consumption provides insights into the top-consuming measures, which can serve as a useful tool for targeting energy efficiency opportunities.

Building Data

MCE’s service area contains a diversity of commercial building vintages, which provide insights into trends affecting construction and growth (Figure 34). Benicia, for example, has seen considerable growth and expansion since the mid-1970s, while Marin County has seen declining growth during that same time period. Building vintage provides useful insights into energy efficiency program planning and marketing strategies, especially in the context of Title 24 and other code changes.

The size of commercial buildings varies considerably across MCE’s service area (Figure 35). To effectively serve its diverse customer base, MCE tailors its energy efficiency strategies according to customer needs. For example, strategies focused

on serving the small commercial segment may be better suited to Richmond, El Cerrito, and San Pablo (with the greatest number of commercial buildings under 5,000 square feet); meanwhile, there may be more significant opportunities for large commercial upgrades in Napa, Walnut Creek, Lafayette, and Benicia (which have a greater share of commercial facilities over 100,000 square feet).

Problem Statements

There are several barriers that may prevent the commercial sector from fully taking advantage of energy efficiency opportunities. These barriers include:

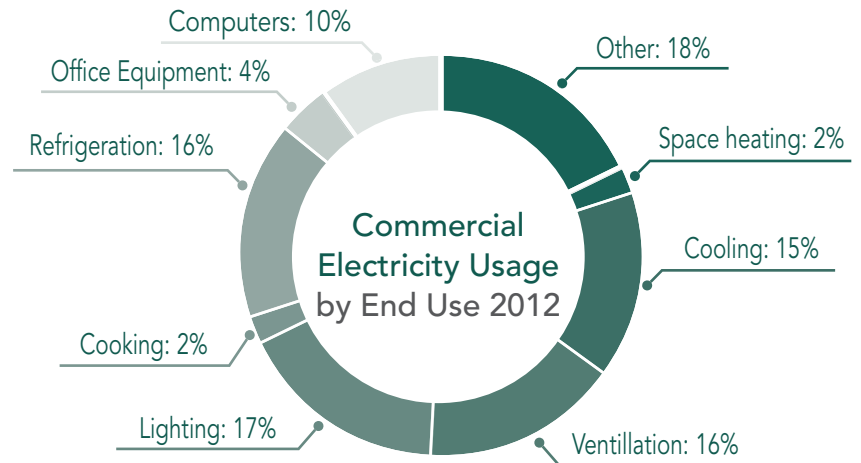
» Small to Mid-size Business

Barriers. This customer segment tends to be difficult to engage due to the high number of businesses, fragmentation of savings across many small accounts, and difficulty commanding the attention of busy owners and operators.

» Large Commercial Business

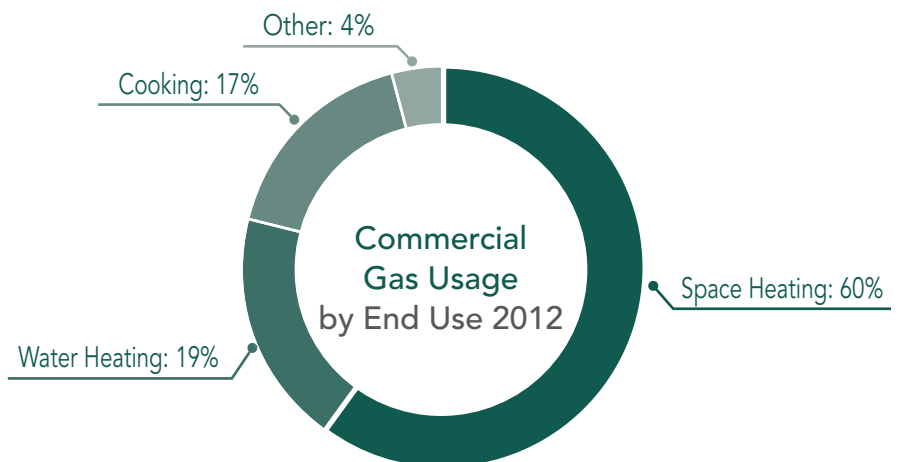
Barriers. Energy costs can represent a relatively small portion of the large commercial operating budget, which makes it a low priority for accessing organizational capital. Some businesses may be concerned about impacts of energy efficiency on products and productivity. Furthermore, it can be particularly challenging to reach decision makers in large commercial facilities due to the sheer size and number of employees.

Figure 32. California Commercial Electricity Usage by End Use



Source: Commercial Building Energy Consumption Survey (CBECS). United States Energy Information Administration. (2012). Available at <http://www.eia.gov/consumption/commercial/>.

Figure 33. California Commercial Natural Gas Usage by End Use



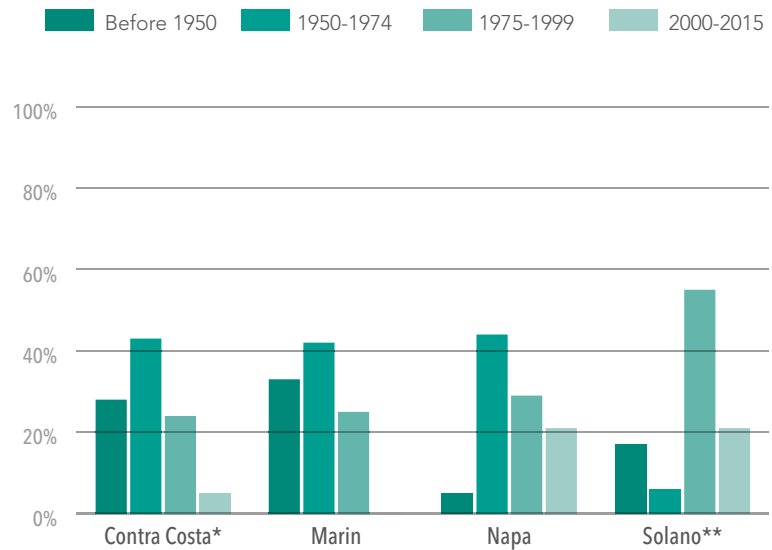
Source: Commercial Building Energy Consumption Survey (CBECS). United States Energy Information Administration. (2012). Available at <http://www.eia.gov/consumption/commercial/>.

» **Financial Constraints.** Payback requirements are 3.6 years on average — and considerably higher for many segments such as small businesses and renter-occupied spaces.⁸¹ This can be a challenge for two reasons. First, it can limit deeper retrofits that would pay back beyond that threshold. Second, commercial building tenants that move frequently are not incentivized to pay for efficiency upgrades where they may not reap the rewards during ownership. Some entities are constrained by barriers separating capital development and operating funds, and can be limited by lowest-bid regulations. Efficiency projects save on operating funds but often require capital fund expenditures. Accessing capital funds often requires approval from fiscal managers, who are tasked with balancing many competing priorities across business lines.

» **Split Incentive Issue.** It is a challenge to encourage energy efficiency upgrades in facilities where the tenant pays for electricity but does not own the equipment. This arrangement is very common in the commercial sector, and can make it challenging to get buy-in and financial backing for efficiency upgrades. Potential savings are fragmented across a high diversity in business type and large geographical area.

» **Contractor Limitations.** There are a limited number of contractors with technical knowledge of integrated and comprehensive demand-side management and a need for contractors that have the business, sales, and project management

Figure 34. Commercial Building Vintage by Service Area

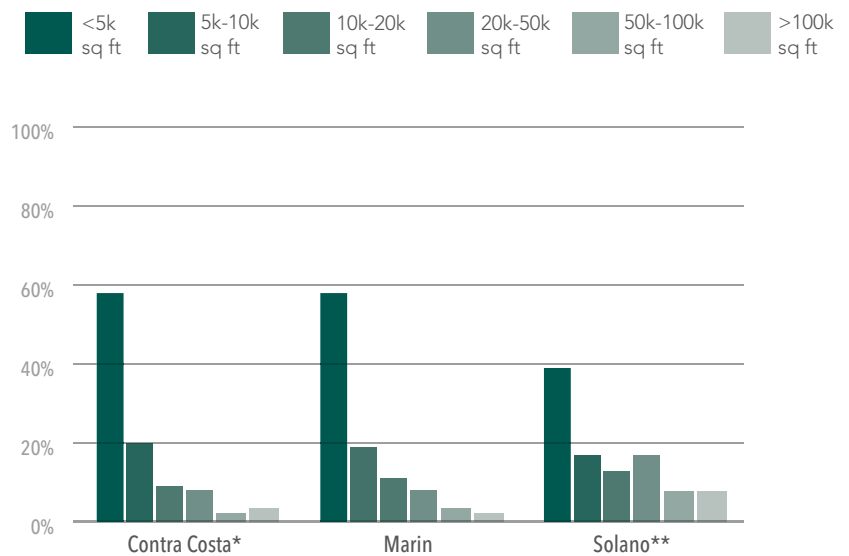


*includes Cities of El Cerrito, Lafayette, Richmond, San Pablo, and Walnut Creek

**includes City of Benicia

Source: City and County Tax Assessor Data

Figure 35. Commercial Building Size by Service Area (Sufficient data on parcel size unavailable in Napa County)



*includes Cities of El Cerrito, Lafayette, Richmond, San Pablo, and Walnut Creek

**includes City of Benicia

Source: City and County Tax Assessor Data

81 Unlocking Energy Efficiency in the US Economy. McKinsey & Company. (2009). Page 58. Available at http://www.greenbuildinglawblog.com/uploads/file/mckinsey-US_energy_efficiency_full_report.pdf

skills needed to convert lead generation to complete projects.

- » **Visibility of Improvements.** Energy efficiency improvements are not as visible as other clean energy strategies, such as rooftop solar panels. As a result, efficiency improvements may not increase property values in the way that other clean energy strategies do.
- » **Lack of Awareness.** Commercial customers have a general lack of awareness of energy efficiency benefits and MCE programs. There is also uncertainty in achievable savings, time constraints, and a lack of dedicated energy managers in the commercial sector. Finally, there is a need for greater sub-metering to gain insight into energy consumption.

MCE's commercial program is designed to address these barriers by reaching customers at trigger points and offering tailored solutions.

Trigger Points

Trigger points are moments of opportunity when the likelihood of engaging customers in an energy efficiency program is highest. Trigger points for commercial customers include:

- » **Turnover and Upgrades.** Periods of change, such as office space turnover (signing or renewing a lease), turnover in retail or restaurant space, and major facility renovations or upgrades.
- » **Change in Law or Regulation.** MCE will use upcoming or anticipated changes in codes, standards, and regulations as a trigger point to motivate commercial customers to act on resource conservation. Where there is a change of law or a sunset to an existing law, there is also opportunity for a SPOC to engage. MCE closely tracks developments in the following laws, standards, and goals, among others:

- » **Laws:** California Green Building Initiative Executive Order (S-20-04), California Energy Benchmarking and Disclosure Law (AB 802, 2015),⁸² California Comprehensive Energy Efficiency Program for Existing Buildings (AB 758, 2009), and California Global Warming Solutions Act (AB 32, 2006 and SB 32, 2016).
- » **Regulations and Standards:** California's energy codes in retrofits (Title 20), California's energy codes in new construction (Title 24), International Organization for Standardization's Energy Management Standard (ISO 50001), American National Standards Institute (ANSI) certification; Leadership in Energy & Environmental Design (LEED); Green Building Initiative's Green Globes, and Department of Energy codes and standards (commercial HVAC equipment, lighting, appliances, etc.).
- » **Goals:** California Long Term Energy Efficiency Strategic Plan and the Governor's greenhouse gas emission reduction goals (Executive Order B-30-15).
- » **Projected or Actual Equipment Failure.** Given capital constraints, commercial operations are unlikely to replace equipment that is not at or near the point of failure. Furthermore, once equipment fails, the ability to replace it quickly is critical. Establishing a relationship with these customers prior to equipment failure will be crucial to MCE's ability to influence the efficiency of the replacement equipment and to encourage a more comprehensive efficiency project. Alternatively, partnering with the contractors who most often provide equipment replacement will also ensure customers are presented with efficient alternatives

82 MCE will also use benchmarking tools (such as Energy Star Portfolio Manager) to gather baseline building information and track efficiency updates.

at the right time and to connect customers with MCE's offerings to go beyond simply replacing the equipment.

- » **Seasonal Triggers.** If a business experiences seasonal periods of relatively low activity, the best time to engage a customer for equipment upgrades would be in advance of a low point of activity, to allow upgrades to be planned for that time period. Conversely, the best time to target a customer for behavioral or operational efficiency offerings might be during periods of high use when there is the most opportunity to save.
- » **Operating Budget Cycles.** Particularly for large commercial customers, an awareness of their budget planning cycle can be crucial to timing discussions about strategic and continuous energy management.

MCE's objective is to utilize these trigger points to effectively engage customers in MCE's energy efficiency offerings. To achieve this, MCE must identify and leverage the entities that influence this sector.

Key Market Actors

There are many entities that influence the commercial sector. It is important that MCE understand the role that each entity plays and how this can affect efforts to promote energy efficiency.

- » **Energy Consumers.** Energy consumers such as owners, renters, staff, and other occupants of a commercial facility are the ultimate end-use decision makers.
- » **Legislative and Regulatory Bodies.** Legislative and regulatory bodies such as Federal and State Legislatures, the California Energy Commission, and the California Public Utilities Commission are

responsible for tax laws, regulations, codes, and standards.

- » **City and County Organizations.** City and County organizations such as development agencies; Planning Commissions, and environmental task forces, committees, and commissions provide influence for programs related to building codes, financial incentives, and customer/constituent relationships.
- » **Community Organizations.** Community organizations such as Chambers of Commerce, RichmondBUILD, San Pablo Merchants Association, Marin Economic Commission, Marin Builders Association, Workforce Investment Boards, West County Council of Industries, and other trade associations and green certification programs provide customer/constituent relationships.
- » **Business Partners.** Business partners such as energy consultants, implementers, visionaries, and financial lending institutions provide marketing, outreach and implementation support services.
- » **Other Key Market Actors:** Construction industry; contractors; equipment manufacturers and suppliers; vendors/commercial supply store; research & development industry; and media.

MCE tracks key market actors in order to identify opportunities and challenges, and the impact of these entities on a customer's energy efficiency decision-making.

Adoption and Penetration

Before implementing commercial program strategies, MCE evaluated current adoption and penetration of energy efficiency programs to identify opportunities and determine market gaps.

Commercial participation rates vary significantly across program administrators and by sector and programmatic approach. According to the American Council for an Energy-Efficient Economy (ACEEE), key drivers in improving participation rates (and ultimately program success) include reducing complexity and increasing confidence. In particular, ACEEE's top ten recommendations include:⁸³

- » Performance Based Energy Efficiency
- » Integrated Services
- » Rich Territory Analytics
- » Persona Development
- » Direct Install Specific Technology
- » Consistent Customer Experience
- » Customer Relationship Manager Tool, Used at Scale
- » Flexible Financing Vehicles
- » Local Partner Ecosystem
- » Predictable Results

Likewise, market penetration rates for high-efficiency equipment varies significantly. For example, restaurants and medical clinics have a higher share of inefficient T12s than schools, while retail stores and warehouses have a higher proportion of high performance reduced wattage T5s and T8s.⁸⁴

83 From New York to the Southeast: EERS paves the way for the next generation of Small Business Direct Install Programs. American Council for an Energy Efficient Economy (ACEEE). Slide 4. Available at <http://aceee.org/files/pdf/conferences/eer/2013/5A-Castro.pdf>

84 California Commercial Saturation Study Final Report. Itron. (2014). Pg ES-8. Available at http://www.calmac.org/publications/California_Commercial_Saturation_Study_Report_Finalv2ES.pdf

MCE's baseline participation rates show that from 2013 to present, over 1,317 businesses have received no-cost audits through SmartLights, the joint MCE-PG&E direct install program, managed by Community Energy Services Corporation, and 401 projects have been completed, resulting in nearly 3,000,000 kWh in savings.

Existing commercial programs in MCE's service area have tended to focus on low-hanging fruit, which presents a challenge to achieving cost-effective savings when many of the lower cost measures have already been replaced, leaving higher cost measures that are less attractive to the customer if not bundled, or that are not cost-effective for the program administrator. However, significant opportunities remain for certain measures (e.g. LEDs and advanced rooftop HVAC controls for example) and in certain sectors (e.g. small to mid-size businesses).

To make significant inroads at penetrating the small to mid-size (SMB) market, energy efficiency programs must develop creative solutions to address structural market barriers like the owner-occupant split incentive. In the large commercial sector, relatively low-cost opportunities like retrocommissioning can be paired with more capital-intensive measures and deep retrofits.

Customer interest in measures like energy dashboards or subsidized electric vehicle infrastructure can be used as an entrance point to get a customer engaged and interested in comprehensive integrated demand side management upgrades. Likewise, upcoming regulations (such as building benchmarking under AB 802) can be a leverage point for large commercial customers. A tailored and integrated approach is crucial to making significant progress in increasing commercial efficiency penetration rates.

12.3 Intervention Strategies

Based on the market characterization, gaps, barriers, and trigger points, MCE proposes to offer the following overarching strategies:

- » Provide participants with a Commercial SPOC to serve as a facilitator and customer advocate and to help guide business owners through the process from initial contact to project completion.
- » Target buildings by using data analytics in order to narrow down opportunities and improve MCE's sales approach.
- » Provide low- or no-cost audits for small commercial properties with limited opportunities.
- » Provide extensive audits with customizable incentives for larger properties.
- » Develop an integrated assessment process that streamlines multiple program offerings into one customer report.
- » Deploy sophisticated customer relationship management (CRM) software that supports ongoing relationships between the business and the program.

The commercial program will offer low- or no-cost audits for small commercial properties, and will provide extensive audits with customizable incentives for larger properties. Upon completion of the audit, an integrated assessment process will streamline multiple program offerings into one customer report. MCE will leverage CRM tools as the foundation for an ongoing relationship between the business and the program.

The program will provide participants with a SPOC who will serve as a facilitator and customer advocate,

and help to guide the business owner through the process from initial contact to project completion. There are many benefits of a SPOC program. For example, projects may be more attractive to customers and easier to accomplish when all savings opportunities are bundled together and follow a clear, uniform presentation. In addition, the SPOC delivery model can provide more personalized attention and more follow-through to reduce customer confusion and increase the project completion rate. Project phasing is yet another benefit; MCE can remain in contact with participating properties over time and encourage property owners to implement projects in phases according to customer needs.

MCE will employ software and data analytics platforms to target buildings and tailor strategies according to demographics and energy savings opportunities.

EM&V studies heavily influence MCE's intervention strategies. Applicable studies are referenced within each strategy section, and a summary of key cross-cutting findings is below:

- » **Value of technical assistance:** demonstrated through 15 years of Savings by Design process evaluations, which show an increase in persistence of savings.⁸⁵
- » **Need for variety of intervention strategies and tactics to meet diverse customer needs:** Opinion Dynamics study points to the diversity of sectors, building types, occupancies, etc. in the commercial sector, and therefore the need for a tailored approach.⁸⁶

85 Final Report 1999–2001 Building Efficiency Assessment (BEA) Study: An Evaluation of the Savings by Design Program. RLW Associates. (2001). Available at [http://www.calmac.org/startDownload.asp?Name=BEA+Final+Report+\(071603\)ES.pdf&Size=101KB](http://www.calmac.org/startDownload.asp?Name=BEA+Final+Report+(071603)ES.pdf&Size=101KB)

86 PY 2013–2014 Third Party Commercial Program Value and

- » **Evolving Lighting Landscape:** the 2013–2014 Nonresidential Downstream Deemed Energy Savings Performance Incentive Lighting Impact Evaluation Final Report provided a series of key recommendations for how to properly claim early retirement, account for dual baselines, improve the net to gross ratio framework, and accurately apply installation rates in ex ante claims.⁸⁷

Comprehensiveness Analysis Report⁸⁸

- » An increase in technologies addressed (or measures offered) does not necessarily mean either an increase, or a decrease, in savings achieved.
- » Focusing on very small customers yields higher “depth of retrofit cost–effectiveness” (DORCE) than large customers.
- » Food service and water heating offer opportunities for higher DORCE scores, while plug loads are the least effective.
- » Colleges and other campus–style facilities, offices, groceries, and liquor stores generally have higher DORCE scores than restaurants and public assembly buildings.

These EM&V studies provide useful insights for the details behind intervention strategies.

Retrofit

This program offers technical assistance, incentives (including kickers for whole building projects and projects with multiple measures), and financing options to upgrade existing commercial facilities. In addition, customers who achieve zero net energy (ZNE)⁸⁹ will receive a bonus incentive. Savings can be estimated with either a performance–based or widget–based approach, depending on the type of project. Rebates will be offered for lighting, HVAC, refrigeration, insulation, building envelope, plug loads, and other measures as appropriate.

MCE will offer tailored approaches, recognizing that small businesses have different needs and barriers to entry than larger commercial facilities. For example, as a generalization, SMBs may face more stringent payback period thresholds—and therefore may be better candidates for financing to ensure deeper retrofits.

Data Analytics and Behavioral Approaches

Data and behavioral–based approaches offer a wealth of innovative tactics to inform, engage, and motivate customers to change their energy consumption habits. Displaying monthly usage over time and highlighting issues and opportunities for customers can encourage behavior changes in usage patterns.⁹⁰ Many of the same tools can also serve as powerful ways to target customers for participation. Data analytics and software systems are leveraged to enable continual measurable feedback for assessing opportunities, project tracking, lead generation, and Measurement & Verification (M&V).⁹¹

Effectiveness Study Report. Opinion Dynamics. (2016) Available at [http://www.energydataweb.com/cpucFiles/pdaDocs/1571/PY%202013–2014%20Third%20Party%20Commercial%20Program%20Value%20and%20Effectiveness%20Study%20\(volume%201%20of%20II\).pdf](http://www.energydataweb.com/cpucFiles/pdaDocs/1571/PY%202013–2014%20Third%20Party%20Commercial%20Program%20Value%20and%20Effectiveness%20Study%20(volume%201%20of%20II).pdf)

87 2014 Nonresidential Downstream Deemed ESPI Lighting Impact Evaluation Report. Itron. (2016). Available at <http://www.energydataweb.com/cpucFiles/pdaDocs/1446/Deemed%20Lighting%20Report%20and%20Appendices.pdf>

88 Comprehensiveness Analysis Report Phase I. Itron. (2016). Available at <http://www.energydataweb.com/cpucFiles/pdaDocs/1624/CA%20Comprehensiveness%20Analysis%20Draft%2>

89 Comprehensiveness Analysis Report Phase I. Itron. (2016). Available at <http://www.energydataweb.com/cpucFiles/pdaDocs/1624/CA%20Comprehensiveness%20Analysis%20Draft%2>

90 Home Energy Report impact evaluation findings vary from program to program. One report found 0.8% measurable kWh savings. Review and Validation of 2014 Southern California Edison Home Energy Reports Program Impacts (Final Report). DNVGL. (2014). Pg 3. Available at http://www.calmac.org/publications/DNV_GL_SCE_HERs_2014_FINAL_to_CalmacES.pdf

91 Measurement and verification differs from evaluation, measure-

Examples include everything from benchmarking platforms (like Energy Star Portfolio Manager), to load disaggregation software, to fault detection and diagnostics software. These tools could also enable dashboard control of plug load technology, and provide information to the customer to control existing plug load energy use.

Behavioral approaches can couple these tools with the principles of social norming. Possible strategies include comparative energy reports, competitions, green teams, interactive energy-use kiosks, social media, and games. Specific approaches will be tailored according to customer need and demand. Consistent with the other program strategies, data analytics and behavioral approaches will allow for integration with demand response, distributed generation, electric vehicles, and plug load control.

MCE will also leverage lessons learned from benchmarking process evaluations, which show that those who benchmarked buildings went on to take energy management actions in their buildings, such as reviewing building control strategies and setpoints, monitoring electricity, gas or steam use, and identifying areas for reducing energy use.⁹² These data analytics and behavioral approaches could be combined with retrofits to maximize savings and customer engagement.

ment, and verification (EM&V) in that it is information gathered real time and analyzed in house for the purposes of immediate program improvement. EM&V is traditionally conducted by an independent third party to provide an analysis of program improvement for regulatory processes.

⁹² Statewide Benchmarking Process Evaluation. NMR Group. (2012). Available at http://www.calmac.org/publications/Statewide_Benchmarking_Process_Evaluation_Report_CPU0055.pdf. Study findings indicate the potential for benchmarking and identifies barriers and opportunities that raise questions for California stakeholders on how to best leverage the legislative, ratepayer, market and other resources at hand going forward.

Green Business Certification

Green Business Certification provides proof of a company's commitment to conserving energy and water, minimizing waste, preventing pollution, and reducing its carbon footprint. This certification can be a powerful tool to encourage companies to conduct energy assessments and invest in the efficiency of their operations. MCE partners with local governments' sustainability departments to provide assistance in the certification process by helping customers navigate certification options and providing audit verification. MCE will facilitate marketing and outreach for green businesses to help publicize their commitment to sustainability, generate demand locally for green businesses, and drive participation in MCE's efficiency offerings. In addition, MCE will promote green building rating programs and educate customers on the value of building labels.

Pay-for-Performance

MCE will offer incentives to customers based on measured and verified savings. This "pay-for-performance" approach will leverage Advanced Metering Infrastructure (AMI) data and innovative meter-based measurement strategies to capture real, verified savings while minimizing administration expenses. This program may be delivered in conjunction with demand response programs. The load reductions could then be aggregated and bid into the California Independent System Operator (CAISO) market.

Another model that pay-for-performance can support is the use of a transaction structure in which a third-party investor finances building efficiency upgrades. MCE would then buy the actual energy savings from the third-party investor, while the building tenant or owner would reduce electricity consumption costs. MCE would partner with industry leaders to pilot this innovative approach to using energy efficiency in procurement.

The pay-for-performance approach aims to ultimately transform the market by spurring innovation and private sector investment in market-based approaches to energy efficiency, which may also be coupled with bundled approaches including demand response, solar, and electric vehicles. Ideally, the program will leverage real time accounting for savings using SmartMeter data. Finally, the program aims to share costs and risks with contractors and industry at large (not just the program). This strategy will be tailored and aligned with comparable program offerings in the industrial sector.

Strategic and Continuous Energy Improvement

Strategic and Continuous Energy Improvement (S-CEI) aims to promote energy efficiency as a common business practice. The typical pillars of an S-CEI program include: obtaining management support for ongoing energy efficiency enhancements, conducting ongoing assessments, trainings and improvements, and periodically developing and reviewing strategic efficiency goals. An emerging best practice is to offer energy management certification to help ensure the long-term success of projects. The goal is to create lasting changes driven by management and facilities personnel.

S-CEI projects can be a mix of retrocommissioning in that they typically target behavioral and operational measures; however, they go beyond retrocommissioning by emphasizing leadership buy-in and ongoing updates to energy management plans. Anticipated benefits of S-CEI include measurement of actual savings, plus a higher likelihood of deeper savings, greater persistence, and improved customer satisfaction. Rebates will be given for lighting, HVAC, refrigeration, insulation, building envelope, plug loads, and other measures as appropriate.

New Construction

MCE's commercial new construction offering targets new facilities or major renovations that require a

building permit and trigger code compliance. MCE offers education, performance-based incentives, and financing options to foster greater adoption of energy efficient and green building practices. Exceeding Title 24 requirements requires significant investment and technical knowledge. To help overcome this barrier, outreach will be conducted to architects and builders to encourage factoring energy-efficient technologies and strategies into cost estimates and design plans. Performance-based incentives will be offered to encourage investment in long-term energy savings. In addition, MCE will connect property developers with emerging financing programs that can help eligible customers to defray the higher upfront cost. Finally, customers who achieve ZNE will receive a bonus incentive.

MCE will offer tailored approaches, recognizing that small businesses have different needs and barriers to entry than large commercial facilities. Rebates will be offered for lighting, HVAC, refrigeration, building envelope, plug loads, and other measures as appropriate. MCE will evaluate offering tiered incentives for exceeding code.

Financing

MCE appreciates the value of financing in helping customers overcome barriers to efficiency. The 2012 "On-Bill Financing Process Evaluation and Market Assessment"⁹³ found that more than half of survey respondents said that financing was a bigger motivator than rebates.

MCE will help customers navigate the landscape of financing offerings available and encourage them to participate to the extent that it facilitates energy efficiency upgrades.

93 California 2010–2012 On-Bill Financing Process Evaluation and Market Assessment. Cadmus. (2012). Available at http://www.calmac.org/publications/On_Bill_Financing_Process_Evaluation_Report_2010-2012.pdf The study recommends ramping up training, which should highlight case studies of the benefits of bundling lighting retrofits with other equipment retrofits, and recommends expanding marketing efforts, emphasizing the benefits of removing the upfront cost barrier.

» **Green Business Loans**

This provides eligible customers with a low interest loan they can repay on their monthly utility bills. As of December 2016, the interest rate is 5% for \$10,000 to \$265,000 projects, with 5- to 10-year payment terms (subject to change). Up to 30% of the loan value can be used for non-energy related projects.

» **Leveraging Other Programs**

MCE also intends to promote a broad range of programs available in its service area including those described below.

» **Property Assessed Clean Energy**

Property Assessed Clean Energy (PACE) is a form of financing that enables property owners to pay for energy efficiency, renewable energy, and water conservation upgrades through a tax assessment on their property. Advantages of PACE include transferability with the property upon sale, long-term financing, and the ability to share the financing with tenants. Finally, it can be a source of financing for new construction projects.⁹⁴

MCE works with the County of Marin to implement an Open Market PACE model whereby any provider who agrees to a minimum set of best practices is eligible to operate in Marin. MCE will seek to work with other parts of its service area to expand this approach to PACE. MCE maintains a financing marketplace web portal where information about all available financing products is presented to the customer. Additionally, SPOCs will refer customers to PACE providers.

» **On-Bill Financing**

As of December 2016, the Investor Owned

Utilities (IOUs) have a statewide program that uses ratepayer funds to offset the upfront cost of a project and the customer can pay back the improvements over time on the utility bill. This product, offered at 0% and available for loans between \$5,000 and \$100,000, requires participants to limit the payback of projects financed through the loan to five years. However, this program may be a powerful motivator – particularly for small business customers who may have limited time tenancy in the property.

» **Statewide Financing Pilots**

The IOUs are rolling out a variety of financing tools (loans, leases, and energy service agreements) for energy efficiency improvements. MCE will monitor the development of these products and ensure that customers are made aware of them as a possible means to complete upgrade projects.

Metrics Tables (Table 21)

Alongside the other program administrators, MCE developed metrics that connect market barriers to intervention strategies, and that provide near, mid, and long term targets that build towards a 10-year vision. The metrics are based on the framework presented to the Energy Division in August 2016, which emphasized:

- » Usefulness for program administrators to manage portfolio
- » Information on the progress towards achieving desired market effect(s) and strategy effectiveness
- » Reliance on data collected during program implementation and/or data reporting to CPUC
- » Simple to understand and clear of any subjectivity
- » Emphasis on long-term outcomes

⁹⁴ Some PACE providers utilize SB 555 (2012) as the enabling legislation; this follows the Mello-Roos style assessment which can be used for new construction rather than the Streets and Highways Code assessment enabled under AB 811 (2008).

Table 21. Commercial Sector Market Barriers & Metrics

Problem Statement	Market Barriers	Desired Market Effects/ 10-year Vision	Intervention Strategies
Misalignment between typical payback requirements and commercial building turnover rates (disincentive to pay for upgrades that they may not benefit from)	Financial barrier	Improve the energy efficiency penetration in the untapped property management market	<ol style="list-style-type: none"> 1. Leverage SPOC 2. Sophisticated CRM 3. Partnerships to engage and get buy-in from property managers
"Split incentive" issue in which the tenant pays for electricity, but does not own the equipment. This arrangement is very common in the commercial sector, and can make it challenging to get buy-in and financial backing for efficiency upgrades	Split incentive	Landlords offer upgrades as business-as-usual	<ol style="list-style-type: none"> 1. Leverage SPOC 2. Sophisticated CRM 3. Partnerships to engage and get buy-in from property managers
Potential savings are fragmented across a high diversity in business type and large geographical area	Geographic diversity and area	Projects completed with relatively similar penetration across service area	<ol style="list-style-type: none"> 1. Diversity of campaigns and outreach to reach broad territory
Limited number of contractors with technical knowledge of integrated and comprehensive demand-side management and a need for more contractors that also have the business, sales, and project management skills to convert lead generation to complete projects	Lack of contractor training; workforce limitations	Increase in contractor-driven projects	<ol style="list-style-type: none"> 1. Expand contractor trainings and incentives
Uncertainty in achievable savings	Lack of data	Metered-based savings provides customers with greater certainty in savings	<ol style="list-style-type: none"> 1. Metered-based savings pilots 2. Pay-for-performance strategies
Lack of dedicated energy managers in the commercial sector	Lack of time	Majority of commercial properties have an energy manager	<ol style="list-style-type: none"> 1. Incentives and trainings for dedicated and shared energy managers
Need for greater sub-metering and metered energy savings approaches to gain insight into energy consumption patterns and savings over time	Lack of data	Greater reliance on metered savings	<ol style="list-style-type: none"> 1. Promoting use of metered energy savings where applicable
Commercial customers' general lack of awareness of energy efficiency benefits and MCE programs	Lack of awareness	Majority of commercial customers recognize MCE's energy efficiency brand and benefits	<ol style="list-style-type: none"> 1. Expand marketing efforts; leverage partnerships to broaden the message about EE benefits 2. Increase in standardization of savings
Energy efficiency improvements are not as visible as other clean energy strategies, such as rooftop solar panels. As a result, efficiency improvements may not increase property values in the way that other clean energy strategies do	Visibility of Improvements	Property owners and prospective tenants value EE improvements; greater reliance on benchmarking	<ol style="list-style-type: none"> 1. Leverage partnerships and conduct strategic marketing efforts

Sector Metric	Baseline	Metric Source	Short Term Target (1-3 years)	Mid Term Target (4-7 years)	Long Term Target (8-10 years)
Percentage of commercial customers that participate in the program	Current percentage of commercial customers that participate in the program	MCE Program database	Increase to 2% of market	Increase to 4% of market	Increase to 6+% of market
Percentage of rental property owners and tenants that participate in programs	Current % of commercial customers that participate in the program	MCE Program database	Increase to 2% of market	Increase to 4% of market	Increase to 6+% of market
Increase in participation in historically under-participating regions	2015 baseline	MCE Program database	Increase to 2% of market	Increase to 4% of market	Increase to 6+% of market
Number of trainings; audit to completion conversion rate	2015 baseline	MCE Program database	Increase by 30% over baseline	Increase by 50% over baseline	Increase by 70% over baseline
Alignment between expected and achieved savings	2015 baseline	MCE Program database	Increase to 2% of market	Increase to 4% of market	Increase to 6+% of market
Percentage of all commercial customers with a dedicated or shared energy manager	Program Year 1 (PY1)	MCE Program database	Increase by 10% over baseline	Increase by 15% over baseline	Increase by 20% over baseline
Number of participants with savings tracked by metered based approaches	PY1	MCE Program database	Increase by 5% over baseline	Increase by 10% over baseline	Increase by 15% over baseline
Percentage of all commercial customers aware of MCE's EE programs	PY1	MCE Program database	Increase by 10% over baseline	Increase by 15% over baseline	Increase by 20% over baseline
EE value included in appraisal	PY1	Program administrator	Establish metric to quantify increased property value from EE (both savings and non-energy benefits)	Quantify data for newly established metric	Integrate metric into customer reports

12.4 Evaluation, Measurement & Verification

MCE will track metrics for measurement and verification (M&V) but will need to conduct Evaluation, Measurement, and Verification (EM&V), in conjunction with the CPUC and its consultants, to gain richer insights through process and impact evaluations.

Anticipated Study Needs

To supplement EM&V activities conducted by the CPUC, MCE proposes to undertake the following Impact and Process Evaluations.

- » **Impact Evaluation.** To evaluate the novel savings methodologies outlined in the data analytics and pay-for-performance strategies, MCE will conduct side-by-side project studies comparing savings estimated by the meter and software programs to savings estimates by traditional M&V approaches (e.g. pre- and post-inspections for lighting and HVAC measures).
- » **Process Evaluation.** For the strategic and continuous energy improvement strategy, MCE proposes an independent survey of participants to gather qualitative information on program design, marketing and outreach, program implementation, participation experience, and market barriers.

In addition, MCE will conduct a cross-sector process evaluation of the SPOC offering to determine to what degree it helps alleviate customer confusion and encourages repeat participation through project phasing.

12.5 Coordination

MCE is an independent Program Administrator operating within PG&E's service territory and overlapping Bay Area Regional Energy Network's service territory. Coordination among different programs will be important to minimize customer and contractor confusion while also achieving program objectives.

Key Partners

MCE will partner closely with other organizations promoting resource conservation, including water districts, climate coalitions, renewable and distributed generation companies and installers, and electric vehicle companies. MCE will communicate regularly with these entities to ensure that they have the latest program information. MCE will facilitate program participants' applications for rebates with these partner agencies and to the extent possible integrate those applications with the MCE application to streamline the participation process.

MCE will adjust its partnership strategy throughout the program cycle based on metrics (key performance indicators) and customer needs and drivers. MCE constantly seeks new partnership opportunities to help achieve its end goal of deeper energy and greenhouse gas savings. Some of the key partners include:

- » **Implementation Partners.** Implementation partners will provide technical assistance, project management, training, quality assistance, and quality control.
- » **Other Program Administrators and Publicly-Owned Utilities.** Other program administrators and publicly-owned utilities are a great source of lessons learned and best practices. In addition, MCE will coordinate offerings with program administrators that share MCE's service area.
- » **Contractors.** Contractors will install measures and be the primary driver of new participants for the single measure rebates.
- » **Local Trade Associations.** Local trade associations will help with marketing and outreach, recruit participants, and provide feedback on program design.
- » **Equipment Distributors.** Equipment distributors will help with marketing and outreach.

Table 22. Commercial Key Partners

	Retrofit	Green Business Certification	Green Business Loans	Pay-for-Performance	Data Analytics & Behavioral Approaches	S-CEI ¹	New Construction
Contractors (HVAC, lighting, etc.)	X		X		X	X	X
Community Groups and Chambers of Commerce	X	X	X		X	X	X
City and County Organizations	X	X	X				
Business Partners (implementers, software and web tool providers, etc.)	X	X	X	X	X	X	X
Trade Allies	X		X		X	X	X
Green Building Groups	X	X			X	X	
Property Management Companies	X		X				X
Commercial Real Estate Organizations	X		X	X		X	X
Financial Lending Institutions	X		X	X		X	X

¹ Strategic and Continuous Energy Improvement

- » **Lending Institutions.** Lending institutions will provide the secured financing for MCE's on-bill repayment offering.
- » **Local Government Sustainability Offices.** Local government sustainability offices or energy programs will identify key participants to facilitate their engagement with the program.
- » **Universities, Government and Other Research Institutions.** Universities, government and other research institutions such as the United States

Department of Energy and Lawrence Berkeley National Laboratory test emerging technologies and program strategies, and can provide lead generation ideas.

- » **PACE Program Providers.** PACE program providers will be a potential source of financing for participants to cover upfront costs.

Table 22 maps strategies to key partners. It is not intended to be fully comprehensive, but rather, a visual representation. ■

13. WORKFORCE DEVELOPMENT

13.1 Introduction

MCE has identified workforce development as a vital component of energy efficiency customer transformation. MCE is invested in developing relevant workforce opportunities in order to achieve its mission of addressing climate change while providing local economic and workforce benefits.

Through a growing network of trained local contractors, MCE can help achieve deeper market penetration with expertise in multiple demand-side management technologies and ensure each project has high program quality standards. MCE will support the success of its energy efficiency programs with complementary workforce development and training.

Skilled workers ensure that efficiency gains are met and that health and safety issues are addressed, even for those customers not participating in the program. Marketing, education, and outreach activities increase the demand for skilled labor in the region. Increase in skilled labor creates spillover benefits⁹⁵ for the whole community, not just program participants.

⁹⁵ Spillover benefits are obtained when the benefits received from the program, such as a highly trained workforce, are not limited to the participants in the program but are shared broadly across the community.

Core Activities

- » Work with local experts to align, leverage, and influence existing training programs and markets in the MCE service area.
- » Offer stackable credential programs that provide workers with a broad spectrum of transferable skills that qualify them for a variety of green jobs.
- » Provide on- and off-ramps for workers of varying levels of experience and ambition.

Summary Tables

MCE's workforce development activities are integral to each sector. The budget for workforce activities is embedded within the programmatic budgets for each of the sectors. Table 23 illustrates how MCE will support sector based workforce activities.

13.2 Gap Analysis and Market Characterization

MCE supports the success of its energy efficiency programs with complementary workforce development and training. MCE recognizes that contractors and workers must have the skills necessary to support program success and that a trained workforce is essential to achieving customer transformation. MCE's growing network of trained local contractors can also help achieve deeper market

Table 23. Workforce Budget Summary¹

Budget Category	Year 1	Year 2
Administrative	\$16,000	\$32,000
Marketing	\$9,600	\$32,000
Direct Implementation	\$128,000	\$243,200
Incentives	N/A	N/A
Evaluation, Measurement, and Verification (EM&V)	\$6,400	\$12,800
TOTAL	\$160,000	\$320,000

¹ Note the workforce budget is embedded in each sector budget and is included here for reference only.

penetration by identifying trigger events that could bring customers to the energy efficiency program.

MCE's goal is to create meaningful employment pathways for workers who are new or recently returning to the workforce, rather than creating one-off trainings that fail to guide participants toward future opportunities. MCE engages community partners to ensure the inclusion of workers from disadvantaged communities pursuing energy sector careers. Working closely with community partners helps MCE to build on existing success in the region, fill gaps in service, and provide meaningful local workforce opportunities in connection to MCE's own renewable energy projects. To date, MCE has contracted almost \$400,000 with RichmondBUILD, the Marin City Community Development Corporation, Rising Sun Energy Center, and others to train and provide local workers to implement energy upgrades for MCE's energy efficiency programs.

Workforce education and training creates an opportunity to break down barriers that disadvantaged communities face in the energy sector. Typically, disadvantaged workers are trained to do tasks that would be considered low-hanging fruit or entry level, which prevents them from career advancement.⁹⁶ MCE plans to address this issue

by working with community-based organizations, industry experts, workforce experts, and employers. Many community-based organizations and workforce development agencies provide clients with a case worker to assist them through the process of becoming gainfully employed as well as to support them and their employer to resolve challenges in the workplace. This type of on-the-job training leads to long-term employment.⁹⁷

The other major issue MCE has identified is that not enough industry professionals are aware of the benefits of energy efficiency upgrades. MCE's pathway program supports everyone from workforce entrants to professionals who have been in the industry for years. Supporting certifications⁹⁸ will create awareness around energy efficiency, ensure quality installations, and support the adoption of new technologies. However, it is important to note that certifications are a pathway to career advancement and not the end-goal of MCE's workforce program.⁹⁹

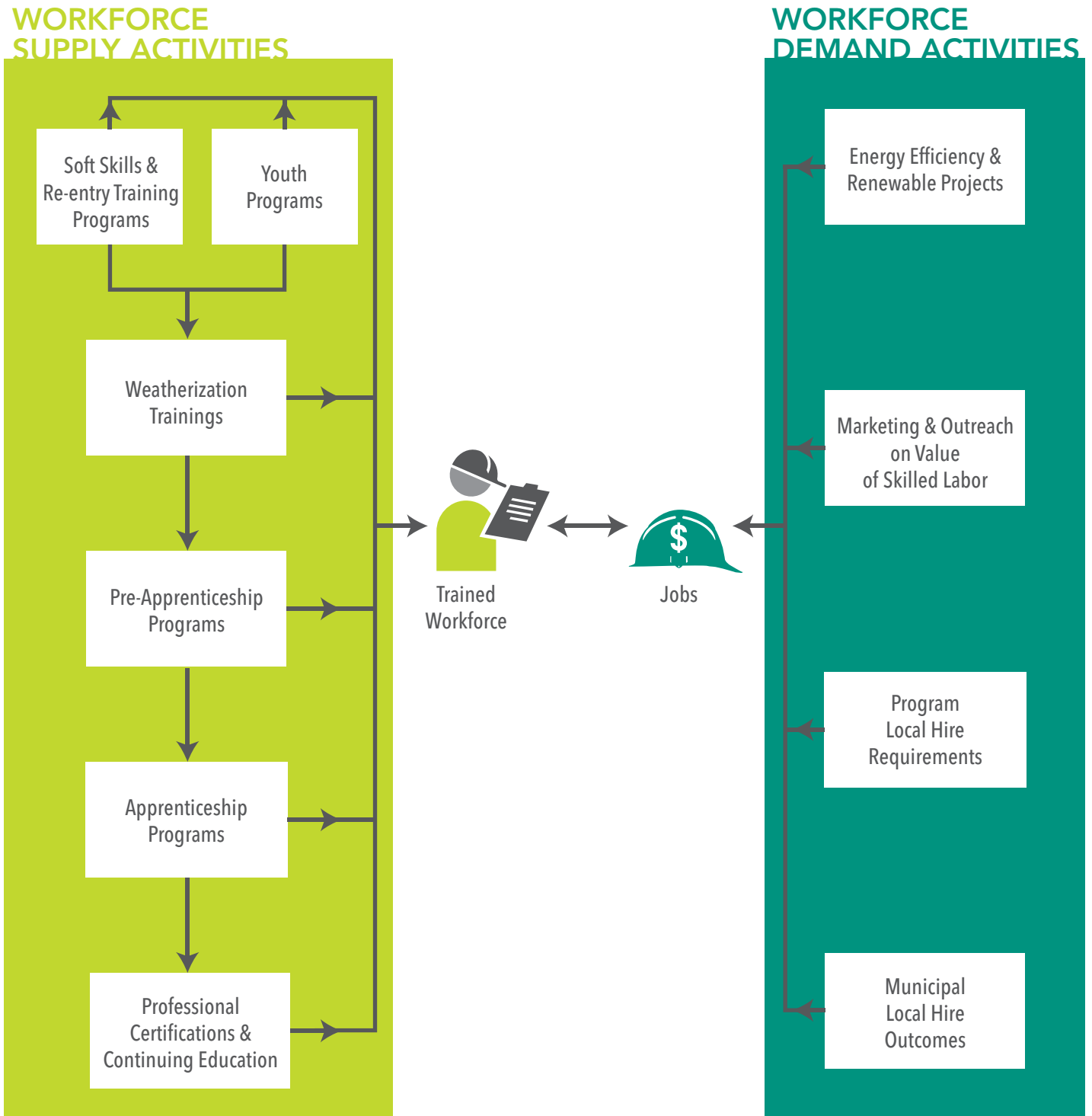
Opinion Dynamics and McLain ID Consulting. (2012) p. 59

⁹⁷ Training for the Future: Workforce Development for a 21st Century Utility Los Angeles's Utility PreOCraft Trainee Program. Ellen Avis and Carol Zabin. (2013) p. 11.

⁹⁸ Building Performance Institute, Green Point Raters, Pre-apprenticeship, and technology specific certifications.

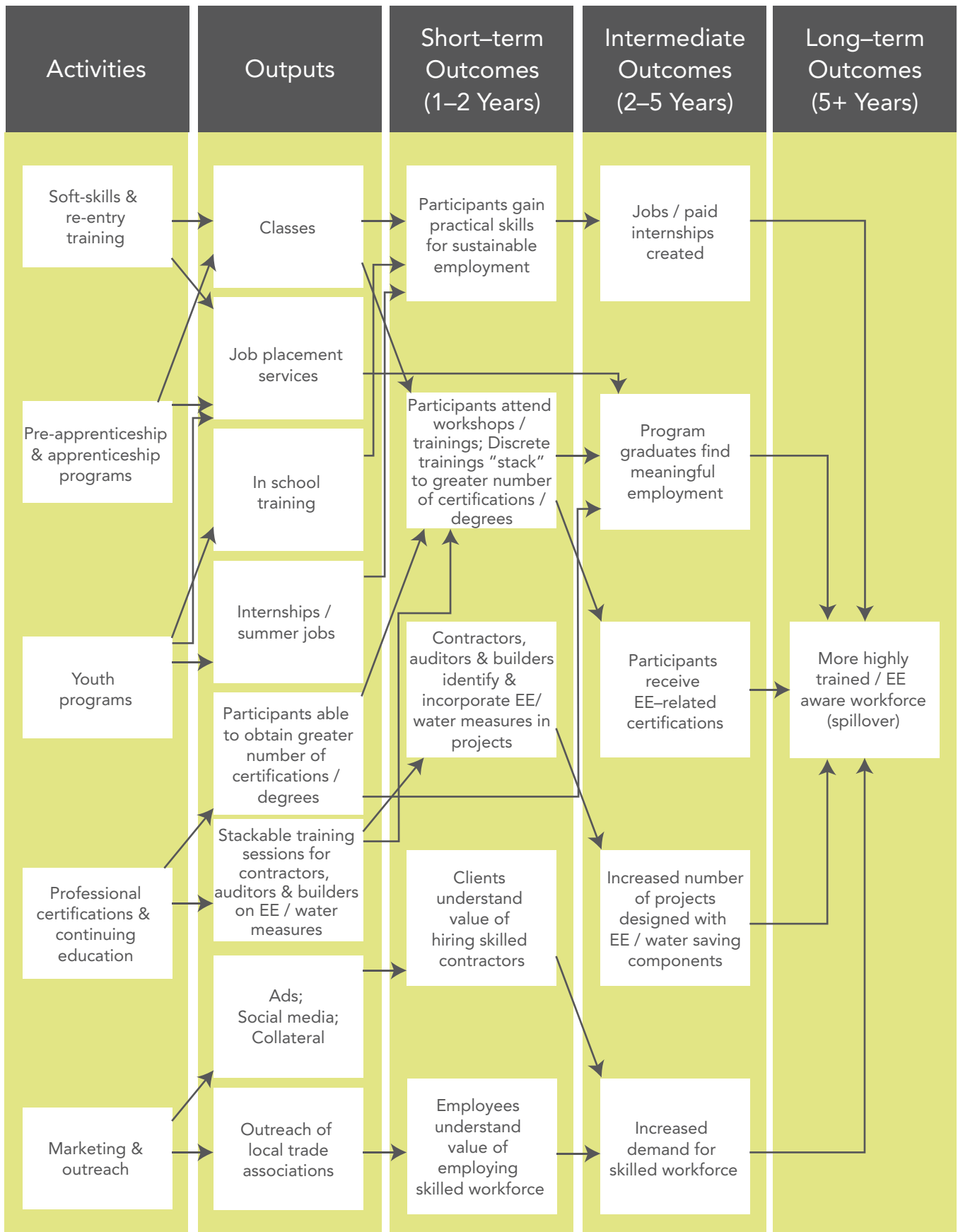
⁹⁹ Existing Buildings Energy Efficiency Action Plan. CEC. (2015) p. 66. Available at CEC.com/laladoc.

Figure 36. Workforce Program Diagram



MCE will work with industry experts to support trainings that create meaningful career pathways and activities that create a demand for a skilled workforce.

Figure 37. Workforce Program Logic Model



Workforce Data

MCE focuses on workforce development from a data-driven perspective. Understanding the existing level of engagement on energy efficiency and green building certifications, as well as the uptake in energy efficiency programs, will ensure trainings focus on areas where there is real opportunity. Tables 24–26 demonstrate that there are a significant number of certified green building professionals in MCE’s service area. The majority of contractors in the service area are general contractors, which indicates a strong opportunity for continuing education and professional development.

Problem Statements

There are several barriers that may prevent contractors from fully taking advantage of workforce development opportunities. These barriers include:

- » **Time Commitment.** Not all contractors have the time¹⁰⁰ or sufficient staff to participate in trainings while managing the daily needs of business. Contractors are hesitant to participate in trainings

100 2010–2012 WE&T Process Evaluation Volume I: Centergies. Opinion Dynamics and McLain ID Consulting. (2012) p. 16.

Table 24. Green Building Professionals Serving MCE’s Customers¹

Certification Type	# of Certifications
Certified Green Building Professionals	839
Certified Green Real Estate Professionals	362
Appraisers: Valuation of Sustainable Buildings (Residential)	26
Green Point Rater: New Homes	196
Green Point Advisor: New Homes	8
Green Point Rater: Existing Single Family	82
Green Point Advisor: Existing Single Family	25
Green Point Rater: Existing Multifamily	81

1 2009 California Residential Appliance Saturation Study. KEMA, Inc. for the California Energy Commission. October 2010. <http://www.energy.ca.gov/2010publications/CEC-200-2010-004/CEC-200-2010-004-ES.PDF>

Table 25. Building Performance Institute Certifications Awarded to Contractors in MCE’s Service Area¹

Certification Type	# of Certifications
Building Analyst	150
Envelope Professional	38
Heating Professional	6
AC & Heat Pump Professional	2
Multifamily	62
Infiltration & Duct Leakage	3
Energy Auditor	3

1 2009 California Residential Appliance Saturation Study. KEMA, Inc. for the California Energy Commission. October 2010. <http://www.energy.ca.gov/2010publications/CEC-200-2010-004/CEC-200-2010-004-ES.PDF>

Table 26. Membership of the Marin Builders Association by Contractor Type

Certification Type	Marin Contractors ¹	Contra Costa Contractors ²
Appliances	2	
Architects & Designers	12	
Construction Management, Estimating & Scheduling	4	
Drywall	3	
Electrical	19	17
Siding	3	
Fireplaces	2	10
General Contractors: Residential, Commercial, New & Remodels	143	72
Heating, Air Conditioning & Sheet Metal	12	62
Insulation	2	49
Lumber, Hardware, Tools	9	18
Plumbing	26	13
Propane	2	18
Roofing	13	22
Solar	5	
Windows & Doors	16	

1 Marin Builders Association Member Survey. Marin Builders Association. (2015).

2 Workforce Development Board of Contra Costa County. (2016).

that take time away from closing and completing projects.

- » **Cost of Trainings.** Trainings, workshops, and certifications can be costly and cannot be invoiced to a specific project budget. This barrier particularly impacts contractors from disadvantaged communities.¹⁰¹
- » **Contractor and Customer Perception of Energy Efficiency Costs and Benefits.** Contractors and their customers may have a misperception that

energy efficiency upgrades will increase the overall cost of a project¹⁰² as well as the payback period.

- » **Background Check Policies.** Existing policies on background checks may bar non-violent criminals from participating in training programs or from being hired. Inclusion policies¹⁰³ that allow for an appeal process and time background checks as the last step in a hiring process may alleviate this and create opportunities for contractors.

101 Workforce Issues and Energy Efficiency Programs: A Plan for California's Utilities. Donald Vial Center on Employment in the Green Economy at the University of Berkeley. (2014) p. 98.

102 Energy Upgrade California – Home Upgrade Program Process Evaluation 2014–2015. EMI Consulting. (2016) p. 38.

103 Workforce Issues and Energy Efficiency Programs: A Plan for California's Utilities. Donald Vial Center on Employment in the Green Economy at the University of Berkeley. (2014) p. 111.

MCE's workforce development program is designed to address these barriers by providing a range of training opportunities that are accessible depending on a contractor's availability and can build towards more expert certifications over time.

Trigger Points

Trigger points are moments of opportunity when the likelihood of engaging contractors in workforce development strategies is highest. There are times during the negotiation of a contract or the development of a new project when it is most effective to include workforce development measures. When projects with new technologies arise, MCE can coordinate with contractors and the property to provide on-the-job training to local trainees. Additionally, there may be opportunities when a new federal or state workforce ordinance is passed.

MCE's objective is to utilize these trigger points to promote workforce development that is both socially and environmentally beneficial for the community.

Key Market Actors

There are many entities that influence workforce development. It is important that MCE understand the role that each entity plays and how they can affect energy efficiency workforce development:

- » **Workforce Development in Government.** Local governments, the California Energy Commission (CEC), and the Employment Development Department (tasked with workforce development) are key actors. Local hire ordinances and other local government procurement policies may also provide opportunities to support workforce development.
- » **Legislative and Regulatory Bodies.** Federal and State legislatures, the California Public Utilities Commission (CPUC), and the CEC all

support workforce development through tax laws, regulations, codes, and standards.

- » **Architects, Builders, Contractors, Designers and Engineers.** MCE will work with all levels of trades and professionals to understand their training needs and to distribute information about upcoming trainings. MCE will also work with these groups to identify key local industry leaders to deliver trainings.
- » **Local Building Supply and Hardware Stores.** MCE will partner with local building supply and hardware stores to conduct outreach and generate awareness around energy related training opportunities.
- » **Workforce Investment Board, Community College, and Online Training Providers.** Workforce Investment Boards (WIBs) and community colleges are currently major providers of training opportunities in MCE's service area. MCE will work with local WIBs and community colleges to deliver trainings.
- » **Local Business and Organized Labor.** Partnerships with local workforce development agencies will offer case management support to trainees to ensure successful transition to full-time work. MCE will work with organized labor unions as well as local businesses to ensure that job trainees are successful in the workforce and that job retention is an outcome of the program.

MCE tracks key market actors in order to identify opportunities and challenges, and the impact of these entities on a customer's energy efficiency decision making.

13.3 Intervention Strategies

MCE's overall workforce development strategy is geared towards creating meaningful career paths. MCE is working to establish relationships with labor organizations and local businesses to ensure there is a potential career pathway for training participants.

MCE will sponsor, support, and leverage workforce training for contractors, implementers, operations and maintenance staff, and workforce professionals working across sectors. There will be an emphasis on stackable training credentials so contractors with limited time can build towards a more comprehensive skillset. It is imperative that MCE employs and deploys a skilled workforce to implement and support energy efficiency projects completed through its programs.

Strengthen and Support Existing Programs

Many high quality training programs exist within MCE's service area to develop an energy efficiency workforce. MCE can accomplish more in partnership with existing programs than it can by working alone. MCE's objective under the workforce development program is to leverage and support programs that are already developing a robust energy efficiency workforce.

MCE will partner with local workforce experts to align programs throughout its service area ensuring consistent and high quality training. A wide range of trainings for workers will be offered throughout MCE's service area. MCE will influence training providers across MCE's service area by supporting cutting edge, high quality trainings, and creating career pathways to workforce entrants, re-entry workers and industry professionals.

Soft Skills and Re-entry Training Programs

MCE will partner with community-based organizations to provide soft skills training to

supplement participation in existing training programs for underemployed, unemployed, disadvantaged, veteran, reentry, and displaced workers. It will also support the development of on-the-job training programs in energy efficiency.

Stackable Certificate Programs

MCE will focus on providing access to existing stackable credential programs. Stackable credentials are training programs that offer outcomes which can collectively build towards more comprehensive certifications. Stackable credentials make the best use of available time for trainees. Stackable credentials are a component of a larger, more articulated career path. This is in contrast to one-off training opportunities focused solely on a near term and possibly time-limited job opportunity.

Youth Programs

MCE intends to partner with community colleges, primary schools, and technical schools to develop educational and vocational curricula. MCE will also support and sponsor the development of youth training in energy services.

Pre-Apprenticeship Programs

MCE will support the development and implementation of pre-apprenticeship programs. Pre-apprenticeship programs offer consistent and high-quality training and can be on-ramps into apprenticeship programs and eventually into union jobs. MCE will also emphasize soft skills programs to support pre-apprenticeship participants in completing the programs.

Apprenticeship Programs

MCE will support its training program participants to continue their pathway into apprenticeship positions. MCE may offer financial support in the form of scholarships for a limited number of its program participants emerging from the pre-apprenticeship.

Professional Certifications and Continuing Education

MCE will offer professional certification and continuing education opportunities on an ad hoc basis. These opportunities will focus on layering energy skills into existing careers. Examples of this include incorporating zero net energy (ZNE) into architecture and design practices and motivating real estate professionals to understand and communicate the significance of energy attributes on real property. As these opportunities are intended to supplement existing professions, they need to be highly flexible in timing and may be good candidates for online offerings.

Targeted Training Opportunities

MCE will first work to understand the needs of the buildings professionals before developing specific trainings. Using a data-driven, needs-based approach to developing training helps ensure that trainees will have employment opportunities and that training programs provide more meaningful outcomes.

Direct Install Training

Currently, as part of the Multifamily Energy Savings program, MCE trains community members on how to install equipment for efficient energy and water use (e.g. LEDs, showerheads, faucet aerators, and pipe wrapping), as well as program standards and safety protocols, data collection, and tenant outreach and education. MCE will continue its direct install trainings in the multifamily program to provide direct install team members with the skills necessary to implement this service.

Targeted Building Operator Course

MCE will offer customized building operations training to ensure multifamily properties maintain savings over the long-term. This training will be targeted at teaching both property managers and maintenance staff the practical hands-on and theoretical skills that are required to optimize the

performance of their properties. The course will aim to reduce the energy and water consumption at the property while simultaneously improving health, safety, and durability of the structure. This will be accomplished by developing a customized Energy and Green Building Operations and Maintenance Plan and training the building staff to implement it portfolio wide.

Fuel Switching

Fuel switching represents a major growth opportunity for construction trades in coming years with an increase of renewable content in California's electric grid and an emphasis on non-carbon heating sources. MCE will offer trainings to contractors on the best practices for safe and proper installation of new technologies. This ensures contractors understand proper installation procedures and also increases the exposure to and comfort of local contractors with these new technologies, increasing the likelihood that the contractor will recommend the technology to customers.

Zero Net Energy

MCE will work with local and national organizations to provide training to contractors, architects, and developers on the benefits of zero net energy (ZNE) design and construction. Trainings will emphasize integration of ZNE designs at the early stage of project design. MCE will offer training to assist local contractors in understanding implementation of new and emerging technologies to facilitate ZNE construction.

In order for ZNE to have mass adoption, MCE will need to support training at all levels of the workforce. Operations and maintenance staff will need to know how the new technologies work and how to operate, maintain, and fix the equipment.

Partnerships with Community-Based Organizations and Local Governments

MCE will partner with community-based organizations and local governments to provide educational opportunities, conduct outreach, and create awareness around workforce development and the value of a trained workforce. MCE will also work with community-based organizations to identify possible candidates for workforce training programs.

Metrics Tables (Table 27)

Alongside the other program administrators, MCE developed metrics that connect market barriers to intervention strategies, and that provide near, mid, and long term targets that build towards a 10-year vision. The metrics are based on the framework presented to the Energy Division in August 2016, which emphasized:

- » Usefulness for program administrators to manage portfolio
- » Information on the progress towards achieving desired market effect(s) and strategy effectiveness
- » Reliance on data collected during program implementation and/or data reporting to CPUC
- » Simple to understand and clear of any subjectivity
- » Emphasis on long-term outcomes

13.4 Evaluation, Measurement & Verification

MCE will track metrics for measurement and verification (M&V) but will need to conduct Evaluation, Measurement, and Verification (EM&V) to gain richer insights through process and impact evaluations including two specific study proposals discussed below.

Anticipated Study Needs

Certifications Relevance: Are building professionals putting the certification into action? MCE proposes a process evaluation on the ability of program participants to implement the skills obtained through sponsored education and training activities.

Job Creation and Retention: A key component of the workforce program logic is the ability to train workers who will be capable of remaining in jobs over time. MCE proposes an impact assessment to ascertain the ability of the program to place workers in jobs and the retention of those jobs over a year or longer. Components of this include job quality and workforce diversity.

13.5 Coordination

MCE will work as an advocate, convener, expert, and funder alongside workforce and industry experts to ensure the development of a skilled workforce.

Key Partners

Coordination of key stakeholders is imperative to the successful adoption of energy efficiency.

- » **Builders/Designers/Contractors/Architects/Engineers.** MCE will build and maintain relationships within the industry to support its workforce development program. This population is key in successful outreach, education, and development of training programs.
- » **Economic/Workforce Development Agencies.** MCE will work with local economic and workforce development agencies (Marin City Community Development Corporation, San Pablo Economic Development Corporation, RichmondBuild) to identify and enroll underemployed, unemployed, re-entry, and displaced workers within MCE's service area.

Table 27. Workforce Market Barriers & Metrics

Problem Statement	Market Barriers	Desired Market Effects/ 10-year Vision	Intervention Strategies
The energy efficiency workforce requires a wide variety of trainings for all skill levels	Lack of diverse trainings	Stackable certified programs that meet workforce entrants where they are at (Increase of 15% over baseline)	<ol style="list-style-type: none"> 1. Work with partners and industry experts to design and implement trainings 2. Develop a plan for funding sector specific, stackable certifications (entry level to professional certifications)¹
Trainings take contractors away from their core job responsibilities	Lack of time for trainings	To seamlessly integrate trainings into day-to-day operations (Increase of 15% over baseline)	<ol style="list-style-type: none"> 1. Schedule trainings around peak work schedules² 2. Incorporate on-the-job training³ 3. Bring trainings to contractors⁴
Trainings, workshops and certifications can be costly	Lack of funding for trainings	Provide trainings that are accessible to all (Increase of 15% over baseline)	<ol style="list-style-type: none"> 1. Provide subsidized trainings 2. Offer scholarships to individuals 3. Partner with workforce development organizations to provide training for hard-to-reach and at-risk populations⁵
Codes and standards change every few years and it can be difficult for contractors to stay up to date with the changes	Changing codes and standards	Contractors that understand and can easily implement new codes (Increase of 15% over baseline)	<ol style="list-style-type: none"> 1. Work with local planning departments to develop a mobile app 2. Facilitate a conversation between planning departments and contractors to identify gaps, provide feedback loops, and develop channels for information dissemination 3. Work with inspectors to provide on-the-job training for new codes and standards
There are not enough comprehensive educational programs focused on energy efficiency	Discrete trainings do not contribute to a career pathway	Create meaningful career paths for participants (Increase of 15% over baseline)	<ol style="list-style-type: none"> 1. Design an energy efficiency vocational program
Contractors don't know how to use, install or explain the value of new technology	Lack of training on new technologies	New technologies are valued and installed by the masses upon release (Increase of 15% over baseline)	<ol style="list-style-type: none"> 1. Facilitate educational workshops with product manufacturers⁶ 2. Provide on-the-job training for operations and maintenance staff

Sector Metric	Baseline	Metric Source	Short Term Target (1-3 years)	Mid Term Target (4-7 years)	Long Term Target (8-10 years)
<ol style="list-style-type: none"> 1. Increase in stackable certifications 2. Increase in number of trainees completing the pathway 	Determine baseline from Program Year 1 (PY1) data	Program tracking data	Increase 5% over baseline	Increase 10% over baseline	Increase 15% over baseline
<ol style="list-style-type: none"> 1. Number of trainings scheduled around peak work 2. Increase in grants provided for on-the-job training 3. Number of trainings at individual businesses 	Determine baseline from PY1 data	Program tracking data	Increase 5% over baseline	Increase 10% over baseline	Increase 15% over baseline
<ol style="list-style-type: none"> 1. Increase in participants that wouldn't have been able to participate 2. a. Number of individual scholarships given b. Amount of individual scholarships given 3. a. Number of partner organizations b. Number of hard to reach participants trained 	Determine baseline from PY1 data	Program tracking data	Increase 5% over baseline	Increase 10% over baseline	Increase 15% over baseline
<ol style="list-style-type: none"> 1. Number of downloads 2. Number of MCE jurisdictions that participate in the standardized process for dissemination of and feedback loops for new codes and standards implementation 3. a. Number of on-the-job training sessions with inspectors b. Reduction in repeat inspector visits for code violations 	Determine baseline from PY1 data	Program tracking data	Increase 5% over baseline	Increase 10% over baseline	Increase 15% over baseline
<ol style="list-style-type: none"> 1. Number of graduates 	Determine baseline from PY1 data	Program tracking data	Increase 5% over baseline	Increase 10% over baseline	Increase 15% over baseline
<ol style="list-style-type: none"> 1. Number of product specific workshops 2. Number of product specific on-the-job training sessions for operations and maintenance staff 	Determine baseline from PY1 data	Program tracking data	Increase 5% over baseline	Increase 10% over baseline	Increase 15% over baseline

1 Workforce Issues and Energy Efficiency Programs: A Plan for California's Utilities. Donald Vial Center on Employment in the Green Economy at the University of Berkeley. (2014) p. 132.

2 Workforce Issues and Energy Efficiency Programs: A Plan for California's Utilities. Donald Vial Center on Employment in the Green Economy at the University of Berkeley. (2014) p. 78.

3 2010-2012 WE&T Process Evaluation Volume I: Centergies. Opinion Dynamics and McLain ID Consulting. (2012) p. 40.

4 Workforce Issues and Energy Efficiency Programs: A Plan for California's Utilities. Donald Vial Center on Employment in the Green Economy at the University of Berkeley. (2014) p. 79.

5 2010-2012 WE&T Process Evaluation Volume I: Centergies. Opinion Dynamics and McLain ID Consulting. (2012) p. 118.

6 2010-2012 WE&T Process Evaluation Volume I: Centergies. Opinion Dynamics and McLain ID Consulting. (2012) p. 139.

- » **Technical Assistance Providers/Raters/Inspectors.** MCE will partner with technical assistance providers, GreenPoint Raters,¹⁰⁴ and local building inspectors to understand the challenges in the field, the training needs, and to conduct education, outreach, and trainings.
- » **On-the-Job Training Organizations.** By partnering with organizations that provide on-the-job training (both host organizations and funding organizations like the Department of Rehabilitation and Public Safety), trainees will have the opportunity to gain practical, hands-on, and paid training. This provides financial support for trainees while helping them to gain valuable experience.
- » **Department of Education/Community Colleges/Adult Education/K-12 Schools.** In order to provide proper training to and reach (future) workers of all ages MCE will seek partnerships with

local education departments, community colleges, vocational programs, adult education programs, and primary schools. These partnerships may include Marin County Department of Education, College of Marin, Laney College, Tamalpais Adult School, and local high schools.

- » **Labor Unions.** MCE will work with local labor unions to ensure MCE is developing and/or supporting appropriate pre-apprenticeship and apprenticeship programs and to connect workers with meaningful career pathways.
- » **Builders Associations/Industry Associations.** Partnering with local builders or other industry associations will provide access to the building industry workforce, a trusted resource to pass information on, and an inside perspective on the gaps in turning and the general needs of the industry.

104 “GreenPoint Rated is the most trusted independent green home certification program in California, providing proof that a home is healthy, comfortable, durable, and resource efficient.” GreenPoint Rated Website. Build It Green. (2013-2016). Available at www.builditgreen.org/greenpoint-rated

The table below maps strategies to key partners. It is not intended to be fully comprehensive, but rather, a visual representation. ■

Table 28. Workforce Key Partners

	Support Existing Programs Developing an EE Workforce	Targeted Training Opportunities	Marketing & Outreach
Builders / Designers / Contractors	X	X	X
Economic / Workforce	X	X	
Development Agencies	X	X	X
Technical Assistance Providers	X	X	
On-the-Job Training Organizations	X		X
County Department of Education	X	X	
Labor Unions	X	X	X
Builders Associations / Industry Associations	X	X	X

14. PORTFOLIO BUDGET AND SAVINGS

14.1 Introduction

This section describes the methodology utilized by MCE to arrive at energy savings targets that are both realistic and achievable. Rather than relying on the E3 calculator¹⁰⁵ to create savings targets that are cost effective, MCE first modeled likely participation rates to identify achievable savings targets within its service area. MCE then developed a set of measures for inclusion into the portfolio based on the DEER database, the Commercial End–Use Survey (CEUS)¹⁰⁶ and Residential Appliance Saturation Survey (RASS)¹⁰⁷ data on appliances and energy use, the age and types of buildings in the service area, and past program data on the most common measures.

This section describes the methodology utilized by MCE to arrive at the proposed budget and energy

savings targets included in this Business Plan. This section also articulates the function of the declining incentives, and proposes thresholds for portfolio refresh.

14.2 Portfolio Savings and Cost Effectiveness

MCE's customer transformation vision involves a future in which public subsidies are no longer necessary to influence consumers' energy efficiency behaviors. The new, 10–year rolling cycle provides an opportunity to consider how programs should be designed with long–term vision. MCE's program is designed to promote customer transformation over a 10–year period. It will begin with low participation and high incentives, which will reverse as the program matures. Reducing incentives based on customer participation will allow ratepayers dollars to go further and reduce direct costs to MCE's programs. MCE anticipates this approach will improve the PAC results over time and free up resources for more comprehensive projects.

MCE developed cost effectiveness forecasts utilizing the cost effectiveness tool embedded in the California Energy Data and Reporting System (CEDARS) module. MCE input the measure list,

¹⁰⁵ The E3 calculator is a publicly available tool developed by consultants to the CPUC to evaluate the cost effectiveness of current and proposed programs. The tool can be downloaded at: https://ethree.com/public_projects/cpuc4.php

¹⁰⁶ CEUS is a comprehensive study of commercial sector energy use, primarily designed to support the state's energy demand forecasting activities. The data was published in 2006, and the study was funded by the California Energy Commission.

¹⁰⁷ RASS is a residential mail survey that requested information on appliances, equipment, and general consumption patterns from California households. The most recent round of data collection was completed in 2010. The survey was funded and administered by the California Energy Commission.

Figure 38. Declining Incentives by Measure Over Time

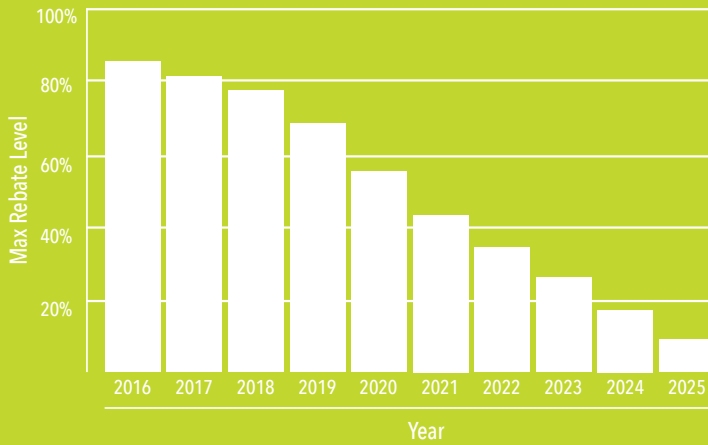
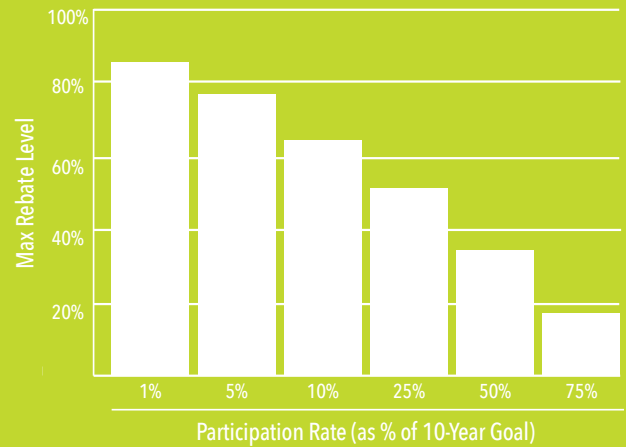


Figure 39. Declining Incentives Tied to Participation Rates



Note: These figures are intended to be illustrative visuals, and not precise or prescriptive.

as described below, and applied the formula of declining incentives over time.

Energy Efficiency Measures List. MCE developed a set of measures for inclusion into the energy savings portfolio based on the DEER database, the CEUS and RASS data on appliances and energy use, the age and types of buildings in the MCE service area, and past program data on the most common measures (particularly for custom measure estimates). MCE incorporated the guidance from Energy Division regarding existing conditions baselines into the cost effectiveness calculators submitted along with this Business Plan.

Declining Incentives Structure. MCE plans to reduce incentives over time, following market trends indicating that customers rely less on financial incentives as motivation increases to implement specific energy efficiency measures and upgrades. Program participation benchmarks will trigger reductions in rebates based on the participation

Table 29. Energy Efficiency Program Budget Summary Years 1-2

Program	Year 1	Year 2
Multifamily	\$1,627,131	\$3,050,503
Single Family	\$2,018,466	\$2,861,099
Commercial	\$1,958,803	\$2,273,098
Industrial	\$1,042,302	\$1,277,288
Agricultural	\$794,553	\$1,245,290
TOTAL	\$7,441,255	\$10,707,278

target. MCE estimates that these triggers will take place over the timeline described in Figure 38. The timeline is dependent on participation rates. Figure 39 shows how declining incentives are tied to participation rates (as a percent of the 10-year participation goal).

MCE expects an initial TRC close to 1.25 for the first year of implementation, with improving cost effectiveness over time as programs ramp up and

participation rates increase. Additionally, the attribution for statewide activities will have a positive effect on the portfolio-level TRC when they are incorporated into MCE’s savings. Detailed budget and savings information can be found in Appendix A.

14.3 Energy Efficiency Program Budget

MCE proposes a budget for the first two years of program activities (Table 29) and an estimate of projected budget for program activities in years 3-10 (Appendix A). The actual budget for later program years may vary from the estimates due to changes in the market, adaptive management of the portfolio, or regulatory influence. For years 3-10 MCE will request actual budgets in the annual budget advice letter filings.

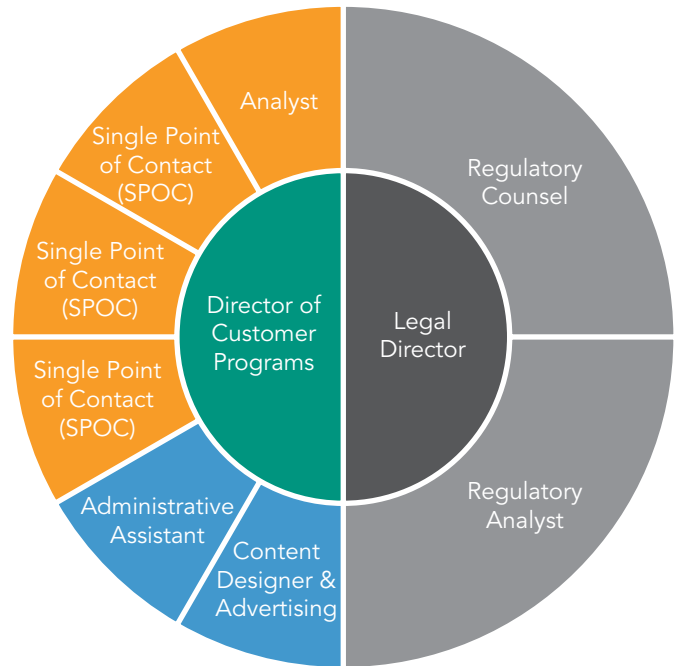
MCE estimates a ramp up period will be needed to transition to the full suite of programs, and such a ramp up is built into to MCE’s budget request. MCE also anticipates relying on external contractors to bolster limited internal program staff.

14.4 Management and Staffing Resources

MCE projects a need for increasing staff resources over time, though staffing is assumed to remain generally static after year three. Any further updates will be made with annual budget filings. Figure 40 presents an organizational chart for year 1; future years and a detailed description of existing and planned staff positions are elaborated in Appendix B. MCE will limit administrative expenditures to ten percent of the portfolio budget; full budget figures by category are shown in Appendix A.

MCE is a small local government agency and does not anticipate developing a large staff. While MCE has presented its proposal for internal staffing needs

Figure 40. Organizational Chart (Year 1)



to support successful Business Plan implementation, much of the work required to support this Plan will need to be accomplished through contracts with external consultants. MCE anticipates a combination of requesting bids for specific program functions, as well as entire program elements for design and deployment by third parties. This will include pilot program activity when appropriate as well as the primary components of MCE’s portfolio.

As a local government, all solicitation processes will be conducted in a transparent and open manner. MCE will generally utilize competitive solicitations when the scope of work exceeds \$45,000 and will utilize a more robust, formal, and competitive solicitation process when the scope of work exceeds \$175,000. These values are provided for illustrative

purposes and revisions based on changes in applicable law will not trigger a Business Plan update.

MCE will coordinate the external and internal resources in part through leveraging a sophisticated CRM and has requested a budget to support this coordination activity.

14.5 Risk Mitigation

The energy savings and customer transformation strategy within the Business Plan are based on an assumption that participation levels will continue to increase even as incentives drop over time. This assumption is not without precedent; the California Solar Initiative demonstrated that increasing market participation can be sustained with declining incentives in part due to decreased material and labor expenses, and emerging technology programs have also demonstrated a similar trajectory. MCE asserts that a positive customer experience will similarly support robust customer participation. However, in order to maintain robust participation levels in later years of implementation, this assumption must hold.

Therefore, MCE proposes a “re-look,” or a reconsideration of budget and incentive levels in the event that assumptions underpinning the portfolio do not hold true. MCE will be responsible for monitoring overall cost effectiveness of the portfolio. Variation in measure-by-measure implementation will be managed through fund shifting or adjustment of incentives on individual measures, which will be reported on an annual basis. However, if drops in incentive levels are not met with a mostly consistent rate of participation, then MCE will be required to reconsider its customer transformation logic. To ensure sufficient time for MCE’s customer transformation proposal to be implemented, MCE proposes this re-look occur at year 4. MCE will continually discuss program progress with CPUC identified stakeholder groups (e.g. the California Energy Efficiency Coordinating Committee), MCE’s community and governing Board, and CPUC staff. MCE will gather input from all stakeholders to inform adaptive management and consider other circumstances that would require a “re-look.” ■

15. CONCLUSION

15.1 Moving from Niche to Primary Provider

Given the vast changes taking place in the energy delivery field, MCE is well poised to become the primary provider of energy efficiency in its service area. The energy provider of the future needs to be much more nimble and locally responsive than utilities of the past, and MCE is this energy provider. Because MCE was created within the last 10 years specifically in response to urgent climate needs, it is uniquely positioned to address significant customer and societal needs moving forward. Its position as a CCA allows MCE to manage its programs and approach from a local community need perspective. This perspective will ultimately provide the best results for communities and customers. From managing distributed energy resources to empowering the grid of the future, MCE has the local focus combined with operational agility to manage vastly and uniquely changing customer demands and needs. The focus of this document is on energy efficiency, but MCE's outlook includes much more than energy efficiency alone.

15.2 The Time is Now

We are living in an extraordinary time. While we currently face intimidating scenarios of climate

disruption due to an over-reliance on carbon-based fuels, we are also seeing incredible advances in technologies that offer the potential to reverse the massive build-up of carbon that is taking place in our atmosphere. But rising to the challenge of climate change will require a rethinking and reworking of how we deliver and manage energy systems as a whole.

As Albert Einstein famously quipped, "we cannot solve our problems with the same thinking we used when we created them." Nowhere is this truer than with our energy systems. Most of the energy in America is generated, delivered, and managed by regulated monopolies that are more than 100 years old. They have served us well for many years. The world now has unique challenges and extraordinary opportunities that did not exist before. MCE is built on a foundation that is focused on today's challenges, perspectives, and relevant issues. MCE was expressly created to solve the problem of GHG emissions and embraces the very best of energy efficiency research and practice. MCE can be nimble and focus on those areas of greatest need and opportunity to drive positive results for the environment and the community. ■

APPENDIX A: PLACEMATS	133
APPENDIX B: MANAGEMENT & STAFFING RESOURCES 2017–18	137
APPENDIX C: LETTERS OF SUPPORT	139
APPENDIX D: KEY FINDINGS FROM WORKSHOPS & SURVEYS	147
APPENDIX E: PUBLIC COMMENTS	148

APPENDIX A: PLACEMATS

Program Budget Years 1–2 (Combined)

Program #	Sector	Administrative Cost	Marketing & Outreach	Direct Implementation (Customer Services)	Direct Implementation (Incentives & Rebates)	Total Direct Implementation	Total Budget By Program
MCE01	Residential Single Family	\$459,315	\$482,511	\$2,314,300	\$1,439,385	\$3,753,684	\$4,695,510
MCE02	Residential Multifamily	\$435,662	\$565,736	\$2,149,401	\$1,352,381	\$3,501,782	\$4,503,179
MCE03	Commercial	\$420,193	\$598,277	\$1,592,965	\$1,451,258	\$3,044,223	\$4,062,693
MCE04	Industrial	\$199,071	\$221,804	\$995,890	\$807,344	\$1,803,234	\$2,224,109
MCE05	Agricultural	\$180,125	\$157,547	\$997,003	\$623,574	\$1,620,577	\$1,958,249
	Total						\$17,443,740
	EM&V						\$704,793

Note: Program Budgets are projected estimates only. Actual budgets for these years will be requested in the annual budget advice letter filings.

Program Budget Years 3–4 (Combined)

Program #	Sector	Administrative Cost	Marketing & Outreach	Direct Implementation (Customer Services)	Direct Implementation (Incentives & Rebates)	Total Direct Implementation	Total Budget By Program
MCE01	Residential Single Family	\$597,243	\$434,512	\$2,826,466	\$2,160,022	\$4,986,488	\$6,018,243
MCE02	Residential Multifamily	\$662,795	\$719,291	\$2,522,416	\$2,767,874	\$5,290,288	\$6,672,374
MCE03	Commercial	\$640,000	\$515,443	\$2,751,427	\$2,338,386	\$5,089,813	\$6,245,256
MCE04	Industrial	\$200,013	\$221,805	\$1,028,291	\$606,501	\$1,634,792	\$2,056,610
MCE05	Agricultural	\$212,125	\$165,547	\$1,197,003	\$647,331	\$1,844,334	\$2,222,006
	Total						\$23,214,490
	EM&V						\$967,270

Note: Program Budgets are projected estimates only. Actual budgets for these years will be requested in the annual budget advice letter filings.

Program Budget Years 5–7 (Combined)

Program #	Sector	Administrative Cost	Marketing & Outreach	Direct Implementation (Customer Services)	Direct Implementation (Incentives & Rebates)	Total Direct Implementation	Total Budget By Program
MCE01	Residential Single Family	\$950,699	\$691,661	\$4,499,206	\$1,736,405	\$6,235,611	\$7,877,971
MCE02	Residential Multifamily	\$1,055,046	\$1,144,978	\$4,015,214	\$2,216,384	\$6,231,598	\$8,431,622
MCE03	Commercial	\$1,018,760	\$ 820,490	\$ 4,379,758	\$ 2,075,434	\$ 6,455,194	\$ 8,294,443
MCE04	Industrial	\$ 318,382	\$ 353,070	\$ 1,636,848	\$ 733,336	\$ 2,370,184	\$3,041,637
MCE05	Agricultural	\$ 337,664	\$ 263,520	\$ 1,905,405	\$ 609,088	\$2,514,493	\$3,115,677
	Total						\$30,761,350
	EM&V						\$1,281,723

Note: Program Budgets are projected estimates only. Actual budgets for these years will be requested in the annual budget advice letter filings.

Program Budget Years 8–10 (Combined)

Program #	Sector	Administrative Cost	Marketing & Outreach	Direct Implementation (Customer Services)	Direct Implementation (Incentives & Rebates)	Total Direct Implementation	Total Budget By Program
MCE01	Residential Single Family	\$1,038,854	\$755,797	\$4,916,405	\$530,757	\$5,447,162	\$7,241,813
MCE02	Residential Multifamily	\$1,152,877	\$1,251,149	\$4,387,534	\$747,523	\$5,135,058	\$7,539,083
MCE03	Commercial	\$ 1,113,227	\$ 896,571	\$ 4,785,882	\$ 2,449,949	\$ 7,235,829	\$ 9,245,627
MCE04	Industrial	\$ 347,906	\$ 385,810	\$ 1,788,627	\$490,981	\$ 2,279,608	\$ 3,013,323
MCE05	Agricultural	\$368,974	\$ 287,955	\$ 2,082,088	\$ 613,626	\$ 2,695,712	\$ 3,352,642
	Total						\$30,392,488
	EM&V						\$1,266,354

Note: Program Budgets are projected estimates only. Actual budgets for these years will be requested in the annual budget advice letter filings.

Electric (kWh) Savings

Program #	Sector	Years 1–2		Years 3–4		Years 5–10	
		Gross kWh Savings	% of Total Portfolio Savings Goal	Gross kWh Savings	% of Total Portfolio Savings Goal	Gross kWh Savings	% of Total Portfolio Savings Goals
MCE01	Residential Single Family	3,802,162	20%	4,320,954	19%	12,620,832	16%
MCE02	Residential Multifamily	3,458,921	18%	3,301,830	15%	9,802,518	13%
MCE03	Commercial	7,259,309	38%	9,237,506	41%	32,758,342	42%
MCE04	Industrial	1,712,578	9%	3,568,890	16%	16,938,397	22%
MCE05	Agricultural	3,086,521	16%	2,120,622	9%	5,884,606	8%
Total		19,319,492	100%	22,549,802	100%	78,004,696	100%

Note: Program savings for years 3-10 are projected estimates only. Updated savings for these years will be provided in the annual budget advice letter filings.

Demand (kW) Savings

Program #	Sector	Years 1–2		Years 3–4		Years 5–10	
		Gross kW Savings	% of Total Portfolio Savings Estimate	Gross kW Savings	% of Total Portfolio Savings Goal	Gross kW Savings	% of Total Portfolio Savings Goals
MCE01	Residential Single Family	505	30%	544	43%	1,642	46%
MCE02	Residential Multifamily	103	6%	147	12%	346	10%
MCE03	Commercial	583	34%	323	26%	677	19%
MCE04	Industrial	125	7%	115	9%	538	15%
MCE05	Agricultural	393	23%	122	10%	394	11%
Total		1,710	100%	124,018	100%	3,595	100%

Note: Program savings for years 3-10 are projected estimates only. Updated savings for these years will be provided in the annual budget advice letter filings.

Gas (therm) Savings

Program #	Sector	Years 1–2		Years 3–4		Years 5–10	
		Gross Therm Savings	% of Total Portfolio Savings Goal	Gross Therm Savings	% of Total Portfolio Savings Goal	Gross Therm Savings	% of Total Portfolio Savings Goals
MCE01	Residential Single Family	182,344	22%	481,414	31%	1,316,875	26%
MCE02	Residential Multifamily	317,023	39%	693,910	44%	2,535,675	50%
MCE03	Commercial	11,041	1%	13,249	1%	47,696	1%
MCE04	Industrial	294,276	36%	353,131	22%	1,271,271	25%
MCE05	Agricultural	11,134	1%	13,360	1%	48,097	1%
Total		815,817	100%	1,555,065	100%	5,219,615	100%

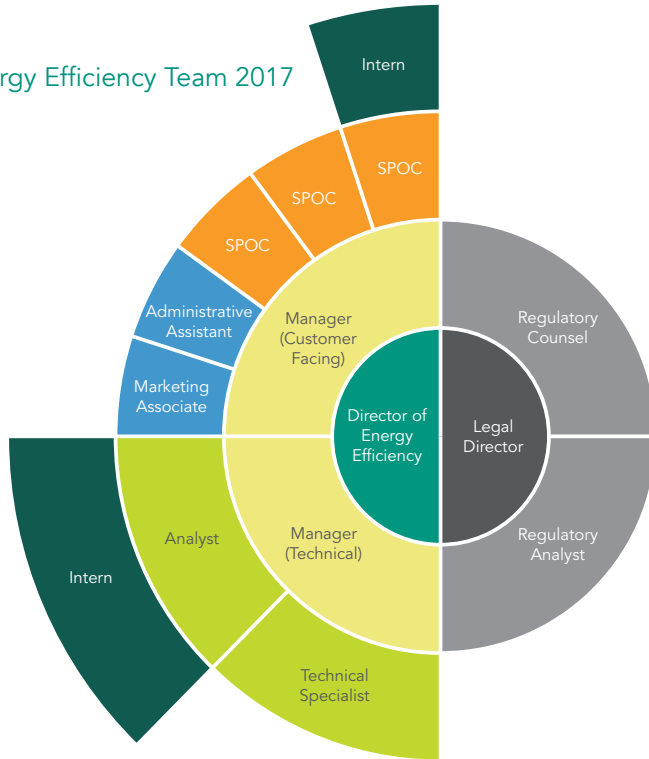
Note: Program savings for years 3-10 are projected estimates only. Updated savings for these years will be provided in the annual budget advice letter filings.

Cost Ratios Years 1–2

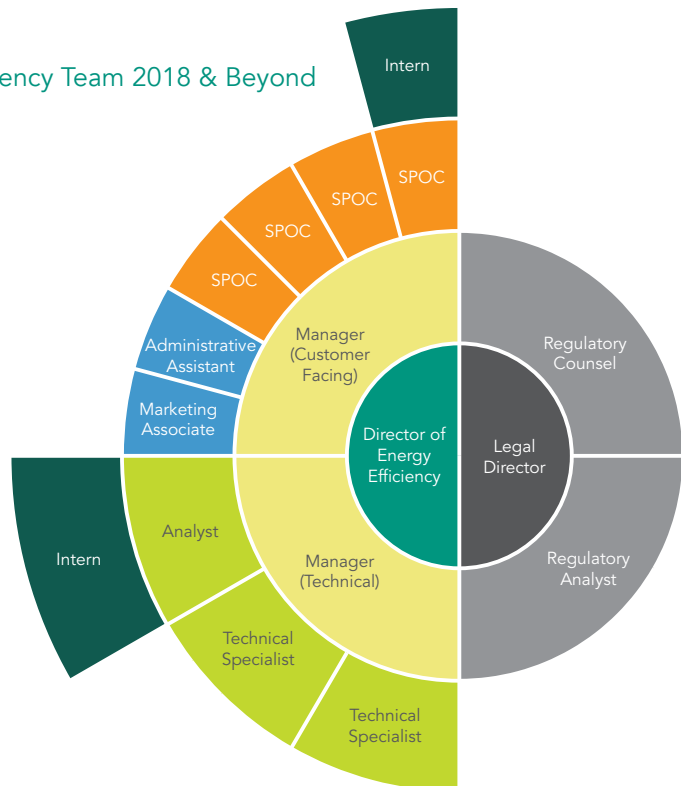
Program #	Sector	TRC Ratio	PAC Ratio
MCE01	Residential Single Family	1.13	1.11
MCE02	Residential Multifamily	1.33	1.33
MCE03	Commercial	1.17	1.27
MCE04	Industrial	1.24	1.31
MCE05	Agricultural	1.27	1.34
	Portfolio Level	1.22	1.25

APPENDIX B: MANAGEMENT & STAFFING RESOURCES 2017-18

MCE Energy Efficiency Team 2017



MCE Energy Efficiency Team 2018 & Beyond



Staff Positions and Descriptions

POSITION	JOB DESCRIPTION
Director of Energy Efficiency	Responsible for portfolio development and administration, regulatory filings and reporting, meeting and setting targets, and staff management.
Regulatory Counsel	Manages all energy efficiency related proceedings, drafts filings, represents MCE's policy interests.
Regulatory Analyst	Analyzes and prepares comments and filings for energy efficiency proceedings and represents MCE's policy interests.
Manager (Customer Facing)	Manages program implementation; responsible for community outreach, education, and engagement; manages SPOCs & support staff. (estimated future need)
Manager (Technical)	Manages the technical aspects of the program; responsible for development of measure lists, E3 calculator, savings and cost modeling, and data management. (estimated future need)
Single Point of Contact (SPOC)	Core of the program and first point of contact for participants, manages building/project data in CRM, identifies programs to meet participants needs, project management, follows up with additional program opportunities for future participation, maintains relationships to provide highest quality customer service, and collects data for reporting. (estimated future need)
Engineer	Responsible for measure list development, savings and cost modeling, data analysis, and E3 calculator management. (estimated future need)
Technical Specialist	Provides support for data tracking and reporting, measure list development, savings and cost modeling, and target and metrics development. (estimated future need)
Marketing Associate	Responsible for designing collateral, print and digital ad campaigns, and all other tasks related to marketing and outreach. (estimated future need)
Administrative Assistant	Provides administrative support; responsible for tracking program metrics, data entry for reporting, scheduling, event and outreach preparation.
Intern	Educational opportunity for high school and college students to learn more about the energy efficiency field; responsible for specific projects: researching funding or rebate opportunities, identifying innovative programs, support marketing; outreach, and administrative tasks. (estimated future need)

APPENDIX C: LETTERS OF SUPPORT



7/28/15

President Picker
 Commissioner Florio
 Commissioner Peterman
 Commissioner Randolph
 Commissioner Sandoval
 California Public Utilities Commission
 505 Van Ness Avenue
 San Francisco, CA 94102

RE: Application for MCE's 2016 and Beyond Energy Efficiency Portfolio

Dear President and Commissioners,

Canal Alliance strongly supports Marin Clean Energy's (MCE's) application for its 2016 and Beyond Energy Efficiency Portfolio. MCE's Business Plan provides a bold vision for achieving ambitious energy savings targets. It provides detail on how MCE will leverage its key strengths – being nimble, flexible, and responsive to customer needs. In addition, the document lays out a plan for leveraging the ten-year program cycle to promote market transformation.

MCE's key innovations including the single-point-of-contact model, advanced customer relationship tool, integrated program delivery, and the use of advanced metering infrastructure data will help to provide higher quality energy efficiency services to our region. MCE's transition to a comprehensive and well-balanced portfolio presents an exciting opportunity to engage customers in novel ways.

We support MCE's proposal to deliver a portfolio of cutting edge programs designed to cost-effectively save customers energy and water, while reducing the state's greenhouse gas emissions.

MCE is the public power provider for the community that we serve. Canal Alliance strongly recommends you approve MCE's 2016 and Beyond Energy Efficiency Portfolio.

Sincerely,

Tom Wilson
 Executive Director, Canal Alliance



President Picker
Commissioner Florio
Commissioner Peterman
Commissioner Randolph
Commissioner Sandoval
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

RE: Application for MCE's 2016 and Beyond Energy Efficiency Portfolio

Dear President and Commissioners,

Community Action Marin strongly supports Marin Clean Energy's (MCE's) application for its 2016 and Beyond Energy Efficiency Portfolio. MCE's Business Plan provides a bold vision for achieving ambitious energy savings targets. It provides detail on how MCE will leverage its key strengths – being nimble, flexible, and responsive to customer needs. In addition, the document lays out a plan for leveraging the ten-year program cycle to promote market transformation.

MCE's key innovations including the single-point-of-contact model, advanced customer relationship tool, integrated program delivery, and the use of advanced metering infrastructure data will help to provide higher quality energy efficiency services to our region. MCE's transition to a comprehensive and well-balanced portfolio presents an exciting opportunity to engage customers in novel ways.

We support MCE's proposal to deliver a portfolio of cutting edge programs designed to cost-effectively save customers energy and water, while reducing the state's greenhouse gas emissions.

MCE is the public power provider for the community that we serve. Community Action Marin strongly recommends you approve MCE's 2016 and Beyond Energy Efficiency Portfolio.

Sincerely,

Laurel Hill
Executive Director

29 Mary Street, San Rafael, CA 94901
415.526.7500, fax 415.457.9677
www.camarin.org



July 29, 2015

Thomas Peters, Ph.D.
President & Chief Executive Officer

President Picker
Commissioner Florio
Commissioner Peterman
Commissioner Randolph
Commissioner Sandoval
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

RE: Application for MCE's 2016 and Beyond Energy Efficiency Portfolio

Dear President and Commissioners:

The Marin Community Foundation strongly supports the applications from Marin Clean Energy (MCE) for its 2016 and Beyond Energy Efficiency Portfolio. I am writing to urge the Commission's approval.

MCE's Business Plan has a sharp vision for achieving ambitious energy saving targets. It provides detail on how MCE will leverage its key strengths. In addition, it lays out a plan for leveraging the ten-year program cycle to promote market transformation.

MCE's key innovations, including the single-point-of-contact model, advanced customer relationship tool, integrated program delivery, and the use of advanced metering infrastructure data will help to provide higher quality energy efficiency services to our region.

We support MCE's proposal to deliver a portfolio of cutting edge programs designed to save customers energy and water, while reducing the state's greenhouse gas emissions.

The Marin Community Foundation strongly recommends you approve MCE's 2016 and Beyond Energy Efficiency Portfolio.

Sincerely,

Thomas Peters, Ph.D.
President and CEO



166 Greenwood Avenue, San Rafael, CA 94901 (415) 488-3748
www.resilientneighborhoods.org

August 2, 2015

President Picker
Commissioner Florio
Commissioner Peterman
Commissioner Randolph
Commissioner Sandoval
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

RE: Application for MCE's 2016 and Beyond Energy Efficiency Portfolio

Dear President and Commissioners,

Resilient Neighborhoods is a community-based program that works with residents to reduce their CO₂ emissions. We strongly support Marin Clean Energy's (MCE's) application for its 2016 and Beyond Energy Efficiency Portfolio. MCE's Business Plan provides a solid vision for achieving ambitious energy savings targets. It provides details on how MCE will leverage its key strength of being responsive to customer needs. In addition, the document lays out a plan for leveraging the ten-year program cycle to promote market transformation.

MCE's key innovations including the single-point-of-contact model, advanced customer relationship tool, integrated program delivery, and the use of advanced metering infrastructure data will help to provide higher quality energy efficiency services to our region. MCE's transition to a comprehensive and well-balanced portfolio presents an opportunity to engage customers in novel ways.

We support MCE's proposal to deliver a portfolio of cutting edge programs designed to cost-effectively save customers energy and water, while reducing the state's greenhouse gas emissions.

MCE is the public power provider for the Marin County community that we serve. Resilient Neighborhoods strongly recommends you approve MCE's 2016 and Beyond Energy Efficiency Portfolio.

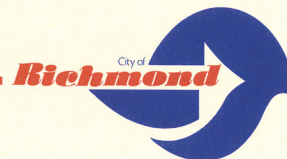
Sincerely,

Tamra Peters, Director
Resilientneighborhoods@gmail.com

Printed on Recycled Paper

RichmondWORKS/EASTBAY WORKS

Employment and Training Department



July 28, 2015

President Picker
 Commissioner Florio
 Commissioner Peterman
 Commissioner Randolph
 Commissioner Sandoval
 California Public Utilities Commission
 505 Van Ness Avenue
 San Francisco, CA 94102

RE: Application for MCE's 2016 and Beyond Energy Efficiency Portfolio

Dear President and Commissioners,

RichmondBUILD strongly supports Marin Clean Energy's (MCE's) application for its 2016 and Beyond Energy Efficiency Portfolio. MCE's Business Plan provides a bold vision for achieving ambitious energy savings targets. It provides detail on how MCE will leverage its key strengths – being nimble, flexible, and responsive to customer needs. In addition, the document lays out a plan for leveraging the ten-year program cycle to promote market transformation.

MCE's key innovations including the single-point-of-contact model, advanced customer relationship tool, integrated program delivery, and the use of advanced metering infrastructure data will help to provide higher quality energy efficiency services to our region. MCE's transition to a comprehensive and well-balanced portfolio presents an exciting opportunity to engage customers in novel ways.

We support MCE's proposal to deliver a portfolio of cutting edge programs designed to cost-effectively save customers energy and water, while reducing the state's greenhouse gas emissions.

MCE is the public power provider for the community that we serve. RichmondBUILD strongly recommends you approve MCE's 2016 and Beyond Energy Efficiency Portfolio.

Sincerely,

Sal Vaca
 Director

330 25th Street, Richmond, CA 94804-1727
 Telephone: (510) 307-8034 Fax: (510) 307-8061 www.richmondworks.org

August 15, 2015

WattzOn
480 San Antonio Road, Suite 202
Mountain View, CA 94040

EcoFactor, Inc.
1450 Veterans Blvd, Suite 100
Redwood City, CA 94063

President Picker
Commissioner Florio
Commissioner Peterman
Commissioner Randolph
Commissioner Sandoval
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

RE: Application for MCE's 2016 and Beyond Energy Efficiency Portfolio

Dear President and Commissioners,

WattzOn and EcoFactor appreciate the opportunity to comment on and contribute to Marin Clean Energy's energy efficiency (and demand response) program implementation plans. More specifically, we are generally supportive of MCE's initiatives, and would like to take this opportunity to open up the plan to data-driven applications that engage the consumer and deliver demand response and energy savings. We believe this expanded set of offerings would be consistent with MCE's mission and customer focus.

EcoFactor and WattzOn have partnered to create a solution that pairs automated energy savings, delivered via a connected thermostat, with behavioral, whole-home solutions gleaned from the unique combination of granular thermostat data and smart meter data. This data combination allows us to curate for the customer a truly personal and holistic experience, without any need to install hardware other than a connected thermostat. Customers gain the ability to control their energy from anywhere and at any time, while truly understanding what drives their energy spend, and receiving targeted, personalized prompts for habits, purchases, home upgrades and solar. Our solution increases the effectiveness of standard energy efficiency programs because it leverages the unique data and high engagement levels provided by mobile, smart thermostat controls.

While we are proud of the results we have delivered individually (e.g., EcoFactor has delivered leading DR and EE results with Nevada Energy (3.1 kW of DR and ~ 7% whole-home energy savings) and WattzOn consistently delivers 10%+ savings via behavioral-based community programs), our combined solution is greater than the sum of its parts, in large part due to the integration of meter data and thermostat data. We thus suggest that our offering would be a great fit for MCE and its customers.

In addition, we were encouraged to read MCE's proposed residential TOU rates and relatively high true-up payments for solar. These incentives should drive desired market behavior, but it is important to provide the tools to consumers, so they can respond easily and intelligently to these

complex market forces. With automated platforms like ours, homeowners (aka “prosumers”) can manage solar production and home energy use in a coordinated fashion, truly optimizing energy usage for the grid and the customer.

Thank you for the opportunity to comment on MCE’s implementation plans. We believe MCE is well-positioned to continue to be a leader in energy efficiency, customer satisfaction, and demand response. We’re here to help.

Sincerely,



Martha Amram
Founder & CEO, WattzOn



Matthew Plante
CEO, EcoFactor



Protecting Marin Since 1934

August 6, 2015

President Picker
Commissioner Florio
Commissioner Peterman
Commissioner Randolph
Commissioner Sandoval
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

RE: Application for MCE's 2016 and Beyond Energy Efficiency Portfolio

Dear President and Commissioners,

The Marin Conservation League has been protecting and enhancing Marin County's natural environment for over eighty years. MCL supports Marin Clean Energy's (MCE's) commitment to reducing greenhouse gas emissions by achieving real energy efficiency as part of its mandate. We strongly support MCE's application for its 2016 and Beyond Energy Efficiency Portfolio.

MCE's transition to a comprehensive and well-balanced portfolio presents a great opportunity to engage customers in creative ways. MCE proposes to deliver cutting-edge programs designed to cost-effectively save energy and water. Its Business Plan provides detail on leveraging the ten-year program cycle to promote market transformation.

The Marin Conservation League strongly recommends you approve MCE's 2016 and Beyond Energy Efficiency Portfolio.

Sincerely,

A handwritten signature in blue ink that reads "Kate Powers".

Kate Powers, President

PHONE: 415.485.6257
FAX: 415.485.6259

EMAIL: mcl@marinconservationleague.org
WEB: marinconservationleague.org

ADDRESS: 175 N. Redwood Dr., Ste. 135
San Rafael, CA 94903-1977



Marin Conservation League was founded in 1934 to preserve, protect and enhance the natural assets of Marin County.

APPENDIX D: KEY FINDINGS FROM WORKSHOPS & SURVEYS

Overview

- » Held six workshops between May – August 2014, with 88 attendees
- » Gathered results from leave-behind surveys, and internet-accessible survey
- » Goal was gathering input on community needs and how to align them to MCE's 2016 and beyond energy efficiency portfolio and strategy

Surveys: Key Findings

- » 64% interested in owning an electric car
- » 9% already own an electric car
- » Most building owners would like to do significant energy efficiency work and can spend over \$7,000 or are willing to finance
- » 83% said it was very important to them that buildings in their community use less energy through energy efficiency and renewables

Community Workshops: Key Findings

Community	Opportunities	Challenges
Expert Panel	Focus on peer educators and community based organizations; emphasize non-energy benefits, sell EE as a service, not a product	Lack of access to data; infrastructure constraints; rules tied to funding; split incentive need for skilled workforce
San Rafael	Saving money and comfort are high priorities for home upgrades	Many can afford high energy bills; EE lacks "street cred"
West Marin (agriculture)	Incentivize early replacement (dairies are cash constrained; tend to replace equipment at failure)	No natural gas; most water from wells or trucked in
Napa (agriculture)	Offer different approaches for small vs. large wineries	Little natural gas; most water from wells
Novato (single family)	Promote home aesthetics (comfort not a main driver; financing unlikely to be attractive)	High rate of renovations (great time to promote EE or ZNE)
Richmond	Workforce development	Language barrier; confusion on trusted messenger; split incentive (high proportion of renters)

APPENDIX E: PUBLIC COMMENTS

Overview

MCE solicited input from its key stakeholders and the community at large. Draft versions of the 2016 Business Plan and Program Implementation Plans were posted on MCE's website, and sent via email to key partners and those on the MCE listserv.

To ensure that the input from the seven (7) organizations is adequately addressed, MCE closely tracked all comments and compiled a formal response to each suggestion. The summary of comments and responses has been posted on MCE's Energy Efficiency webpage.

Summary of Public Comments

#	Organization	Submitter	Topic(s)
1	Benicia Community Sustainability Commission	Constance Beutel	Single Family PIP
2	MCE Board Member	Emmett O'Donnell	EE Strategy
3	Wattzon	Martha Amram	General Questions
4	Marin Conservation League	Kate Powers	All PIPs
5	Resilient Neighborhoods	Tamra Peters	Community Partnership Strategy
6	BayREN	Jennifer Berg	Single Family PIP
7	County of Marin	Dana Armanino	All PIPs
8	Sustainable Marin	Ed Mainland	All PIPs
9	Strategic Energy Innovations	Emily Quinton	Single Family PIP
10	Sustainable Napa County	Jeri Gill	All PIPs



MCE
1125 Tamalpais Avenue
San Rafael, CA 94901
(415) 464-6033
mceCleanEnergy.org/energy-savings

**BEFORE THE PUBLIC UTILITIES COMMISSION OF
THE STATE OF CALIFORNIA**

In the Matter of the Application of Marin Clean
Energy for Approval of its Energy Efficiency
Business Plan.

A. 17-01-____
(Filed January 17, 2017)

**APPLICATION OF MARIN CLEAN ENERGY FOR APPROVAL OF ITS ENERGY
EFFICIENCY BUSINESS PLAN**

Michael Callahan
Regulatory Counsel
Marin Clean Energy
1125 Tamalpais Avenue
San Rafael, CA 94901
Telephone: (415) 464-6045
Facsimile: (415) 459-8095
E-Mail: mcallahan@mceCleanEnergy.org

January 17, 2017

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	BACKGROUND	3
III.	THE COMMISSION SHOULD APPROVE MCE’S BUSINESS PLAN	5
	A. MCE’s Expanded Offerings Are Necessary, Innovative, Promote Customer Transformation, and Integrate the Full Spectrum of Demand-Side Resources.....	5
	1. Expanded Programs Are Necessary to Meet the TRC Ratio of 1.25	5
	2. MCE’s Approaches to Energy Efficiency Are Innovative and Support Customer Transformation	7
	3. MCE’s Ten-Year Vision Incorporates Customer Transformation.....	7
	4. MCE’s Energy Efficiency Programs Integrate the Full Spectrum of Demand-Side Resources.....	8
	B. MCE’s Business Plan Structure Reflects MCE’s Core Activities	8
	C. Topics in Response to Staff Guidance on Business Plan Filings	10
	1. Coordination with Related Proceedings.....	10
	2. Utility Audit, Finance, and Compliance Branch (“UAFCB”) Auditors Report.....	12
	3. CAISO’s 2016–2017 Transmission Planning Process.....	12
	4. Pilot Programs and the Business Plan.....	13
	D. Statement of MCE’s Preparedness for Evaluation	13
IV.	THE COMMISSION SHOULD ADDRESS PROGRAM OVERLAP BY DESIGNATING MCE AS THE DOWNSTREAM LIAISON AND PROVIDING MCE ATTRIBUTION FOR ENERGY SAVINGS WITHIN ITS SERVICE AREA.....	14
	B. Assigning MCE the Role of Downstream Liaison Is a Manageable Solution to Address Overlap with Other PAs	15
	C. MCE’s Role as Downstream Liaison Is Necessary to Accomplish Its Statutory Responsibilities	16
	D. MCE Should Receive Attribution for All Savings from Statewide and Downstream Programs within Its Service Area.....	17
	E. Designating MCE as the Downstream Liaison and Providing MCE with Attribution of All Savings Ensures Equity and Cost Effectiveness	19
V.	THE COMMISSION SHOULD APPROVE MCE’S PROPOSED STATEWIDE DOWNSTREAM PILOTS	21
VI.	THE COMMISSION SHOULD AUTHORIZE A THRESHOLD FOR BUDGET INCREASES BASED ON THE INCLUSION OF NEW COMMUNITIES WITHIN MCE’S SERVICE AREA.....	24
VII.	THE COMMISSION SHOULD DIRECT PG&E TO MODIFY THE GAS FUNDING CONTRACT WITH MCE TO REDUCE UNNECESSARY COMPLEXITY AND ADMINISTRATIVE BURDENS.....	25

VIII. STATUTORY AUTHORITY AND COMPLIANCE WITH THE COMMISSION'S RULES OF PRACTICE AND PROCEDURE	26
A. Statutory Authority – Cal. Pub. Util. Code § 381.1(a)-(d).....	26
B. Categorization – Rule 2.1(c)	26
C. Need for Hearing - Rule 2.1(c)	27
D. Issues to be Considered – Rule 2.1(c)	28
E. Proposed Schedule – Rule 2.1(c)	29
F. Legal Name and Principal Place of Business – Rule 2.1(a)	30
G. Correspondence and Communication Regarding This Application - Rule 2.1.(b)	30
H. Articles of Incorporation – Rule 2.2	30
I. Rule 3.2 Requirements	31
J. Notice and Service of Application	31
K. List of Supporting Documents.....	31
IX. REQUEST FOR COMMISSION ORDERS	32
X. CONCLUSION.....	33

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

In the Matter of the Application of Marin Clean
Energy for Approval of its Energy Efficiency
Business Plan

A. 17-01-____
(Filed January 17, 2017)

**APPLICATION OF MARIN CLEAN ENERGY FOR APPROVAL OF ITS ENERGY
EFFICIENCY BUSINESS PLAN**

I. INTRODUCTION

Pursuant to Article 2 of the Rules of Practice and Procedure¹ of the California Public Utilities Commission (“Commission”), California Public Utilities Code § 381.1,² Decision (“D.”) 14-01-033, D. 14-10-046, D.15-10-028, and D.16-08-019, Marin Clean Energy (“MCE”) respectfully submits this application for approval of MCE’s Energy Efficiency Business Plan (“Business Plan”).³ MCE seeks expeditious approval of an expanded set of programs in its Business Plan with this application. These expanded programs are necessary:

- 1) for MCE to achieve the Total Resource Cost (“TRC”) ratio the Commission requires.⁴
- 2) to employ innovative strategies including: (i) a ten-year vision of customer transformation; and (ii) integration of demand-side resources through a customer-centric Single Point of Contact (“SPOC”); and
- 3) for MCE to provide comprehensive services to its communities.

¹ All subsequent references to rules are to the Rules of Practice and Procedure unless otherwise indicated.

² All subsequent references to codes are to the California Public Utilities Code unless otherwise indicated.

³ The Business Plan is included as Appendix C to the Testimony served with this application.

⁴ D.14-01-033, Ordering Paragraph (“OP”) 3 at p. 50; D.14-10-046 at pp. 109-110.

MCE also proposes and seeks approval of four statewide downstream pilot programs as part of this filing as the Commission requires.⁵ MCE includes the details of the pilots in the application and testimony, as opposed to within the Business Plan, because the Program Administrators (“PAs”) did not reach consensus and so could not include a single proposal. As discussed below,⁶ MCE’s proposed pilots are cross-cutting and designed to positively impact numerous other downstream programs and thus are fundamentally different from and superior to the more narrowly focused programs the Investor-Owned Utilities (“IOUs”) will propose. If MCE’s recommended pilots are approved, MCE will work with the other PAs to develop common language to include as an attachment to all the business plans.

To facilitate the Commission’s review of MCE’s Business Plan, this application also describes how the sector chapters in MCE’s Business Plan reflect the work MCE will undertake, addresses a number of other topics in response to the Staff Guidance on business plan filings, and provides a statement of MCE’s preparedness for evaluation.

In addition to seeking approval of MCE’s Business Plan, this application requests the Commission take the following actions to address the challenge of program overlap among multiple PAs⁷:

- 1) Designate MCE, in its role as a PA, to be the downstream liaison⁸ in its service area and improve program coordination, equity, and cost effectiveness.
- 2) Attribute all energy savings from statewide programs and downstream programs that

⁵ D.16-08-019, at p. 65, and OP 9 at p. 111.

⁶ See *infra* Section V.

⁷ The Commission has determined that program overlap may present challenges but has declined to address overlap until the factual situation arose in a program, application, or advice letter. D.14-01-033 at p. 36. The Commission has suggested that overlap may be addressed in a proceeding devoted to a particularized MCE request for funding. D.15-08-010 at p. 9. With this Application, MCE asserts that the issue is now ripe for Commission review.

⁸ See *infra* Section IV for an explanation of role of downstream liaison.

occur within MCE service area to MCE consistent with the Commission’s approach to sharing costs and cost effectiveness for statewide programs,⁹

Finally, MCE also requests the Commission resolve two ongoing policy issues related to budgets that will enable MCE to be a more effective PA by approving:

1) a threshold for budget increases to address Community Choice Aggregator (“CCA”) service area growth to allow for inclusion of new communities within existing approved programs without triggering a business plan update; and

2) alignment of gas funding¹⁰ and electric funding processes to continue to address climate change and achieve therms savings through comprehensive building upgrades with less administrative burden.

II. BACKGROUND

MCE is the first operating CCA in California. MCE is currently the primary electricity provider in its service area, offering electricity generation to 83% of eligible customers. MCE currently serves over 255,000 customers throughout its service area, which includes the entirety of Marin and Napa Counties and the cities of Benicia, El Cerrito, Lafayette, Richmond, San Pablo, and Walnut Creek. Energy Efficiency (“EE”) is a central part of MCE’s mission “to address climate change by reducing energy related greenhouse gas (“GHG”) emissions through renewable energy supply and energy efficiency at stable and competitive rates for customers while providing local economic and workforce benefits.”¹¹

The Commission is transitioning to a ten-year rolling portfolio framework for EE

⁹ D.16-08-019.

¹⁰ D.14-10-046, OP 26 at p. 168.

¹¹ Our Mission. Available at <http://mcecleanenergy.org/about-us/>.

programs.¹² The Commission anticipates the rolling portfolio framework will reduce market barriers and transaction costs because of the increased certainty of long-term funding, while also balancing the need for appropriate stewardship of ratepayer funds.¹³ The Commission took a significant step toward implementing a rolling portfolio when it ended funding cliffs for PAs.¹⁴ The Commission originally intended to invite rolling portfolio applications in 2015.¹⁵ However, it subsequently directed PAs to file their initial rolling portfolio applications on January 15, 2017.¹⁶

In 2013, MCE administered the first EE programs under the authority granted in § 381.1(a)-(d). These programs were initially restricted by the Commission to serve gaps in IOU programs and hard to reach markets.¹⁷ The Commission subsequently concluded that these restrictions may cause MCE's proposals to fail the TRC test and did not initially impose a minimum cost-effectiveness requirement.¹⁸ In 2014, the Commission lifted the restrictions¹⁹ and imposed the same cost-effectiveness standards on CCAs as IOUs.²⁰ The 2014 programs were extended to 2015 and beyond while the Commission transitioned to the rolling portfolio.²¹

MCE filed a business plan in October 2015 in Application 15-10-014. The Commission held a prehearing conference on MCE's application in early 2016, but no scoping memo was

¹² Phase II of R.13-11-005.

¹³ Order Instituting Rulemaking Concerning Energy Efficiency Rolling Portfolios, Policies, Programs, Evaluation, and Related Issues, R.13-11-005 at pp. 8-9.

¹⁴ D.14-10-046, OP 21 at p. 167.

¹⁵ D.14-10-046 at p. 31.

¹⁶ D.16-08-019 at p. 3.

¹⁷ D.12-11-015 at pp. 45-46.

¹⁸ D.12-11-015 at p. 46.

¹⁹ D.14-01-033 at p. 14. *See also* D.14-10-046 at p. 120 (Commission clarifying that the restrictions do not apply to gas programs).

²⁰ *See* D.14-01-033, OP 3 at p. 50 (Applying IOU cost effectiveness standards to CCAs); D.14-10-046 at p. 109-110 (Setting a TRC ratio of 1.25 for IOUs and CCAs).

²¹ D.14-10-046 at pp. 30-32.

issued and no other action was taken in that proceeding. Since that filing, the Commission issued D.16-08-019, which changed the rules for statewide and third-party programs, among other things. Additionally, Commission staff issued guidance on the business plan filings.²² Finally, the California Energy Efficiency Coordinating Committee (“CAEECC”)²³ was launched in early 2017 and has provided regular input to the PAs in the preparation of their business plans.²⁴

Concurrently with filing this application, MCE is filing a motion to withdraw Application 15-10-014 in that docket. This application supersedes Application 15-10-014.

III. THE COMMISSION SHOULD APPROVE MCE’S BUSINESS PLAN

A. MCE’s Expanded Offerings Are Necessary, Innovative, Promote Customer Transformation, and Integrate the Full Spectrum of Demand-Side Resources

The expanded offerings proposed in MCE’s Business Plan are necessary for MCE to achieve a cost-effective portfolio. The proposal contains numerous innovative strategies focused on providing a valuable and positive customer experience, including a ten-year approach to customer transformation and integration of demand-side resources through a robust SPOC. MCE seeks to transform customers to become more engaged in seeking energy savings and to reduce barriers to customers accessing multiple demand side resources. MCE respectfully requests that the Commission approve its Business Plan to enable MCE to successfully provide a comprehensive EE portfolio to its communities.

1. Expanded Programs Are Necessary to Meet the TRC Ratio of 1.25

A fundamental component of MCE’s Business Plan is the inclusion of new programs that

²² Energy Efficiency Rolling Portfolio Business Plan Guidance (“Staff Guidance”). May 2, 2016. Available at http://media.wix.com/ugd/0c9650_17039cf0febd483ca48440bb6ef41d66.pdf.

²³ CAEECC is a stakeholder forum created in response to direction in D.15-10-028 that includes representatives from each PA, Commission staff, and interested stakeholders from throughout the state.

²⁴ MCE’s Notice of Availability includes a link to the Issue Tracker for stakeholder input developed by CAEECC and includes MCE’s responses to stakeholder input.

ensure a comprehensive, balanced, and cost-effective portfolio. MCE is required to achieve a 1.25 TRC ratio — the same TRC ratio as IOU PAs — which requires a comprehensive and balanced portfolio. MCE’s existing portfolio is restricted to gaps in IOU programs and hard to reach markets, which is insufficient to achieve a 1.25 TRC ratio.

As discussed above, the Commission lifted such portfolio restrictions three years ago.²⁵ MCE needs an opportunity to launch expanded programs if it is expected to achieve a 1.25 TRC ratio. MCE embraces this shift by proposing new programs in the industrial, large commercial, and agricultural sectors as well as by expanding its existing programs in the small commercial, single-family, and multifamily sectors. MCE anticipates that its new portfolio will be more cost-effective than its existing portfolio.

MCE expects the proposed portfolio to grow more cost-effective over time. The Commission recognized this effect in establishing the TRC “on-ramp” for CCA PAs in their first three years of operation.²⁶ MCE has experienced a rapid ramp up of existing programs, with savings increasing 45% between 2013 and 2014 and 85% between 2014 and 2015.²⁷

Once launched, the new programs in MCE’s Business Plan will take time to ramp up operations and develop project pipelines. The administrative burdens will be larger during the ramp up and gradually become more efficient as the programs mature. MCE will optimize its portfolio over time to improve cost-effectiveness (*e.g.* by managing the measure mix and identifying innovative and cost-effective approaches to achieve energy savings). Additionally, elements such as attribution for statewide midstream and upstream activities are anticipated to directly and immediately increase MCE’s TRC ratio. It will take time for MCE to achieve a 1.25

²⁵ See *supra* at 4; D.14-01-033 at p. 14.

²⁶ D.14-01-033 at p. 32-34.

²⁷ Electric savings as reported in the MCE 2013, 2014, and 2015 Annual Reports. Available at <http://eestats.cpuc.ca.gov>.

TRC and the expanded programs proposed in the Business Plan are a necessary step to achieve this result.

2. MCE’s Approaches to Energy Efficiency Are Innovative and Support Customer Transformation

MCE’s Business Plan is innovative and supports Commission policy objectives. MCE’s ten-year vision for EE embraces customer transformation through a positive customer experience and declining incentives for adopted measures. The plan also integrates the full spectrum of demand-side resources, including EE and water-saving measures, to provide customers with more tools to manage their energy use. The plan responds to the changing needs of the energy market by integrating demand-side management strategies and increasing utilization of advanced metering infrastructure (“AMI”) for measurement and verification and customer satisfaction.

3. MCE’s Ten-Year Vision Incorporates Customer Transformation

MCE leverages the ten-year planning horizon in the rolling portfolio to embrace customer transformation. This strategy enhances the customer experience because it promotes solutions based on dynamic value propositions and customer needs. The proposal includes a mechanism that ties incentive levels to adoption rates; as adoption of a measure increases, the incentives for that measure decrease. This mechanism phases out mature technologies automatically and supports emerging technologies through higher initial incentives.

MCE’s emphasis on transforming EE goes beyond a project-by-project approach to foster a culture where EE is the norm — a program design originally anticipated by the Long Term Energy Efficiency Strategic Plan.²⁸ The goal of the customer transformation approach is to

²⁸ The Long Term Energy Efficiency Strategic Plan, jointly adopted by the CEC and the CPUC, calls for a market in which ratepayer subsidies are no longer necessary. January 2011 Update, Section 1.3 at pp. 4-5. Available at http://www.cpuc.ca.gov/NR/rdonlyres/A54B59C2-D571-440D-9477-3363726F573A/0/CAEnergyEfficiencyStrategicPlan_Jan2011.pdf.

create a positive customer experience to encourage repeat program participation and enhance spillover benefits. MCE anticipates that customers will be transformed through direct participation in the program, leading to both more comprehensive initial projects and to subsequent projects, as well as through indirect participation due to spillover benefits from participating customers. This approach to transforming customers will build over time to create change throughout MCE's communities and support EE and energy management as an important part of life.

4. MCE's Energy Efficiency Programs Integrate the Full Spectrum of Demand-Side Resources

MCE integrates demand-side resources through a customer-centric approach that enables customers to access resources that are relevant to the specific projects they wish to implement. The Business Plan describes MCE's SPOC for customers. The SPOC acts as a facilitator and participant-advocate and remains engaged through project completion. The SPOC assists customers in maximizing the work done on a project through providing and bundling demand-side opportunities, phasing projects to incorporate additional technologies over time, and connecting customers to available financing programs. A Customer Relationship Management ("CRM") system will complement the work performed by the SPOC. These elements will support integration of demand-side resources, an ongoing relationship with customers, and new approaches to managing energy.

B. MCE's Business Plan Structure Reflects MCE's Core Activities

The sector chapters in MCE's Business Plan reflect the work MCE will undertake. The Commission has directed business plans to contain a chapter for six sectors including: (1)

residential; (2) commercial; (3) industrial; (4) agricultural; (5) public; and (6) cross-cutting.²⁹ The cross-cutting chapter can include measures, strategies, or interventions that do not cleave neatly along sector boundaries.³⁰

MCE’s Business Plan presents the residential sector as two separate chapters: single family and multifamily. This structure reflects the differences in serving these two subsectors and allows for more tailored approaches for each type of residential property. MCE includes an industrial and agricultural chapter consistent with Commission guidance. MCE provides a workforce chapter as a cross-cutting chapter, which describes MCE’s approach to workforce development that applies to all customer sectors.

MCE will include emerging technologies as measures in its portfolio, but may not engage as heavily as other PAs to identify and provide the technical underpinnings to introduce new technologies. MCE includes financing elements embedded in each sector chapter to highlight how these elements will be utilized for different customer segments. Additionally, the SPOC will serve to connect MCE’s customers with the financing programs available through the statewide financing pilots.

MCE does not include a distinct public chapter because that sector is primarily served through local government partnerships (“LGPs”) in MCE’s service area. MCE will continue to expand public-private partnerships (*e.g.* PACE Financing) and collaborate with LGPs to offer innovative approaches. MCE’s SPOC will assist customers in accessing LGP programs that serve public agencies. Where opportunities for leveraging MCE’s other offerings exist (*e.g.* commercial sector offerings), MCE will bundle these offerings with LGP public sector offerings.

²⁹ D.15-10-028 at p. 47.

³⁰ D.15-10-028 at p. 47.

C. Topics in Response to Staff Guidance on Business Plan Filings

The Staff Guidance raises several topics to be addressed in business plan filings. MCE addresses a number of these items below.

1. Coordination with Related Proceedings

The Staff Guidance called for business plans to contain information on various Commission proceedings that relate to EE. These proceedings include (1) Demand Response (“DR”); (2) the Residential Rate Reform proceeding; (3) the Integrated Distributed Energy Resources (“IDER”) proceeding; (4) the Zero Emission Vehicles (“ZEV”) proceeding; and (5) the Energy Savings Assistance Program (“ESAP”).³¹

MCE has its own DR programs that are not part of Commission authorized or funded DR programs. MCE intends for its EE programs to install equipment that is DR-ready when feasible. Further, the SPOC and integrated demand-side resources approach within MCE’s Business Plan will encourage DR participation.

MCE requests the Commission direct Pacific Gas & Electric Company (“PG&E”) to support MCE’s efforts to align various activities related to residential rate reform with MCE’s EE portfolio. The Staff Guidance requested that PAs address their Time of Use (“TOU”) marketing, education, and outreach (“ME&O”) plans, including the ways in which ME&O efforts will align with California Alternate Rates for Energy (“CARE”), California Climate Credit, EE, and DR.³² MCE requires support from PG&E to adequately address these topics when delivering its EE portfolio.

As a CCA, MCE provides electric generation service and not transmission and distribution (“T&D”) service. The T&D service will impact TOU and CARE rates and is

³¹ Staff Guidance at pp. 7-9.

³² Staff Guidance at p. 9.

provided by PG&E for MCE's customers. Similarly, as MCE's billing agent, PG&E issues the California Climate Credit and applies the CARE discount. Unlike MCE, PG&E (1) was required to file a TOU ME&O plan; (2) has received allocations of ratepayer funds to develop TOU rate analysis; and (3) administers Commission-authorized and ratepayer-funded DR programs. PG&E has the tools and information MCE needs to respond to the Staff Guidance. Further, MCE's EE programs can serve both unbundled MCE and bundled PG&E customers. MCE requests the Commission direct PG&E to support MCE's efforts to incorporate these residential rate reform topics within its EE portfolio, including TOU billing analysis.

Progress in the IDER proceeding has been limited to pilots and utility incentives to meet distribution grid needs with distributed energy resources ("DERs") in lieu of traditional investments. MCE's SPOC and Integrated Demand-Side Management approach in the Business Plan support the general goals of the IDER proceeding to integrate the various DERs. This approach will help solve problems that cannot be addressed with siloed program delivery (*e.g.* enrolling a customer in a solar program, in an energy storage program, or on dynamic rates when they have purchased an electric vehicle). MCE will continue to track this proceeding and support an integrated approach to demand-side management and DERs.

MCE does not currently have an application before the Commission related to ZEVs. MCE is engaged in the IOU applications regarding ZEVs and intends to coordinate with PG&E to the extent possible to ensure that MCE customers have an equitable opportunity to take advantage of PG&E's Commission-authorized ZEV programs. MCE's proposed SPOC model intends to support customers that are pursuing ZEVs by helping those customers access complementary resources and select appropriate rate schedules.

MCE is engaged in the ESAP proceeding and recently received approval of its pilot

program from the Commission.³³ MCE’s Low-Income Families and Tenants (“LIFT”) pilot is designed to help eliminate the siloed delivery of general EE programs and the ESAP. The LIFT program will provide additional incentives to income-qualified customers and leverage the same outreach and program delivery as MCE’s general EE programs. MCE’s Multifamily Program has a history of serving a large number of income-qualified customers. MCE’s Business Plan continues to support those customers and its LIFT pilot will enhance MCE’s program delivery.

2. Utility Audit, Finance, and Compliance Branch (“UAFCB”) Auditors Report

The Staff Guidance instructed PAs to identify how PAs’ business plan budgets were derived based on the UAFCB Auditor’s Report recommendations.³⁴ The UAFCB report has not been released. As such, MCE’s Business Plan does not address any UAFCB recommendations.

3. CAISO’s 2016–2017 Transmission Planning Process

Energy Division also instructed PAs to address the California Independent System Operator’s (“CAISO”) transmission planning requirements that identify locations where additional achievable energy efficiency (“AAEE”) is needed.³⁵ The CAISO 2015-2016 Transmission Plan issued on March 28, 2016³⁶ does not identify any locations within MCE’s service area where additional AAEE is relied upon to meet transmission planning requirements. The CAISO has not issued a board approved 2016–2017 Transmission Plan. However, MCE will consider location targeting of EE based on transmission constraints as the plan is finalized. As such, MCE’s Business Plan does not include any needs identified in the CAISO’s 2016–2017 Transmission Plan.

³³ D.16-11-022, OP 147 at p. 492.

³⁴ Staff Guidance at p. 5.

³⁵ Staff Guidance at p. 7.

³⁶ <https://www.aiso.com/planning/Pages/TransmissionPlanning/2015-2016TransmissionPlanningProcess.aspx>.

4. Pilot Programs and the Business Plan

The Staff Guidance calls for a discussion of pilots underway or contemplated for each sector. MCE currently has a handful of pilots either approved or underway including: an On-Bill Repayment (“OBR”) Financing pilot, the LIFT pilot, and a Nest Seasonal Savings pilot. In this filing, MCE is proposing the four downstream statewide pilot programs discussed in Section V below. MCE may pursue additional pilots in the future, especially those that support GHG reductions and IDER. MCE may request funding for additional pilots to test novel approaches and technologies. MCE will propose such pilots via a Tier 2 advice letter to provide Commission staff and stakeholders an opportunity to shape the pilot design, data collection, and Evaluation, Measurement and Verification (“EM&V”) methodology prior to launch. MCE may also issue requests for proposals or utilize other competitive solicitation tools for pilots. MCE is likely to fund some MCE-specific pilots out of its operating revenue and is open to a Commission partnership to share in the costs and benefits for those pilots.

D. Statement of MCE’s Preparedness for Evaluation

MCE designed its portfolio of programs to collect the necessary data and perform adaptive management to ensure effective evaluation of its proposed portfolio. The Commission requires a statement of evaluation “preparedness.”³⁷ The statement relates to: (1) data collection strategies or intervention to ensure ease of reporting; and (2) internal performance analysis during deployment.³⁸ MCE focuses on implementing a greater use of AMI data in on-going program measurement and verification.³⁹ MCE will also utilize the SPOC as an opportunity to

³⁷ D.15-10-028 at pp. 47-48.

³⁸ D.15-10-028 at pp. 47-48.

³⁹ Business Plan at p. 32.

gain real-time feedback from both customers and contractors regarding improved strategies for program implementation, and will implement program improvements in real time, engaging in adaptive management.⁴⁰ Through collecting data and conducting internal performance analysis, MCE is prepared to ensure successful evaluation of its portfolio. The metrics that will be used to gauge success of different program intervention strategies are detailed in the sector chapters in the Business Plan. Each sector chapter in the Business Plan also highlights additional evaluation studies that MCE identifies to test innovative or new intervention strategies.

IV. THE COMMISSION SHOULD ADDRESS PROGRAM OVERLAP BY DESIGNATING MCE AS THE DOWNSTREAM LIAISON AND PROVIDING MCE ATTRIBUTION FOR ENERGY SAVINGS WITHIN ITS SERVICE AREA

This application provides sufficient facts to support the Commission acting to address program overlap between a CCA PA and an IOU PA. The Commission recognizes that program overlap may present challenges, but has declined to address overlap until the factual situation arose in a program, application, or advice letter.⁴¹ The Commission has suggested that overlap may be addressed in a proceeding devoted to a particularized MCE request for funding.⁴² Given that this application proposes expanded program offerings and is devoted to a particularized MCE request for funding, the Commission must now address program overlap between CCAs and IOUs.

MCE proposes a program coordination approach that accommodates the evolving EE landscape as statewide and third-party programs take on new forms. To facilitate these changes and to enable the cost-effective execution of MCE's portfolio, MCE proposes (i) to assume the role of the downstream liaison, and (ii) to receive savings and budget attribution for all programs

⁴⁰ Business Plan at p. 31.

⁴¹ D.14-01-033 at p. 36.

⁴² D.15-08-010 at p. 9.

within MCE's service area.

A. MCE's Role as Downstream Liaison Organizes Overlapping Programs

The role of downstream liaison will require other programs to coordinate with MCE prior to performing outreach to customers in MCE's service area. This coordination will enhance MCE's ability to serve customers as the SPOC for downstream EE programs. MCE is not proposing to provide all outreach activities for non-MCE programs. However, in its role as downstream liaison, MCE will strive to eliminate customer confusion about multiple program offerings and may preclude PG&E third party and other PG&E downstream programs that are duplicative of MCE's offerings from being delivered in MCE's service area. MCE is limiting its ability to preclude duplicative program offerings for statewide and local government programs. MCE's proposal for varied treatment among PAs is based on MCE's experience of productive collaboration with local governments and unproductive collaboration with PG&E.⁴³ MCE recognizes the Commission's efforts to try a new approach to statewide programs, and thus does not propose precluding any statewide programs from being delivered within MCE's service area.

MCE's portfolio acknowledges and accounts for the fact that its service area also overlaps geographically with the Bay Area Regional Energy Network ("BayREN") and certain LGPs. MCE is actively working to avoid duplication and limit overlap of programs by coordinating with BayREN and relevant LGPs. Where overlap is unavoidable, however, MCE will coordinate marketing and outreach with these partners to minimize customer confusion and maximize program uptake. MCE will also coordinate with the statewide ME&O administrator to ensure the role of downstream liaison is adequately considered.

B. Assigning MCE the Role of Downstream Liaison Is a Manageable Solution to Address Overlap with Other PAs

⁴³ MCE's collaboration experience is discussed further in MCE Testimony Chapter 4 Section A.

As discussed above, the Commission should address overlap by designating MCE as the downstream liaison within MCE’s service area. In this role, if MCE precludes a duplicative offering from a PG&E third party program or other PG&E downstream program, that offering may not be delivered in the portion of MCE’s service area.⁴⁴ Such an outcome satisfies the statutory requirement to accommodate the need for broader statewide and regional programs⁴⁵ because statewide programs are not affected and duplicative regional PG&E programs are not eliminated; MCE will administer a local iteration that provides the same services. Additionally, PG&E will not necessarily be displaced from delivering programs in MCE’s service area. PG&E can: (1) administer programs MCE is not administering; and (2) work with MCE to administer programs. MCE is hopeful about future cooperation with third parties and PG&E under its proposal and encourages the Commission to consider adding a component in the Energy Savings Performance Incentive that rewards such collaboration. The Commission should pursue a manageable solution to address program overlap by assigning MCE the role of downstream liaison.

C. MCE’s Role as Downstream Liaison Is Necessary to Accomplish Its Statutory Responsibilities

MCE has the sole statutory responsibility for generation procurement activities for CCA customers.⁴⁶ MCE has procurement responsibility for approximately 83% of the accounts within its service area.⁴⁷ The Legislature and the Commission have recognized EE as a procurement

⁴⁴ Some programs may only be duplicative in subsets of MCE’s service area.

⁴⁵ Cal. Pub. Util. Code § 381.1(f)(3).

⁴⁶ “A community choice aggregator shall be solely responsible for all generation procurement activities on behalf of the community choice aggregator’s customers, except where other generation procurement arrangements are expressly authorized by statute.” Cal. Pub. Util. Code § 366.2(a)(5).

⁴⁷ The other CCAs currently operating in California are similarly dominant in their service areas with a 20% or lower opt-out rate.

resource and placed it at the top of the Loading Order.⁴⁸ Thus, the statutorily-required role of MCE in electricity procurement within its service area supports MCE serving as the downstream liaison within its service area for EE, the first procurement resource in the Loading Order.

D. MCE Should Receive Attribution for All Savings from Statewide and Downstream Programs within Its Service Area

Attribution of all savings for statewide and downstream programs within its service area will enable MCE to maintain a cost-effective portfolio. The Commission appropriately authorized all contributing PAs to share the savings attribution for upstream and midstream activities carried out through statewide programs.⁴⁹ MCE (1) seeks clarification about the attribution for statewide programs; and (2) proposes to receive attribution of all savings from statewide and downstream program activities within MCE’s service area.

MCE seeks to clarify that CCA PAs are eligible to fund and receive savings attribution for statewide programs. When revising the rules for statewide programs, the Commission discussed a role for CCAs to (1) administer;⁵⁰ (2) fund;⁵¹ and (3) receive savings attribution.⁵² However, the Commission inadvertently referred exclusively to utilities when this discussion was translated into an order.⁵³ Further, it would be incongruous to allow a CCA to administer a

⁴⁸ § 454.5(b)(9)(C) indicates: “[t]he electrical corporation shall first meet its unmet resource needs through all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible.” *See also* State of California Energy Action Plan I, 2003 at p. 4 (defining a loading order with energy efficiency as the primary resource); and the Energy Efficiency Policy Manual at p. 1 (noting energy efficiency is a procurement resource and first in the loading order).

⁴⁹ D.16-08-019 at pp. 55-56.

⁵⁰ “[T]he lead administrator need not necessarily be a utility....” D.16-08-019 at p. 53.

⁵¹ “But this does not mean that the other program administrators, particularly the utilities and CCAs whose customers will be contributing funding for the program, do not have an important role.” D.16-08-019 at p. 54.

⁵² “[T]he energy savings will be apportioned to all contributing administrators based on actual customer participation.” D.16-08-019 at p. 55.

⁵³ “The budget for each statewide program in each utility territory shall be counted toward the

statewide program but not fund or receive savings attribution for that same program. MCE requests that the Commission clarify its intent for CCA PAs to be able to fund and receive savings attribution for statewide programs.

MCE proposes to receive attribution of savings and provide funding for all statewide programs and other downstream program activities within MCE's service area. The Commission has not determined how statewide program savings would be attributed between a CCA and an IOU. PG&E has refused to engage in a dialogue with MCE about attribution of statewide programs. MCE requests the Commission attribute all savings achieved in MCE's service area through statewide programs and downstream programs to MCE. MCE's limited geographic range substantially limits its ability to administer a balanced and cost-effective portfolio. MCE's service area is heavily comprised of residential and small-to-mid sized commercial customers. These customer segments are historically among the least cost-effective to serve, especially with comprehensive programs. Competing programs in MCE's service area compound this challenge by increasing the marketing and outreach dollars necessary to reach customers and fragmenting already limited savings opportunities between multiple PAs. MCE requests attribution of savings for all statewide and downstream program activity within its service area to administer a cost-effective portfolio.

MCE acknowledges that a portion of its budget will be used to support these program activities for which MCE will receive attribution. At the time of this filing, MCE does not have the necessary information to incorporate exact budget figures for the statewide programs. MCE anticipates that a portion of the requested budget would go towards these statewide activities.

cost-effectiveness of each utility's energy efficiency portfolio and each utility shall be given energy savings and Energy Savings Performance Incentive credit consistent with their customers' funding and program participation." D.16-08-019, OP 7 at p. 110.

MCE will remain engaged with the other PAs in the development of statewide program budgets and will request MCE's portion for these programs in its September 1 annual budget advice letter following approval of this application. MCE requests that the Commission direct PG&E to collaborate with MCE to determine the appropriate portion of budget that should be covered by MCE.

MCE requests that downstream program attribution and funding be consistent with the approach for statewide programs. The Commission has directed each PA to contribute funding and receive attribution for the statewide programs based on customer participation.⁵⁴ While MCE's forecasted budgets in the Business Plan include funding to support downstream programs within MCE's service area, MCE will need to compare against actual program activity to further refine budget estimates. MCE will utilize data (*e.g.* 2016 savings claims) to estimate the participation in downstream programs in its service area and will request a commensurate budget in its September 1 annual budget advice letter to support all downstream activity within its service area.

E. Designating MCE as the Downstream Liaison and Providing MCE with Attribution of All Savings Ensures Equity and Cost Effectiveness

The Commission can and should restrict program overlap between CCA PAs and IOU PAs to ensure equity and cost-effectiveness of EE programs.⁵⁵

Allowing overlap between MCE's offerings and PG&E's offerings can lead to inequity. First, IOUs have advantages over CCAs that prevent competitive neutrality, including a broader

⁵⁴ D.16-08-019 at pp. 54-56.

⁵⁵ "The commission may order an adjustment to the share of energy efficiency program activities directed to a community choice aggregator's territory if necessary to ensure an equitable and cost-effective allocation of energy efficiency program activities." Cal. Pub. Util. Code § 381.1(c).

geographic service territory with greater opportunities for high-TRC ratio projects⁵⁶ as well as access to more customer data (e.g. prior participation data).⁵⁷

Second, inequitable results can arise in the context of program shopping. PG&E employs account representatives that receive financial incentives for referring customers to PG&E's EE programs, instead of the program that best suits a customer's needs. Multiple programs serving the same customers also present challenges for implementing distinct program strategies because they allow customers to shop among programs for the highest incentives. This dynamic undermines the potential for MCE's customer transformation strategy to reduce costs as customers are transformed. Customers may simply choose MCE's program in early years due to relatively high incentives and choose PG&E's program in later years as MCE's incentives decline. Overlapping programs also reduce cost-effectiveness because multiple PAs devote resources to reaching the same projects. These challenges create equity and cost effectiveness concerns that should be alleviated by assigning MCE the role of downstream liaison.

Instead of pitting PAs against each other, the Commission should encourage partnerships between MCE and PG&E. These partnerships should reward PG&E for meaningful collaboration with MCE tied to referrals and data sharing related to program participation. Such partnerships should include incentives paid to IOU account representatives for supporting participation in MCE programs. Establishing MCE as the downstream liaison and providing incentives to collaborate will encourage more effective cooperation between MCE and PG&E while minimizing equity and cost effectiveness concerns related to overlapping programs. Table

⁵⁶ This is due to factors such as generally hotter climate zones and a greater proportion of larger industrial and commercial customers.

⁵⁷ The IOUs have access to all prior program participation for customers within their service area. This allows the IOU to understand which customers have participated in which programs, improving their ability to target customers.

1 below provides a summary of information about how the role of downstream liaison and savings attribution will be coordinated with multiple types of PAs.

Table 1: Coordination in MCE’s Role as Downstream Liaison and with Savings Attribution

	Required to Coordinate with MCE Prior to Outreach	MCE has Authority to Preclude Duplicative Offerings	100% Savings Attribution for Activities within MCE Service Area	100% Budget Attribution for Activities within MCE Service Area
Upstream & Midstream Statewide Programs	No	No	Yes	Yes
Downstream Statewide Programs	Yes	No	Yes	Yes
Third Party Programs	Yes	Yes	Yes	Yes
Other IOU Downstream Programs	Yes	Yes	Yes	Yes
REN Programs	Yes	No	Yes	Yes
LGP Programs	Yes	No	Yes	Yes

V. THE COMMISSION SHOULD APPROVE MCE’S PROPOSED STATEWIDE DOWNSTREAM PILOTS

MCE also proposes and seeks approval of four statewide downstream pilot programs as part of this filing as the Commission requires.⁵⁸ MCE includes the details of the pilots in the application and testimony, as opposed to within the Business Plan, because the PAs did not reach consensus and so could not include a single proposal. If MCE’s recommended pilots are approved, MCE will work with the other PAs to develop common language to include as an attachment in all the PAs’ business plans.

MCE proposes four statewide downstream pilot programs: (1) a Consolidated

⁵⁸ D.16-08-019, at p. 65, and OP 9 at p. 111.

Workpaper Development Pilot Program;⁵⁹ (2) a Transparent Deemed Savings Development Pilot Program;⁶⁰ (3) a Consistent Normalized Metered Energy Consumption (“NMEC”) Methodology Pilot Program;⁶¹ and (4) a Statewide Data Support Pilot Program.⁶² All of these programs enable MCE’s favored SPOC approach for a consistent and efficient customer interface.

The IOUs will each likely propose in their business plans four discrete downstream programs to be piloted on a statewide basis. However, MCE’s proposed programs cut across all other downstream programs, will ensure greater consistency throughout the state, and reduce overall administrative costs. The Commission should approve these cross-cutting programs designed to positively impact numerous other downstream programs as they are fundamentally different from and superior to the more narrowly focused programs the IOUs will propose.

The Commission ordered PAs to pilot a statewide approach for four separate downstream programs.⁶³ In doing so, the Commission recognized the benefit of statewide programs run under a lead administrator to ensure consistency throughout the state.⁶⁴ Furthermore, the Commission opined that downstream programs would benefit from having “a consistent set of program rules, documentation requirements, savings measurement

⁵⁹ This program would be administered by PG&E and would consolidate the development of all workpapers for all PAs into one program.

⁶⁰ This program would be administered by Southern California Edison Company (“SCE”) and would replace the existing process for developing deemed values to establish a more transparent process.

⁶¹ This program would be administered by San Diego Gas & Electric Company (“SDG&E”) and would develop and maintain a consistent approach for NMEC to cost-effectively support the use of existing conditions baselines as called for by Assembly Bill 802 (2015).

⁶² This program would be administered by Southern California Gas Company (“SoCalGas”) and would develop a common data platform for all PAs to support statewide program administration, enable EM&V activities across multiple PAs, and other benefits.

⁶³ See D.16-08-019, mimeo at 65, 111 (Ordering Paragraph No. 9).

⁶⁴ D.16-08-019 at p. 53.

requirements, etc....”⁶⁵ and that the downstream pilots should “test the use of common elements even with regional or local variations.”⁶⁶ In ordering the downstream approaches, the Commission called for a “statewide administration framework even though individual program participation activities would still occur at a local level.”⁶⁷

MCE’s proposed workpaper program, the deemed measure program, and the NMEC methodology program support the statewide creation of a consistent set of rules, documentation requirements, and savings measurement requirements. Each of these programs, in addition to the Statewide Data Support Program, also provide a statewide framework and allow for individual program participation activities to occur at a local level, with regional or local variations. Thus, these programs are consistent with the Commission’s direction for the statewide downstream pilots.

In addition, MCE’s proposed pilot programs have four additional benefits that will not be found in the IOUs’ proposals. First, MCE’s programs preserve the ability to locally tailor the downstream customer interface because they pilot common approaches and elements that exist within other downstream programs. Second, MCE’s programs have the potential to greatly reduce administrative costs associated with each PA undertaking these activities individually. Third, MCE’s programs reduce the challenge of coordinating statewide and non-statewide customer-facing offerings that may result in siloed delivery and multiple customer touches. Fourth, program delivery for implementers will be more consistent across PA service areas. These advantages over the IOU programs are substantial and the Commission should authorize MCE’s proposed statewide downstream pilot programs.

⁶⁵ D.16-08-019 at p. 59.

⁶⁶ D.16-08-019, Conclusion of Law 52 at p. 104.

⁶⁷ D.16-08-019, Ordering Paragraph 9 at p. 111.

VI. THE COMMISSION SHOULD AUTHORIZE A THRESHOLD FOR BUDGET INCREASES BASED ON THE INCLUSION OF NEW COMMUNITIES WITHIN MCE'S SERVICE AREA

CCAs have the potential to include new communities within their service area at any time.⁶⁸ MCE's Business Plan includes a service area map, budget, and market characterization based on its existing communities. The Commission's recent decision created a new budget process under the rolling portfolio framework.⁶⁹ The new process uses annual budget advice letters to request the actual authorized budget consistent with an approved business plan, while the business plan is intended to provide a general sense of the budget supported by program strategies.⁷⁰ If a budget increase is deemed too large to be consistent with an approved business plan, the plan will need to be updated before the budget increase can be approved. MCE anticipates that including new communities will generally not require a reconsideration of the logic or fundamental approach articulated in its Business Plan. However, updating the Business Plan to reflect a newly included community would require considerable administrative work through an application filing and a resulting proceeding.

MCE recommends that the Commission develop a rule to avoid the administrative costs associated with such an application. MCE proposes a threshold of 50% for budget increases based on inclusion of new communities without the need to update the Business Plan. To request such an increase, MCE will submit a Tier 2 advice letter specifying the additional funding, including a description of the activities that will be funded, and providing an updated cost

⁶⁸ In 2015, additional communities joined MCE's service area including unincorporated Napa County and the cities of San Pablo, Benicia, and El Cerrito. As a result of this expansion, MCE served approximately 30% more customers compared to 2014. In 2016, MCE included Walnut Creek, Lafayette, and the cities and towns in Napa County, resulting in approximately 40% more customers than were served in 2015.

⁶⁹ D.15-10-028 at pp. 54-57.

⁷⁰ D.15-10-028 at pp. 55-56.

effectiveness assessment. MCE will also maintain an updated implementation plan that provides a current service area map with associated market characterization information to reflect any new communities, similar to what is included in the Business Plan for existing communities.⁷¹ The proposed threshold will reduce administrative costs because it will avoid the need for MCE to prepare and for the Commission to review a new business plan application each time a new community is included in MCE's service area. This is particularly useful if the logic and fundamental approach of the business plan does not change. The Commission should address the budget impacts of CCA service area growth by approving this threshold and a Tier 2 advice letter process to request budget increases for new community inclusion.

VII. THE COMMISSION SHOULD DIRECT PG&E TO MODIFY THE GAS FUNDING CONTRACT WITH MCE TO REDUCE UNNECESSARY COMPLEXITY AND ADMINISTRATIVE BURDENS

The Commission should direct PG&E to amend the terms of the gas funding contract with MCE to simplify the gas funding processes by aligning it with the electric funding process. The Commission directed PG&E to enter into a contract with MCE to provide gas funding that is modeled after the contract PG&E has with BayREN.⁷² The Commission also directed PG&E to provide a high level of deference to MCE on the terms of this contract.⁷³ MCE requests that the Commission further direct PG&E to amend the terms of this contract to align it with the process by which MCE receives electric funds. The Commission should direct PG&E to revise the gas funding contract within 60 days of the approval of MCE's Business Plan.

MCE receives electric funds in quarterly installments from PG&E based on MCE's

⁷¹ Business Plan at pp. 21-27.

⁷² D. 14-10-046 at p. 119.

⁷³ D.14-10-046 at p. 119.

approved budget.⁷⁴ MCE specifies all unspent electric funds each year in an advice letter filing.⁷⁵ This unspent funds advice letter is used to offset the quarterly installments from PG&E in the following year.⁷⁶ This process is simple, functional, and administratively efficient.

The gas funding contract requires MCE to invoice PG&E on a monthly basis for expenditures. These invoices are approved both by PG&E and by Energy Division staff. PG&E subsequently transfers the invoiced gas funds to MCE. This process is functional, but involves unnecessary administrative burdens from the invoicing process and introduces complexity that the Commission should eliminate.

The complexity resulting from different treatment of gas and electric funds is unnecessary and should be eliminated. The complexity involves accounting and budget presentment, particularly in the unspent funds advice letter. Since MCE receives electric funds from PG&E prior to making expenditures but receives gas funds after making expenditures, only the unspent electric funds are available to offset future budget transfers. This complexity is unnecessary and should be avoided through amending the gas funding process to align with the electric funding process.

VIII. STATUTORY AUTHORITY AND COMPLIANCE WITH THE COMMISSION'S RULES OF PRACTICE AND PROCEDURE

A. Statutory Authority – Cal. Pub. Util. Code § 381.1(a)-(d)

MCE is applying to administer EE programs under the authority granted in Cal. Pub. Util. Code § 381.1(a)-(d).

B. Categorization – Rule 2.1(c)

MCE proposes that this application be categorized as a “ratesetting” proceeding under

⁷⁴ D.14-10-046, Ordering Paragraph 24 at pp. 167-168.

⁷⁵ D.14-10-046, Ordering Paragraph 25 at p. 168.

⁷⁶ D.14-10-046, Ordering Paragraph 24 at pp. 167-168.

Rule 7.1(e)(2) because it does not clearly fit into any of the categories as defined by Rules 1.3(a), 1.3(d), and 1.3(e).

MCE's application does not meet the definition of adjudicatory in Rule 1.3(a) because it is neither an enforcement investigation nor a complaint.

MCE's application does not clearly fit the definition of quasi-legislative under Rule 1.3(d) because it has components specific to MCE. The specific components include the request for funding for MCE's own programs. Since this application contains components other than quasi-legislative, it is not clearly a quasi-legislative proceeding under Rule 1.3(d).

EE applications filed by IOUs generally meet the definition of "ratesetting" in Rule 1.3(e) because the Commission approves rates for each IOU to collect funds to pay for the EE programs. However, the Commission does not set rates via a CCA application because CCAs are not in the role of revenue collection for Commission-authorized EE programs.⁷⁷ A CCA EE application has a ratesetting impact.⁷⁸ But the CCA application does not actually involve the Commission setting rates and thus is not a ratesetting application under Rule 1.3(e).

MCE proposes that this application be categorized as a "ratesetting" proceeding under Rule 7.1(e)(2) because it does not clearly fit into any of the categories as defined by Rules 1.3(a), 1.3(d), and 1.3(e).

C. Need for Hearing - Rule 2.1(c)

MCE has endeavored to provide a sufficient record via the application materials to obviate the need for evidentiary hearings. MCE does not recommend hearings at this time. If the need for hearings arises, MCE requests that the resulting hearing schedule allow the Commission

⁷⁷ "For example, PG&E, not [MCE], collects the money that funds the EE programs that [MCE] administers." D.14-01-033 at p. 17.

⁷⁸ IOUs may use CCA applications to determine the rate changes they propose in their own applications.

to render a final decision on this application with sufficient time to start implementing the Business Plan at the start of 2018. MCE's proposed schedule is set forth in section VIII.E, below.

D. Issues to be Considered – Rule 2.1(c)

MCE's application requests the Commission approve MCE's Business Plan to enable MCE to successfully provide a comprehensive EE portfolio to its communities. MCE also requests the Commission take action to address the following issues.

- The Commission should approve MCE's proposal for four statewide downstream pilot programs in lieu of approving the IOUs' statewide downstream pilot proposal.
- The Commission should direct PG&E to support MCE's efforts to address residential rate reform topics within its EE portfolio, including TOU billing analysis.
- The Commission should address program overlap by (1) designating MCE as the downstream liaison within its service area; and (2) providing MCE attribution for all savings from statewide and downstream programs in MCE's service area.
- The Commission should clarify that CCAs are eligible to fund and receive savings attribution from statewide programs.
- The Commission should direct PG&E to collaborate with MCE to determine the appropriate portion of budget that should be covered by MCE for statewide programs.
- The Commission should consider adding a component in the Energy Savings Performance Incentive that rewards PG&E for collaboration with MCE's programs.

- The Commission should adopt a threshold of 50% for budget increases for CCA funding based on inclusion of new communities utilizing a Tier 2 advice letter and avoid the need to update a business plan via an application filing.
- The Commission should direct PG&E to amend the terms of the gas funding contract with MCE to simplify the gas funding processes by aligning it with the electric funding process within 90 days of MCE’s Business Plan being approved.

E. Proposed Schedule – Rule 2.1(c)

MCE proposes the following schedule for consideration of its application:

File Application	January 17, 2017
Protests Due	February 16, 2017
Reply to Protests	February 28, 2017
Prehearing Conference	March 7, 2017
Scoping Memo	March 15, 2017
Opening Comments	March 31, 2017
Reply Comments	April 7, 2017
Proposed Decision	May 8, 2017
Opening Comments on Proposed Decision	May 29, 2017
Reply Comments on Proposed Decision	June 5, 2017
Final Decision	June 2017

MCE notes that intervenor testimony, rebuttal testimony, and briefing are not included in this schedule because they did not appear necessary for the 2013–2014 applications.⁷⁹ Additionally, this application serves a different purpose under the rolling portfolio framework from prior applications. This application requests approval of MCE’s high level strategies and a general budget as opposed to a specific authorized budget with specific implementation plans.

⁷⁹ A.12-07-001 et al.

MCE anticipates that applications under a rolling portfolio framework can be resolved more expediently than prior EE applications. However, MCE understands the need for additional testimony and briefing may arise and necessitate a deviation from the proposed schedule.

F. Legal Name and Principal Place of Business – Rule 2.1(a)

The legal name of the Applicant is Marin Clean Energy. MCE’s principal place of business is San Rafael, California. Its address is 1125 Tamalpais Avenue, San Rafael, CA 94901. MCE is a joint powers authority formed under the laws of California.

G. Correspondence and Communication Regarding This Application - Rule 2.1.(b)

All correspondence and communications regarding this application should be addressed to:

Michael Callahan
Regulatory Counsel
Marin Clean Energy
1125 Tamalpais Avenue
San Rafael, California, 94901
Telephone: (415) 464-6045
Fax: (415) 459-8095
E-mail: mcallahan@mcecleanenergy.org

Martha Serianz
Legal Operations Manager
Marin Clean Energy
1125 Tamalpais Avenue
San Rafael, California, 94901
Telephone: (415) 464-6043
Fax: (415) 459-8095
E-Mail: mserianz@mcecleanenergy.org

H. Articles of Incorporation – Rule 2.2

MCE is a community choice aggregator operating as a joint powers authority (“JPA”) organized under California law. MCE commenced operations as a JPA on December 19, 2008. MCE is engaged in the provision of electric generation services under the authority granted in Code § 366.2 and EE programs under the authority granted in Code § 381.1. A copy of MCE’s current Amended Joint Powers Agreement, executed April 21, 2016 is available on MCE’s website.⁸⁰

⁸⁰ As of the date of this filing, the most recent Joint Powers Agreement is available at <https://www.mcecleanenergy.org/wp-content/uploads/2016/06/JPA-Agreement-with-Amendment-10-on-4.21.16-24-Communities.pdf>.

I. Rule 3.2 Requirements

The Rule 3.2 requirements do not apply to this application because MCE does not request authority to increase rates or to implement changes that would result in increased rates. IOU's perform revenue collection for EE programs and typically provide the materials called for under Rule 3.2 in their EE applications. As discussed above in Subsection VIII.B (Categorization - Rule 2.1(c)), MCE is not in a position of revenue collection for EE programs. Thus it is inappropriate for MCE to propose specific rate changes related to this application. The only information called for under Rule 3.2 that MCE can feasibly provide is not meaningful to a ratesetting decision in the context of EE programs. Therefore, it is unreasonable to impose the requirements of Commission Rule 3.2 on this application.

J. Notice and Service of Application

A copy of the application and Notice of Availability of supporting documents are being served on the parties of record in R.13-11-005, Commissioner Peterman, and Administrative Law Judge Fitch.

K. List of Supporting Documents

MCE includes several documents to support this application. The separate Notice of Availability served concurrently with this application will include links to the following documents:

- Testimony of Marin Clean Energy Regarding its Application for Approval of its Energy Efficiency Business Plan
- Marin Clean Energy Efficiency Business Plan
- California Energy Efficiency Coordinating Committee ("CAEECC") Issue Tracker with MCE Responses to Issues

IX. REQUEST FOR COMMISSION ORDERS

MCE respectfully requests the Commission approve this application in its entirety by issuing the following orders:

- 1) Approve MCE's Business Plan.
- 2) Approve MCE's proposal for four statewide downstream pilot programs in lieu of approving the IOUs' statewide downstream pilot proposal.
- 3) Direct PG&E to support MCE's efforts to address residential rate reform topics within its EE portfolio, including TOU billing analysis.
- 4) Address program overlap by (i) designating MCE as the downstream liaison within its service area; and (ii) providing MCE attribution for all savings from statewide and downstream programs in MCE's service area.
- 5) Clarify that CCAs are eligible to fund and receive savings attribution from statewide programs.
- 6) Direct PG&E to collaborate with MCE to determine the appropriate portion of budget that should be covered by MCE for statewide programs.
- 7) Consider adding a component in the Energy Savings Performance Incentive that rewards PG&E for collaboration with MCE's programs.
- 8) Adopt a threshold of 50% for budget increases for CCA funding based on inclusion of new communities utilizing a Tier 2 advice letter process and avoid the need to update a business plan via an application filing.
- 9) Direct PG&E to amend the terms of the gas funding contract with MCE to simplify the gas funding process by aligning it with the electric funding process within 90 days of MCE's Business Plan being approved.

X. CONCLUSION

MCE respectfully requests the Commission expeditiously approve this application.

Respectfully Submitted,

Michael Callahan

By: /s/Michael Callahan
Michael Callahan

Regulatory Counsel
Marin Clean Energy
1125 Tamalpais Avenue
San Rafael, CA 94901
Telephone: (415) 464-6045
Facsimile: (415) 459-8095
E-Mail: mcallahan@mceCleanEnergy.org

January 17, 2017

VERIFICATION

I, the undersigned, say:

I am an officer of Marin Clean Energy, a Community Choice Aggregator, and am authorized to make this verification on its behalf. The statements in the foregoing *Application of Marin Clean Energy for Approval of Its Energy Efficiency Business Plan* are true of my own knowledge, except as to matters which are therein stated on information or belief, and as to those matters I believe them to be true.

I declare under penalty of perjury that the foregoing is true and correct. Executed on January 13, 2017, at San Rafael, California.



Name: Dawn Weisz, Chief Executive Officer

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

In the Matter of the Application of Marin Clean
Energy for Approval of the 2016 Energy Efficiency
Business Plan.

Application 15-10-014
(Filed October 27, 2015)

**MARIN CLEAN ENERGY
MOTION TO WITHDRAW APPLICATION 15-10-014**

Michael Callahan
Regulatory Counsel
MARIN CLEAN ENERGY
1125 Tamalpais Ave.
San Rafael, CA 94901
(415) 464-6045
mcallahan@mceCleanEnergy.org

January 18, 2017

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

In the Matter of the Application of Marin Clean
Energy for Approval of the 2016 Energy Efficiency
Business Plan.

Application 15-10-014
(Filed October 27, 2015)

**MARIN CLEAN ENERGY
MOTION TO WITHDRAW APPLICATION 15-10-014**

Pursuant to Rule 11.1 of the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), Marin Clean Energy (“MCE”) respectfully requests that the Commission grant MCE’s request to withdraw the Application of Marin Clean Energy for Approval of the 2016 Energy Efficiency Business Plan (“Application”) and close this proceeding.

I. INTRODUCTION

MCE filed the Application on October 27, 2015 to request approval of its energy efficiency (“EE”) business plan. Since filing the business plan, the Commission issued Decision (“D.”) 16-08-019, which directed MCE to file a business plan on January 15, 2017 concurrently with other program administrators (“PAs”).¹ MCE has revised its business plan and intends to file it consistent with D.16-08-019 and launch a new application proceeding. Accordingly, MCE requests the Commission allow MCE to withdraw the previously filed business plan and close this proceeding.

¹ D.16-08-019, Ordering Paragraph 2 at p. 109.

II. BACKGROUND

The Commission is transitioning to a ten-year rolling portfolio framework for EE programs.² The Commission anticipates the rolling portfolio framework will reduce market barriers and transaction costs from the increased certainty of long-term funding, while also balancing the need for appropriate stewardship of ratepayer funds.³ The Commission originally intended to invite PAs to file rolling portfolio applications in 2015.⁴ However, in D.15-10-028 the Commission deferred the business plan filing and directed PAs to file their initial rolling portfolio applications no later than September 1, 2016.⁵

Consistent with the requirements of D.15-10-028, MCE filed a business plan within the Application on October 27, 2015.⁶ MCE's 2015 business plan proposed a broader set of programs than MCE's current authorized program activities. The application was filed to launch new programs that would assist MCE in administering a more cost effective EE portfolio. Additionally, MCE sought to receive clarity on a number of time-sensitive policy issues affecting administration and planning of EE programs, such as program overlap and CCA service area growth.⁷ Finally, MCE hoped to begin early implementation of its business plan so its expanded programs could begin serving customers immediately. The Commission held a prehearing conference on MCE's application on February 1, 2016,⁸ but no scoping memo was issued, and no further action was taken by the Commission.

² Phase II of R.13-11-005.

³ Order Instituting Rulemaking Concerning Energy Efficiency Rolling Portfolios, Policies, Programs, Evaluation, and Related Issues, R.13-11-005 at p. 8-9.

⁴ D.14-10-046 at p. 31.

⁵ D.15-10-028 at p. 46.

⁶ A.15-10-014, Application of Marin Clean Energy to for Approval of the 2016 Energy Efficiency Business Plan.

⁷ See A. 15-10-014 at p. 2.

⁸ Email Ruling Regarding Prehearing Conference (PHC) Statements for February 1, 2016 PHC, January 19, 2016.

Since MCE's 2015 business plan filing, several developments have occurred that require MCE to revise the original business plan. The Commission issued D.16-08-019, which directed MCE to file a business plan on January 15, 2017 concurrently with other PAs⁹ and also made a number of policy changes, including changes to the rules for statewide and third party programs. In May 2016, Commission Staff issued additional guidance on the Business Plan filings.¹⁰ Finally, the California Energy Efficiency Coordinating Committee ("CAEECC")¹¹ launched in early 2016 and provided regular stakeholder input to the PAs regarding business plan content. MCE's revised 2017 business plan incorporates the new direction and feedback received since MCE originally filed in 2015.

III. THE COMMISSION SHOULD GRANT MCE'S REQUEST TO WITHDRAW ITS PREVIOUSLY FILED BUSINESS PLAN AND CLOSE A.15-10-014.

In order to move forward with the 2017 business plan, MCE requests the Commission grant MCE's request to withdraw the Application and close this proceeding. MCE will file its revised 2017 business plan within an application on January 17, 2017 consistent with D.16-08-019¹² and is filing this motion concurrently.

⁹ D.16-08-019, Ordering Paragraph 2 at p. 109.

¹⁰ Energy Efficiency Rolling Portfolio Business Plan Guidance. May 2, 2016. Available at http://media.wix.com/ugd/0c9650_17039cf0febd483ca48440bb6ef41d66.pdf.

¹¹ CAEECC is a stakeholder forum created in response to direction in D.15-10-028 that includes representatives from each PA, Commission Staff, and interested stakeholders from throughout the state.

¹² D.16-08-019, Ordering Paragraph 2 at p. 109.

IV. CONCLUSION

MCE thanks Commissioner Peterman and Administrative Law Judge Fitch for their thoughtful consideration of this motion. For the reasons stated herein, MCE respectfully requests the Commission grant MCE's motion to withdraw A.15-10-014 and close this proceeding.

Respectfully submitted,

/s/ Michael Callahan

Michael Callahan

Regulatory Counsel

MARIN CLEAN ENERGY

1125 Tamalpais Ave.

San Rafael, CA 94901

(415) 464-6045

mcallahan@mceCleanEnergy.org

January 18, 2017

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Develop a
Successor to Existing Net Energy Metering Tariffs
Pursuant to Public Utilities Code Section 2827.1,
and to Address Other Issues Related to Net Energy
Metering

Rulemaking 14-07-002
(Filed July 10, 2014)

**COMMENTS OF MARIN CLEAN ENERGY
ON ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT ON
CONSUMER PROTECTION AND RELATED ISSUES**

C.C. Song
Regulatory Analyst
MARIN CLEAN ENERGY
1125 Tamalpais Avenue
San Rafael, CA 94901
Telephone: (415) 464-6018
Facsimile: (415) 459-8095
E-Mail: csong@mceCleanEnergy.org

January 24, 2017

TABLE OF CONTENTS

I. Introduction	1
II. Background.....	2
III. Response of MCE	3
A. Question 1: What are the most important consumer protection issues that NEM successor tariff customers face now, or are likely to face in the future?	3
B. Question 2: Which issues identified in Question 1 could most effectively be addressed through an information packet for potential NEM customers? Why?	5
C. Question 3: Which issues identified in Question 1 do not lend themselves to being effectively addressed through an information packet for potential NEM customers? Why not?	6
D. Question 4: What entity or entities should be responsible for preparing an information packet? Please explain why that entity is appropriate for this task.	6
E. Question 5: What entity or entities should be responsible for providing any information packet to potential NEM customers?.....	6
F. Question 11: For issues identified in your response to Question 3 that could not most effectively be addressed through an information packet, what requirements, if any, should the Commission put in place?	7
IV. Conclusion.....	8

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Develop a
Successor to Existing Net Energy Metering Tariffs
Pursuant to Public Utilities Code Section 2827.1,
and to Address Other Issues Related to Net Energy
Metering

Rulemaking 14-07-002
(Filed July 10, 2014)

**COMMENTS OF MARIN CLEAN ENERGY
ON ADMINISTRATIVE LAW JUDGE’S RULING SEEKING COMMENT ON
CONSUMER PROTECTION AND RELATED ISSUES**

I. INTRODUCTION

Pursuant to the directions set forth in the *Administrative Law Judge’s Ruling Seeking Comment on Consumer Protection and Related Issues* (“Ruling”) issued on December 8, 2016, Marin Clean Energy (“MCE”) respectfully submits the following comments. MCE’s comments focus on consumer protection issues specific to customers of Community Choice Aggregators (“CCAs”).

CCAs’ Net Energy Metering (“NEM”) customers receive generation service from CCAs, while Investor-Owned Utilities (“IOUs”) continue to provide distribution, transmission, and billing services to those customers. The bills received by CCA NEM customers contain inconsistent or erroneous information, and CCAs do not have access to the billing agents to correct the information on the customers’ bills. As a result, even while MCE’s rates are more beneficial to NEM customers than PG&E’s rates, the opt-out rate from CCAs is higher for NEM customers than for non-NEM customers. Based on MCE’s estimate, MCE’s service area-wide opt-out rate is 17%, while its NEM customer opt-out rate is 26%.

These issues deserve the attention of the Commission as CCAs continue to grow, resulting in more NEM customers experiencing confusion related to their bills. MCE recommends that the Commission hold a workshop where representatives from CCAs can present various challenges faced by CCAs, as well as potential solutions to these problems. The workshop should be accompanied by formal comments and reply comments, and the Commission can then determine procedural next steps to resolve these challenges.

II. BACKGROUND

MCE was the first operational CCA within California. MCE's customers receive generation services from MCE, and receive transmission, distribution, billing and other services from PG&E. MCE currently provides generation service to approximately 250,000 customer accounts throughout Marin County, Napa County, and the cities of Richmond, San Pablo, El Cerrito, Benicia, Lafayette, and Walnut Creek. Approximately 80% of MCE's customers are residential customers.

MCE's Net Energy Metering ("NEM") program is designed to support and encourage local rooftop solar installations. MCE's NEM program was launched when MCE began serving customers in 2010. In July 2016, MCE completed its fifth annual cash out process for rooftop solar customers, offering over \$1 million in check payments to purchase 3,000 of its NEM customers' excess solar energy at premium retail rates, one cent more than PG&E's offering. Existing CCAs, such as Sonoma Clean Power ("SCP"), Lancaster Choice Energy ("LCE"), and Peninsula Clean Energy ("PCE") also offer higher NEM incentives than their affiliated IOUs.

MCE is aware of at least half a dozen CCA programs in various stages of formation. In a voting meeting of the California Public Utilities Commission ("Commission") in 2016, Commissioner Peterman noted that she had heard a wide range of estimates for CCA adoption,

including an estimate that anticipates 60% of the generation load in the state to be served by CCAs in 2030.¹ The Commission has also announced a CCA En Banc hearing on February 1, 2017 to address regulatory questions related to the growth of CCAs in California.²

III. RESPONSE OF MCE

A. Question 1: What are the most important consumer protection issues that NEM successor tariff customers face now, or are likely to face in the future?

IOUs are required to continue to provide billing services to CCA customers, and CCAs cannot provide customers with separate generation bills.³ Currently, CCA NEM customers receive bills that contain inconsistent or false information about their NEM charges and credits, despite having paid for the service through the non-generation portion of their bills. CCAs' lack of access to the billing agents used by the IOUs limits the CCAs' ability to participate in the IOUs' annual true-up process for NEM customers, and does not allow CCAs to provide adequate information on NEM credits, charges, and expected generation true-up.

MCE has attached two redacted MCE NEM customer bills to its comments. Attachment A is an example of a typical residential NEM customer's bill, and Attachment B is a bill of a residential NEM customer with a fairly robust solar system. MCE's comments on specific billing issue examples are highlighted in yellow.

On the fourth page of Attachment A, the axes of the graphs are not properly labeled to reflect NEM charges and credits. The cumulative NEM balance by month also does not align with

¹ July 14, 2016 Commission Voting Meeting at 1:47, available at: http://www.adminmonitor.com/ca/cpuc/voting_meeting/20160714/. See also E&E News, "Meet the latest disruption for utilities: community power," June 9, 2016, available at: <http://www.eenews.net/stories/1060038517>.

² See the Commission's Daily Calendar: <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M171/K499/171499613.PDF>

³ Public Utilities Code Section 366.2(c)(9).

the information provided on page seven of the bill. On page seven, the summary shows that the customer's NEM credit balance is \$0.00, whereas the last data point on the graph titled Cumulative NEM Balance by Month has a value between \$160 and \$240.

Attachment B contains several items that may confuse customers. On the first page, the year-to-date estimated NEM charges at true-up is shown to be \$0.00, which seems unrelated to the total NEM charges before taxes and the total electric minimum delivery charges. The graphs on page four are not properly labeled, and the cumulative NEM balance by month also does not reflect the actual NEM balance of \$189.24 on page seven. The graph that is supposed to show the daily usage on page six of the bill does not have labeled axes, so the customer would not know how much electricity was used on a specific date, or the day where her usage spiked near the end of the month.

Additionally, CCAs' inability to participate in IOUs' billing true-up process has also forced CCAs to implement a different true-up process for NEM customers. CCAs currently have to settle NEM customers' credits and charges on a monthly basis, and provide a NEM account balance to PG&E to display on the bill. At the end of a 12-month cycle, which is analogous to the annual true-up, CCAs charge customers for the amount owed or provide cash compensation if an account has accrued more credits than charges. This process has led to confusion among customers who were previously served by IOUs and have recently enrolled in CCAs, and is in conflict with the annual true-up mechanism the Commission adopted in the Decision ("D.") 16-01-044, *Adopting Successor to Net Energy Metering Tariff*.⁴ Furthermore, if a NEM customer's CCA enrollment occurs in the 12-month cycle, their bills are automatically trueed up. Depending on the month of

⁴ D.16-01-044 at pages 94-95. The decision does not find compelling reasons to change the annual true-up to monthly true-up.

true-up, the customers could incur unexpected charges on their bills due to seasonal variation in usage, which can be financially burdensome especially for low-income families.

Accurate billing information can help customers conserve energy. However, as demonstrated, information that CCA NEM customers receive makes it challenging to learn about their actual energy usage to make energy consumption decisions. Despite having paid for the same service through their distribution charges, CCA NEM customers receive inferior billing services compared to their bundled counterparts. It is this type of inherent market power that undermines competitive neutrality that the legislation directed the Commission to address in SB 790.⁵

As more communities in California form CCAs, these billing issues will impact an increasing number of customers. This will likely require a greater effort at the Commission to reach a resolution that will provide equal quality billing information between bundled and unbundled customers.

B. Question 2: Which issues identified in Question 1 could most effectively be addressed through an information packet for potential NEM customers? Why?

The information packet should generally describe that the bills produced for CCA NEM customers may contain different information, and CCA NEM customers should contact the CCA that is providing their electricity generation service to learn more about their bills. The information packet should also include a list of CCA call centers and their contact information.

⁵ SB 790 finds “Electrical corporations have inherent market power derived from, among other things, name recognition among customers, longstanding relationships with customers, joint control over regulated operations and competitive generation services, access to competitive customer information, and the potential to cross-subsidize competitive generation services.”

- C. **Question 3: Which issues identified in Question 1 do not lend themselves to being effectively addressed through an information packet for potential NEM customers? Why not?**

To effectively solve the billing problem, the Commission should provide a procedural venue to determine how to best ensure that the IOUs are providing equal quality billing services to bundled and unbundled customers.

- D. **Question 4: What entity or entities should be responsible for preparing an information packet? Please explain why that entity is appropriate for this task.**

CCAs should be responsible for preparing materials for the information packet, and consult the IOUs as necessary. CCAs are the most familiar with billing challenges experienced by their NEM customers and are intimately involved in resolving these billing issues.

- E. **Question 5: What entity or entities should be responsible for providing any information packet to potential NEM customers?**

CCAs and IOUs should both be responsible for providing the information packet to potential NEM customers as unbundled customers are served by both CCAs and IOUs. Consistent with the CCA Code of Conduct in D.12-12-036, CCAs should be responsible for communicating with their own potential customers.⁶

- F. **Question 6: For each issue identified in your response to Question 2, please provide a proposal or a mock-up of how the issue might be presented in an information packet.**

Below is the text that can be included in the information packet should read:

[Section Heading] Community Choice Aggregation (CCA)

⁶ D.12-12-036 at page 7.

Customers who receive their electric generation service from a local CCA program instead of the investor-owned utility are still eligible to participate in Net Energy Metering. The investor-owned utility will continue to provide an annual true-up for credits and/or charges associated with electric delivery. Your electric generation credits and/or usage charges will be billed monthly by the CCA and included on the CCA billing detail page of your regular investor-owned utility bill. For more information on how your CCA handles NEM, please contact them directly.

CleanPowerSF	1-415-554-0773	www.cleanpowersf.org
Lancaster Choice Energy	1-844-288-4523	www.lancasterchoicenergy.com
MCE	1-888-632-3674	www.mceCleanEnergy.org
Peninsula Clean Energy	1-866-966-0110	www.peninsulacleanenergy.com
Sonoma Clean Power	1-855-202-2139	www.sonomacleanpower.org

G. Question 11: For issues identified in your response to Question 3 that could not most effectively be addressed through an information packet, what requirements, if any, should the Commission put in place?

The Commission should identify an appropriate procedural venue to ensure that bundled and unbundled NEM customers receive the same quality of billing services. The Commission should work with CCAs and IOUs to identify potential solutions. Because Public Utilities Code 394.4(e)⁷ enables the Commission to ensure compliance with basic consumer protection rules, the

⁷ Public Utilities Code 394.4 states “Rules that implement the following minimum standards shall be adopted by the commission for electric service providers offering electrical services to residential and small commercial customers and the governing body of a public agency offering electrical services to residential and small commercial customers within its jurisdiction” including (e) any bills shall contain “sufficient detail for the customer to recalculate the bill for accuracy.”

Commission should have the authority to implement measures that can provide equal billing services for bundled and unbundled NEM customers.

MCE suggests that the Commission host a workshop where CCAs can share examples of billings issues that have led to customer confusion, and brainstorm solutions that can systemically address these billing issues. After the workshop, the Commission should provide opportunities for formal comments and reply comments to weigh in on the presented problems and solutions. The Commission can then determine the additional procedural steps that need to be taken to fully address these billing issues related to NEM.

IV. CONCLUSION

MCE thanks Assigned Commissioner Picker and Assigned Administrative Law Judge Anne E. Simon for the opportunity to provide these comments on NEM successor tariff consumer protection and related issues.

Respectfully submitted,

/s/ C.C. Song

C.C. Song
Regulatory Analyst
MARIN CLEAN ENERGY
1125 Tamalpais Avenue
San Rafael, CA 94901
Telephone: (415) 464-6018
Facsimile: (415) 459-8095
E-Mail: csong@mceCleanEnergy.org

January 24, 2017

Attachment A



ENERGY STATEMENT

www.pge.com/MyEnergy

Account No: [REDACTED]
Statement Date: 12/08/2016
Due Date: 12/29/2016

Service For:

[REDACTED]

Questions about your bill?

Solar Hotline: 1-877-743-4112 M-F 8-5
Phone: 1-866-743-0335
24 hours per day, 7 days per week
www.pge.com/MyEnergy

Local Office Address

[REDACTED]

Your Enrolled Programs

Net Energy Metering (NEM)

Your Account Summary

Amount Due on Previous Statement	\$71.46
Payment(s) Received Since Last Statement	-71.46
Previous Unpaid Balance	\$0.00
Current PG&E Electric Monthly Charges	\$10.99
MCE Electric Generation Charges	28.09
Current Gas Charges	81.81

Total Amount Due by 12/29/2016 **\$120.89**

Your Net Energy Metering (NEM) Account Summary

Year-to-date (YTD) NEM charges are based on your YTD usage. Your NEM balance will be reconciled on your annual True-Up statement (04/2017). No credits will be carried over to your next True-Up period. Please see the "Summary of Your NEM YTD Charges" for more details.

Total NEM Charges Before Taxes	\$191.20
Total Electric Minimum Delivery Charges	-69.99
Estimated Taxes	16.28
YTD Estimated NEM Charges At True-Up	\$137.49

Important Messages

Your charges on this page are separated into delivery charges from PG&E and generation or procurement charges from an energy provider other than PG&E. These two charges are for different services and are not duplicate charges.

Your account has an unpaid balance from a prior bill. To avoid missing a future payment, you may wish to sign up for our recurring payment service. Please visit www.pge.com/waystopay for all your payment options.

Continued on page 9

Please return this portion with your payment. No staples or paper clips. Do not fold. Thank you.

[REDACTED]



Account Number: [REDACTED] Due Date: 12/29/2016 Total Amount Due: \$120.89

Amount Enclosed:
\$ [] [] [] [] [] [] [] [] [] []

[REDACTED]

PG&E
BOX 997300
SACRAMENTO, [REDACTED]



ENERGY STATEMENT

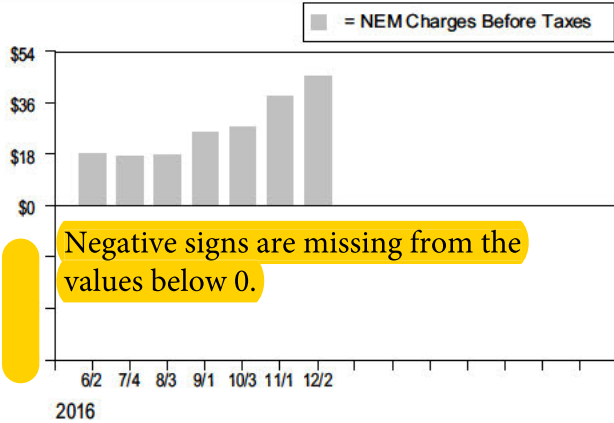
www.pge.com/MyEnergy

Account No: [REDACTED]
Statement Date: 12/08/2016
Due Date: 12/29/2016

Summary of Your NEM Year-to-Date (YTD) Charges (continued)

Service For: [REDACTED]
Service Agreement ID: [REDACTED]
Rate Schedule: E1 T Residential Service

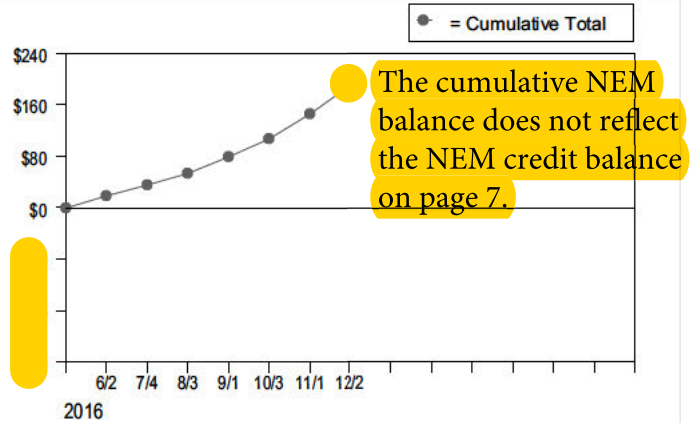
NEM Charges Before Taxes



Monthly NEM Charges

Monthly NEM Charges represent the cost of the electricity you use each month. You don't pay your monthly NEM balance each month. Instead, your Monthly NEM Charges are added up to calculate your Cumulative NEM balance, which you pay at True-Up.

Cumulative NEM Balance by Month



Cumulative NEM Balance

Cumulative NEM balance is a running total of your electricity costs and can increase or decrease depending on each month's use and generation. You only pay your Cumulative NEM balance at True-Up.



ENERGY STATEMENT

www.pge.com/MyEnergy

Account No: [REDACTED]
Statement Date: 12/08/2016
Due Date: 12/29/2016

Details of MCE Electric Generation Charges

11/02/2016 - 12/03/2016 (32 billing days)

Service For: [REDACTED]
Service Agreement ID: [REDACTED] ESP Customer Number: [REDACTED]

11/02/2016 – 12/03/2016

Rate Schedule: NEM E-1

Generation - Total	360.013800 kWh @ \$0.07200	\$25.92
	Net Charges	25.92
Utility Users Tax		2.07
Energy Surcharge		0.10

YOUR MCE NEM CREDIT BALANCE IS NOW [REDACTED]
MCE is committed to protecting customer privacy.
Learn more about our privacy policy at: mceCleanEnergy.org/privacy.

Total MCE Electric Generation Charges

Customer's MCE NEM credit balance is not reflected in the graph on page 4. **\$28.09**

Service Information

Total Usage 360.000000 kWh

For questions regarding charges on this page, please contact:

MCE
1125 Tamalpais Avenue
SAN RAFAEL CA 94901
1-888-632-3674
www.mceCleanEnergy.org

Additional Messages

MCE is a not-for-profit, public agency that sources 50-100% renewable energy for your power needs, called electric generation.

PG&E continues to provide and bill for electric delivery services. MCE replaces PG&E's charge for electric generation. This is reflected in the 'Generation Credit' line item shown on the 'Details of PG&E Electric Delivery Charges' page of your bill.

Gas services are not provided by MCE.

If you have any questions about MCE, please call us at 1 (888) 632-3674, email us at info@mceCleanEnergy.org, or visit us online at www.mceCleanEnergy.org. We're happy to help!

Attachment B



ENERGY STATEMENT

www.pge.com/MyEnergy

Account No: [REDACTED]
Statement Date: 01/06/2017
Due Date: 01/27/2017

Service For:

[REDACTED]

Questions about your bill?

Solar Hotline: 1-877-743-4112 M-F 8-5
Phone: 1-866-743-0335
24 hours per day, 7 days per week
www.pge.com/MyEnergy

Local Office Address

[REDACTED]

Your Enrolled Programs

Net Energy Metering (NEM)

Your Account Summary

Amount Due on Previous Statement	\$48.24
Payment(s) Received Since Last Statement	-48.24
Previous Unpaid Balance	\$0.00
Current PG&E Electric Monthly Charges	\$9.53
MCE Electric Generation Charges	0.00
Current Gas Charges	113.90

Total Amount Due by 01/27/2017 \$123.43

Your Net Energy Metering (NEM) Account Summary

Year-to-date (YTD) NEM charges are based on your YTD usage. Your NEM balance will be reconciled on your annual True-Up statement (07/2017) and other charges and taxes may apply. No credits will be carried over to your next True-Up period. Please see the "Summary of Your NEM YTD Charges" for more details.

Total NEM Charges Before Taxes	[REDACTED]
Total Electric Minimum Delivery Charges	[REDACTED]
YTD Estimated NEM Charges At True-Up	[REDACTED]

Total NEM charges before taxes and total electric minimum delivery charges seem unrelated to the YTD estimated NEM charges at true-up.

Important Messages

Your charges on this page are separated into delivery charges from PG&E and generation or procurement charges from an energy provider other than PG&E. These two charges are for different services and are not duplicate charges.

Find Ways to Save. The combination of colder weather, more time indoors and fewer daylight hours can increase your energy costs. For energy savings tips, visit www.pge.com/saveenergymoney.

Please return this portion with your payment. No staples or paper clips. Do not fold. Thank you.

[REDACTED]



Account Number:	Due Date:	Total Amount Due:
[REDACTED]	01/27/2017	\$123.43

Amount Enclosed:
\$ [REDACTED]

[REDACTED]

[REDACTED]



ENERGY STATEMENT

www.pge.com/MyEnergy

Account No: [REDACTED]
Statement Date: 01/06/2017
Due Date: 01/27/2017

Summary of Your NEM Year-to-Date (YTD) Charges

Service For: [REDACTED]
Service Agreement ID: [REDACTED]
Rate Schedule: E6 X Residential Time-of-Use Service

Summary of NEM Charges

Bill Period End Date	Net Peak Usage (kWh)	Net Part Peak Usage (kWh)	Net Off Peak Usage (kWh)	Net Usage (kWh)	Estimated NEM Charges Before Taxes	Estimated Taxes	Estimated Total NEM Charges
08/30/2016	-164	-100	151	-113	-\$23.19	-\$0.07	-\$23.26
09/29/2016	-128	-91	102	-118	-21.56	-0.07	-21.63
10/30/2016	-62	-45	210	103	6.38	0.06	6.44
11/30/2016	2	47	99	147	14.50	0.09	14.59
12/29/2016	0	77	296	373	39.77	0.23	40.00
TOTAL	-352	-112	858	392	\$15.90	\$0.24	\$16.14

Differences in net usage may occur due to rounding

Electric Charges

Bill Period End Date	Minimum Delivery Charges
08/30/2016	\$9.86
09/29/2016	9.86
10/30/2016	10.19
11/30/2016	10.19
12/29/2016	9.53
TOTAL	\$49.63

Explanation of Calculations

Your YTD Total NEM Charges represent the balance of your net usage since the start of your True-Up period. Charges are calculated each month but are not billed until the end of the True-Up period.

Your Summary of NEM Charges will be reset to zero at True-Up.

The Minimum Delivery Charge is assessed monthly and credited at true-up if the total NEM Charges Before Taxes are greater than your cumulative Minimum Delivery Charges.

This is your YTD balance. Your total NEM balance will be reconciled on your True-Up statement (07/2017).

Total NEM Charges Before Taxes	[REDACTED]
Total Electric Minimum Delivery Charges	[REDACTED]
YTD Estimated NEM Charges At True-Up	[REDACTED]



ENERGY STATEMENT

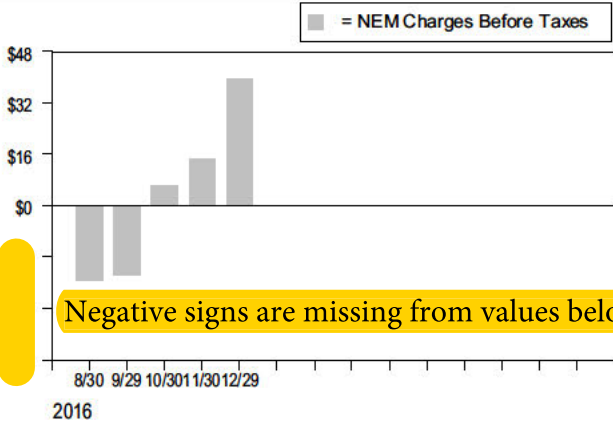
www.pge.com/MyEnergy

Account No: [REDACTED]
Statement Date: 01/06/2017
Due Date: 01/27/2017

Summary of Your NEM Year-to-Date (YTD) Charges (continued)

Service For: [REDACTED]
Service Agreement ID: [REDACTED]
Rate Schedule: E6 X Residential Time-of-Use Service

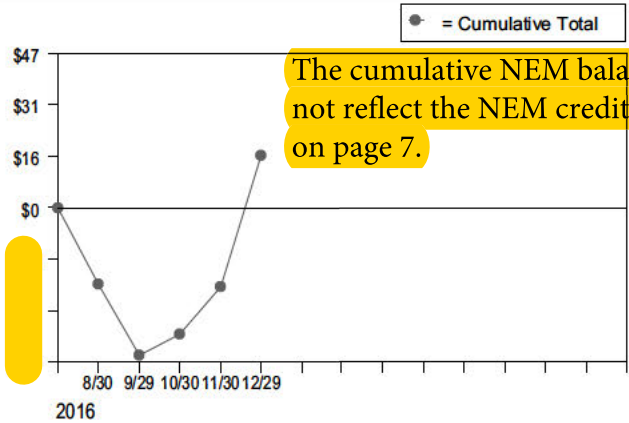
NEM Charges Before Taxes



Monthly NEM Charges

Monthly NEM Charges represent the cost of the electricity you use each month. You don't pay your monthly NEM balance each month. Instead, your Monthly NEM Charges are added up to calculate your Cumulative NEM balance, which you pay at True-Up.

Cumulative NEM Balance by Month



Cumulative NEM Balance

Cumulative NEM balance is a running total of your electricity costs and can increase or decrease depending on each month's use and generation. You only pay your Cumulative NEM balance at True-Up.



ENERGY STATEMENT

www.pge.com/MyEnergy

Account No: [REDACTED]
Statement Date: 01/06/2017
Due Date: 01/27/2017

Details of NEM Charges

12/01/2016 - 12/29/2016 (29 billing days)

Service For: [REDACTED]
Service Agreement ID: [REDACTED]
Rate Schedule: E6 X Residential Time-of-Use Service
Enrolled Programs: Net Energy Metering (NEM)

12/01/2016 – 12/29/2016

Tier 1 Allowance	316.10 kWh	(29 days x 10.9 kWh/day)		
Tier 1 Net Usage				
Part Peak	65.610000 kWh	@ \$0.17219		\$11.30
Off Peak	250.490000 kWh	@ \$0.15536		38.92
Tier 2 Net Usage				
Part Peak	11.805700 kWh	@ \$0.23142		2.73
Off Peak	45.045400 kWh	@ \$0.21459		9.67
Generation Credit				-31.58
Power Charge Indifference Adjustment				8.73
Franchise Fee Surcharge				0.23

Monthly NEM Charges \$40.00

2011 Vintaged Power Charge Indifference Adjustment

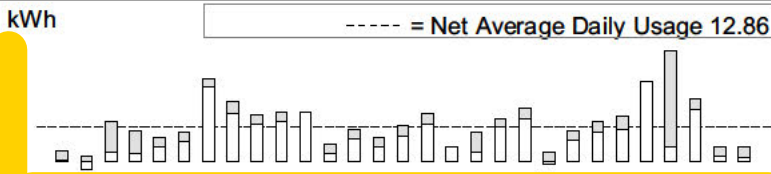
Your NEM balance will be reconciled on your True-Up statement (07/2017).

Average Daily Usage (kWh / day)

Last Year	Last Period	Current Period
8.93	4.75	12.86

Service Information

Meter #	[REDACTED]
Consumption	530.630000 kWh
Net Generation	-157.678900 kWh
Total Usage	372.951100 kWh
Baseline Territory	X
Heat Source	Not Electric
Serial	H
Rotating Outage Block	50



- Peak¹
- Part Peak²
- Off Peak³

Energy Charges

\$0.00
\$14.03
\$48.59

¹Peak: 5/1 10/31 1:00pm 7:00pm, M F;
²Part Peak: 5/1 10/31 10:00am 1:00pm, 7:00pm 9:00pm, M F;
 5:00pm 8:00pm, Sat Sun; 11/1 4/30 5:00pm 8:00pm, M F;
³Off Peak: All Other Hours (including Holidays)

Without labeling the axes, it is difficult for consumers to understand their energy charges and credits.



ENERGY STATEMENT

www.pge.com/MyEnergy

Account No: [REDACTED]
Statement Date: 01/06/2017
Due Date: 01/27/2017

Details of MCE Electric Generation Charges

12/01/2016 - 12/30/2016 (30 billing days)

Service For: [REDACTED]
Service Agreement ID: [REDACTED] ESP Customer Number: [REDACTED]

12/01/2016 – 12/30/2016

Rate Schedule: NEM E-6

Generation - Off Peak - Winter	295.535400 kWh @ \$0.05300	\$15.66
Generation - Part Peak - Winter	77.415700 kWh @ \$0.07300	5.65
	Net Charges	21.31

Energy Surcharge 0.11
CHARGED TO NEM BALANCE -21.42

YOUR MCE NEM CREDIT BALANCE IS NOW [REDACTED]
MCE tracks your credits earned from electricity generation and applies them to future MCE charges. For MCE NEM-related questions, please call 1-888-632-3674.

Total MCE Electric Generation Charges

\$0.00
Customer's MCE NEM credit balance is not reflected in the graph on page 4.

Service Information

Total Usage 373.000000 kWh

For questions regarding charges on this page, please contact:

MCE
1125 Tamalpais Avenue
SAN RAFAEL CA 94901
1-888-632-3674
www.mceCleanEnergy.org

Additional Messages

MCE is a not-for-profit, public agency that sources 50-100% renewable energy for your power needs, called electric generation.

PG&E continues to provide and bill for electric delivery services. MCE replaces PG&E's charge for electric generation. This is reflected in the 'Generation Credit' line item shown on the 'Details of PG&E Electric Delivery Charges' page of your bill.

Gas services are not provided by MCE.

If you have any questions about MCE, please call us at 1 (888) 632-3674, email us at info@mceCleanEnergy.org, or visit us online at www.mceCleanEnergy.org. We're happy to help!



Kathrin Sears, Chair
County of Marin

Tom Butt, Vice Chair
City of Richmond

Bob McCaskill
City of Belvedere

Alan Schwartzman
City of Benicia

Sloan C. Bailey
Town of Corte Madera

Greg Lyman
City of El Cerrito

Barbara Coler
Town of Fairfax

Kevin Haroff
City of Larkspur

Garry Lion
City of Mill Valley

Brad Wagenknecht
County of Napa

Denise Athas
City of Novato

Carla Small
Town of Ross

Ford Greene
Town of San Anselmo

Genoveva Calloway
City of San Pablo

Andrew McCullough
City of San Rafael

Ray Withy
City of Sausalito

Emmett O'Donnell
Town of Tiburon

Marin Clean Energy
1125 Tamalpais Avenue
San Rafael, CA 94901

1 (888) 632-3674
mceCleanEnergy.org

January 24, 2017

CPUC Energy Division
Attention: ED Tariff Unit
505 Van Ness Avenue
San Francisco, CA 94102-3298

Re: Protest of Marin Clean Energy to Pacific Gas & Electric Company (“PG&E”) Advice Letter 4979-E Regarding Its Proposed Default Time-of-Use Pilot Design

Dear Energy Division:

On December 16, 2016, PG&E served the advice letter (“Advice Letter”) for its Proposed Default Time-of-Use Pilot Design, in compliance with Decision (“D.”) 15-07-001.

Marin Clean Energy (“MCE”) submits the protest below and recommends the Commission reject PG&E’s Advice Letter unless the Advice Letter can be modified to reflect:

1. Costs associated with providing rate modeling for CCA customers will be recovered by PG&E through its distribution function.
2. Cost recovery for bill protection should be attributed to specific revenue shortfall’s associated rate function.

I. Costs associated with providing rate modeling for CCA customers should be recovered by PG&E.

PG&E’s Advice Letter indicated that \$800,000 of its estimated default pilot costs for IT systems is associated with CCA rate modeling,¹ but did not indicate how the cost will be recovered. Because PG&E is the billing and metering service provider to unbundled customers, as required by AB 117,² PG&E should be able to recover these costs from its distribution function.

Additionally, the Commission has determined that costs already reimbursed in the utility revenue requirements cannot be charged to CCAs, including billing system costs, and costs associated with customer

¹ AL 4979-E at page 77, Table 17.

² Public Utilities Code Section 366.2(c)(9).

services.³ Rate modeling is one of many component costs of providing billing services. Because PG&E is a distribution utility that provides billing services to its distribution customers, including CCA customers, PG&E should have or might have already collected the revenue to cover the billing system costs. If there are costs that have not been incorporated in its revenue requirement regarding rate modeling, PG&E should provide the rate modeling service and recover the cost through its distribution rates both retroactively and on a going-forward basis.

Furthermore, MCE and Sonoma Clean Power (“SCP”) began serving customers respectively in 2010 and 2014, and incremental additional costs associated with billing and call centers have already been assumed by CCAs. PG&E currently recover staff cost associated with supporting CCA operations through its General Rate Case (“GRC”) applications based on the number of existing CCAs and projected CCA expansion in its service territory.⁴ Similarly, PG&E’s rate modeling should account for operational CCAs and potential expansion.

While PG&E identified that modeling of generation rates specific to customers’ CCA is critical for CCA participation, it did not indicate how the cost will be recovered. The Commission should direct PG&E to recover these costs from its distribution function, which is consistent with the precedent set by the Commission in D. 04-12-046.

II. Cost recovery for bill protection should be attributed to the appropriate function.

PG&E’s Advice Letter did not offer specific detail on how the adjustments to revenue, as the result of providing bill protection to customers, would be recovered. To ensure that inappropriate cost-shifting does not occur between bundled PG&E customers and CCA customers, the Commission should direct PG&E to record the revenue adjustments in the account to which the revenue shortfalls are attributed.

Based on the PG&E’s Advice Letter 4902-E-B filed on December 30, 2016, some components of the E-TOU-B rate are included within the generation function, while some are recorded in the distribution function.⁵ PG&E indicated in the Advice Letter that “Where bill protection is applied, the adjustments to revenue will be captured and allocated directly to the residential class,”⁶ but did not specify allocations to the appropriate functions. Without the necessary specificity, there may be the potential for PG&E to allocate costs to the inappropriate function, which would result in cost-shifting between bundled and unbundled customers.

To ensure that cost-shifting does not occur, PG&E should provide detail on how revenue shortfalls would be accurately attributed to generation and distribution functions. If a customer’s bills are higher because of the variations associated with the generation function of the bill, bill protection for that portion of the bill should be recorded in the Utility Generation Balancing Account (“UGBA”). Likewise, if bill protection is triggered by the variations in the distribution function of the bill, bill protection should be recorded in the Distribution Revenue Accounting Mechanism (“DRAM”).

³ See D.04-12-046 at page 14.

⁴ See PG&E 2017 General Rate Case Exhibit 6 at pages 1-3, 2-12, 2-27.

⁵ Advice Letter 4902-E-B at Sheet 4.

⁶ AL 4979-E at page 75.

For these reasons, PG&E's Advice Letter 4979-E should be denied.

Respectfully Submitted,

/s/ CC Song

CC Song
Regulatory Analyst
MCE

cc:
Edward Randolph, Director, Energy Division
Erik Jacobson, Director, Regulatory Relations, PG&E
Service List R.12-06-013

Docket No.: Application 16-08-006
Exhibit No.: _____
Date: January 27, 2017
Witnesses: Barbara Barkovich, Mark Fulmer, Robert
Kinosian, and Janis Pepper
ALJ: Peter Allen

JOINT INTERVENOR OPENING TESTIMONY

TABLE OF CONTENTS

	Page
I. Introduction	1
A. Background on the Joint Intervenors.....	1
1. Alliance for Retail Energy Markets.....	2
2. California Clean DG Coalition.....	2
3. California Community Choice Association.....	2
4. California Large Energy Consumers Association	2
5. City and County of San Francisco.....	2
6. Direct Access Customer Coalition	3
7. Energy Producers and Users Coalition.....	3
8. Energy Users Forum.....	3
9. Marin Clean Energy	3
10. Peninsula Clean Energy.....	4
11. Silicon Valley Clean Energy Authority.....	4
12. Sonoma Clean Power Authority.....	4
13. South San Joaquin Irrigation District	5
B. Summary of Joint Intervenors’ Opposition to the PG&E Proposal	5
1. PG&E Has Not Proven That Diablo Canyon Needs to Be Replaced <i>(Witness: Robert Kinosian)</i>	5
2. The IRP Proceeding Is the Appropriate Venue to Determine Need and Authorize Procurement (If Necessary) <i>(Witness: Robert Kinosian)</i>	6
3. Even If the Commission Wants to Authorize Replacement Procurement in This Proceeding, There Are Several Fundamental Problems With PG&E’s Proposal <i>(Witnesses: Barbara Barkovich, Mark Fulmer, and Janis Pepper)</i>	7
a. Three Procurement Tranches Are Not Needed <i>(Witness: Robert Kinosian)</i>	7
b. At Most, the Commission Should Authorize One Tranche of Procurement in Mid-2022 for Deliveries in Mid-2025 <i>(Witness: Barbara Barkovich)</i>	8

c.	The Commission Should Reject PG&E’s Illegal Attempt to Create a New Nonbypassable Charge (<i>Witnesses: Barbara Barkovich and Mark Fulmer</i>)	9
d.	Non-Utility LSEs Must Have a Reasonable Method to Self-Procure any Necessary Clean Energy Resources (<i>Witness: Janis Pepper</i>)	9
II.	Retirement of Diablo Canyon Power Plant (<i>Witness: Robert Kinosian</i>)	10
III.	Proposed Replacement Procurement - PG&E’s Procurement Requests Are Unreasonable and Should Be Rejected (<i>Witnesses: Barbara Barkovich and Bob Kinosian</i>)	10
A.	The Proposed Procurement Is Unnecessary at This Time (<i>Witness: Bob Kinosian</i>)	10
1.	Any Procurement That Comes Online Prior to Mid-to-Late 2025 Will Exacerbate Existing Overgeneration Concerns	11
2.	The Uncertainty Identified By PG&E Also Dictates Postponement of Procurement	13
a.	PG&E’s Own Forecasts Support a Delayed Commission Decision on Replacement Procurement.....	14
b.	Growing CCA and Other Departing Load Also Reduce the Need for Replacement Procurement.....	14
c.	Changes in Technology Could Further Reduce the Need for Replacement Procurement.....	15
3.	Deferring Consideration of PG&E’s Procurement Allows the Commission to Consider the Requests in Proceedings Developed to Address the Exact Issues That Need to Be Addressed in Approving PG&E’s Procurement Request	16
a.	The Commission Already Has a Proceeding and a Process Underway to Address Utility Requests for Energy Efficiency Procurement.....	17
b.	The Commission Already Has a Proceeding to Address Long-Term Utility Procurement.....	19
B.	PG&E’s Offers Little Support for Its “Unprecedented” Request (<i>Witness: Barbara Barkovich</i>)	23
1.	Problems With PG&E’s Load and Resource Forecasts	23
2.	There is No Showing that PG&E Can Procure Enough Energy Efficiency to Satisfy Its Unprecedented Solicitation.....	26

C.	Additional Concerns with Each Tranche (<i>Witness: Barbara Barkovich</i>)	28
1.	Tranche #1	28
2.	Tranche #2	28
3.	Tranche #3	29
D.	No Replacement Procurement Should Be Authorized Here; If Any, At Most, 1,000 GWh of Procurement Should Be Considered as a Backstop Allowance to the IRP (<i>Witness: Barbara Barkovich</i>)	30
IV.	Proposed Employee Program	32
V.	Proposed Community Impacts Mitigation Program	32
VI.	Recovery of License Renewal Costs	32
VII.	Proposed Ratemaking and Cost Allocation Issues (<i>Witnesses: Barbara Barkovich, Mark Fulmer, and Janis Pepper</i>)	32
A.	The Costs of Any New Power Purchases Approved in This Proceeding Should Be Recoverable From Departing Loads Only Pursuant to the PCIA. (<i>Witnesses: Barbara Barkovich and Mark Fulmer</i>)	34
B.	State Law That PG&E References in an Attempt to Justify Its Clean Energy Charge Proposal Does Not Apply (<i>Witnesses: Barbara Barkovich and Mark Fulmer</i>)	36
C.	GHG Benefits Do Not Justify PG&E’s Anticompetitive Clean Energy Charge Proposal (<i>Witnesses: Barbara Barkovich and Mark Fulmer</i>)	39
D.	PG&E’s Proposal to Allocate the Benefits Associated With the Above Market Costs Applied to Other LSE Customers Does Not Cure the Problems With the Proposal (<i>Witnesses: Barbara Barkovich and Mark Fulmer</i>)	41
E.	PG&E’s Proposal Contradicts State Law Requiring Each LSE to Be Responsible for Its Own Procurement (<i>Witness: Janis Pepper</i>)	43
F.	PG&E’s Self-Provision Proposal Is Flawed (<i>Witness: Janis Pepper</i>)	44
1.	The Timing of PG&E’s Proposal for Self-Provision Is Flawed	45
a.	The Timing Restrictions Are Unnecessary and Unfair	46
b.	The Timing Restrictions Would Prevent Hundreds of Thousands of Eligible Customers From Exercising the Right to Self-Procure	46
c.	LSEs Must Have the Results of the IRP Process Before Determining Whether to Self-Procure	47

d.	If a Tranche #2 RFO <i>Must</i> Occur, the Timing Restrictions Should Be Modified	49
2.	PG&E’s Proposal for Requiring LSEs to Commit to Tranche #3 Procurement In Order to Qualify for Tranche #2 Self-Provision Is Premature and Unfair	49
G.	Municipal Departing Load (MDL) Customers Should Not Be Subject to Nonbypassable Charges for Diablo Canyon Replacement Power Beyond Any Existing Requirements and Should Be Afforded the Same Self- Provision Options as Other LSEs (<i>Witness: Robert Kinosian</i>)	50
H.	PG&E’S Procurement Review Group (PRG) Proposal Is Inadequate (<i>Witness: Mark Fulmer</i>)	51
VIII.	Land Use, Facilities and Decommissioning Issues	52
IX.	Conclusion.....	52

1 **I. INTRODUCTION**

2 This introduction is organized into two sections: (a) background on the Joint Intervenors
3 and their interests in this proceeding; and (b) a summary of the Joint Intervenors’ concerns
4 regarding the PG&E Proposal¹ and other aspects of its Application 16-08-006 (“PG&E
5 Application”).

6 **A. Background on the Joint Intervenors**

7 The Joint Intervenors are a number of organizations representing medium and large
8 consumers and non-utility load serving entities (“LSEs”) that share many concerns regarding the
9 PG&E Proposal and other aspects of the PG&E Application. The Joint Intervenors have come
10 together to submit this joint testimony. Many of the Joint Intervenors have also chosen to submit
11 separate testimony to highlight additional issues not included in this joint testimony.

12 The Joint Intervenors consist of the following thirteen entities: (1) Alliance for Retail
13 Energy Markets (“AREM”); (2) California Clean DG Coalition (“CCDC”); (3) California
14 Community Choice Association (“CalCCA”); (4) California Large Energy Consumers
15 Association (“CLECA”); (5) City and County of San Francisco; (6) Direct Access Customer
16 Coalition (“DACC”); (7) Energy Producers and Users Coalition (“EPUC”); (8) Energy Users
17 Forum (“EUF”); (9) Marin Clean Energy (“MCE”); (10) Peninsula Clean Energy (“PCE”); (11)
18 Silicon Valley Clean Energy Authority (“SVCE”); (12) Sonoma Clean Power (“SCP”); and (13)
19 South San Joaquin Irrigation District (“SSJID”).

¹ Proposal of Pacific Gas and Electric Company (“PG&E”), Friends of the Earth, Natural Resources Defense Council, Environment California, International Brotherhood of Electrical Workers Local 1245, Coalition of California Utility Employees and Alliance for Nuclear Responsibility to Retire Diablo Canyon Nuclear Power Plant (“Diablo Canyon”) at Expiration of the Current Operating Licenses and Replace It With a Portfolio of GHG Free Resources sponsored by Pacific Gas and Electric Company (“PG&E”) (the “PG&E Proposal”).

1 Below is a brief description of each entity.

2 **1. Alliance for Retail Energy Markets**

3 AReM is a California non-profit mutual benefit corporation formed by electric service
4 providers active in California's direct access market.

5 **2. California Clean DG Coalition**

6 CCDC is an ad hoc group interested in promoting the ability of distributed generation
7 ("DG") system manufacturers, distributors, marketers and investors, and electric customers to
8 deploy DG. Its members represent a variety of DG technologies.

9 **3. California Community Choice Association**

10 CalCCA is a California nonprofit organization formed in June 2016 that represents the
11 statewide interests of California's CCA programs in regulatory and legislative matters.
12 Currently, CalCCA is comprised of seven voting members – CleanPowerSF, Lancaster Choice
13 Energy, MCE, PCE, SVCE, SCP, and Apple Valley Choice Energy. CalCCA's affiliate members
14 include Central Coast Power (counties of San Luis Obispo, Santa Barbara and Ventura), the
15 cities of Corona and Davis, and Placer and Los Angeles Counties.

16 **4. California Large Energy Consumers Association**

17 CLECA is an ad hoc organization of large, high load factor industrial customers of
18 Southern California Edison Company ("SCE") and PG&E; its members are in the cement, steel,
19 industrial gas, pipeline, beverage and mining industries.

20 **5. City and County of San Francisco**

21 The City and County of San Francisco is a municipal utility and Community Choice
22 Aggregator ("CCA") serving customers in and around the City and County of San Francisco.

1 **6. Direct Access Customer Coalition**

2 DACC is a regulatory advocacy group comprised of educational, governmental,
3 commercial and industrial customers that utilize direct access for all or a portion of their
4 electrical energy requirements.

5 **7. Energy Producers and Users Coalition**

6 EPUC is an ad hoc group representing the electric end use and customer generation
7 interests of the following companies: Chevron U.S.A. Inc., Phillips 66 Company, Shell Oil
8 Products US, Tesoro Refining & Marketing Company LLC, and California Resources Corp.

9 **8. Energy Users Forum**

10 EUF represents the interest of a broad spectrum of medium and large commercial and
11 industrial customers of PG&E, SCE, and San Diego Gas & Electric Company taking service
12 under both bundled and direct access rate schedules.

13 **9. Marin Clean Energy**

14 MCE is the first operational CCA in California. MCE is currently the primary electricity
15 provider in its service area, offering electricity generation to 83% of eligible customers. MCE
16 currently serves approximately 255,000 accounts throughout its service area, which includes the
17 entirety of Marin and Napa Counties and the cities of Benicia, El Cerrito, Lafayette, Richmond,
18 San Pablo, and Walnut Creek.

1 **10. Peninsula Clean Energy**

2 PCE is a CCA that currently supplies electricity to all 20 cities in San Mateo County,² as
3 well as the unincorporated portions of the county. In October 2016, PCE enrolled its first phase
4 of customers: 20% of San Mateo County’s residential customers (approximately 54,240
5 customers), all of its small and medium commercial customers (approximately 24,875
6 customers), and all of its municipal accounts. PCE will enroll all of its remaining customers in
7 April 2017, for a total of approximately 300,000 customers.

8 **11. Silicon Valley Clean Energy Authority**

9 SVCE is a joint powers authority formed in 2016 to implement a CCA program for
10 electric customers within the jurisdictional boundaries of its members, which include the County
11 of Santa Clara and eleven cities within the county.³ SVCE is expected to be the sixth operational
12 CCA program in California with an expected launch date of April 3, 2017. After the final phase
13 rollout in October of 2017, SVCE is expected to serve approximately 210,000 accounts with
14 peak electric demand of about 600 megawatts and annual energy consumption of approximately
15 3,500 gigawatt-hours.

16 **12. Sonoma Clean Power Authority**

17 SCP is the second operational CCA in California, and currently serves about 195,000
18 accounts encompassing a population of approximately 450,000, which includes all of Sonoma
19 County except for the City of Healdsburg, which has its own municipal utility. SCP will begin

² The cities in San Mateo County include Atherton, Belmont, Brisbane, Burlingame, Colma, Daly City, East Palo Alto, Foster City, Half Moon Bay, Hillsborough, Menlo Park, Millbrae, Pacifica, Portola Valley, Redwood City, San Bruno, San Carlos, San Mateo, South San Francisco, and Woodside.

³ The member agencies include the County of Santa Clara, and the cities of Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Monte Sereno, Morgan Hill, Mountain View, Saratoga, and Sunnyvale.

1 providing service to an additional 33,000 accounts in Mendocino County in the summer of 2017,
2 representing an additional population of about 71,000.

3 **13. South San Joaquin Irrigation District**

4 SSJID is a special district providing irrigation water for the cities of Escalon, Ripon, and
5 Manteca, and portions of unincorporated San Joaquin County. It is currently an electric
6 customer of PG&E and Modesto Irrigation District, with approximately 38,000 PG&E accounts
7 in its service territory.

8 **B. Summary of Joint Intervenors' Opposition to the PG&E Proposal**

9 The Joint Intervenors either support, do not oppose, or have no position concerning,
10 retiring the Diablo Canyon Power Plant (“Diablo Canyon”) at the end of its current license.
11 However, the Joint Intervenors oppose numerous items in the PG&E Proposal and the PG&E
12 Application. Below is a summary of the major issues and recommendations the Joint Intervenors
13 will discuss throughout this testimony.

14 **1. PG&E Has Not Proven That Diablo Canyon Needs to Be Replaced**
15 ***(Witness: Robert Kinosian)***⁴

16 PG&E bears the burden to demonstrate that the closure of Diablo Canyon will result in an
17 unmet supply shortfall that justifies the need for its replacement procurement proposal.
18 However, PG&E has conducted only a rudimentary forecast of its future bundled load,⁵ and has
19 not performed the type of comprehensive modeling necessary to forecast future need. In
20 addition, PG&E has relied on inconsistent and unsubstantiated numbers.⁶ As a result, PG&E
21 fails to justify the 4,000 GWh of energy efficiency and GHG-free energy it proposes to procure

⁴ The Witness Qualifications for Barbara Barkovich, Mark Fulmer, Robert Kinosian, and Janis Pepper, are attached as Exhibit A.

⁵ See PG&E Testimony, at 2-9–2-17.

⁶ See Section III.B and C of this testimony, *infra* at 23-29.

1 in its first two tranches. In fact, PG&E’s own projections show it losing large amounts of load
2 from its service territory to CCA programs before the proposed Diablo Canyon closure,⁷ which
3 will significantly, if not entirely, offset the need for additional procurement for PG&E’s bundled
4 customers. Finally, PG&E’s own testimony concedes that the Diablo Canyon retirement will not
5 affect local reliability needs, in contrast to the closure of the San Onofre Nuclear Generating
6 Station (“SONGS”).⁸

7 **2. The IRP Proceeding Is the Appropriate Venue to Determine Need and**
8 **Authorize Procurement (If Necessary) (Witness: Robert Kinosian)**

9 The Commission should not, and need not, vet in an ad-hoc manner PG&E’s load
10 forecasts and needs determination in this proceeding. Instead, the Commission should use the
11 existing Integrated Resource Planning (“IRP”) proceeding, R.16-02-007, to fully analyze
12 PG&E’s load forecasts and needs determination. The IRP process will ensure a robust modeling
13 of load and resources in PG&E’s service area and provide more appropriate scrutiny of whether,
14 when, and how Diablo Canyon’s output must be replaced.

15 Similarly, if the Commission determines there is a substantiated need to commit now for
16 procurement to address a supply shortfall following the Diablo Canyon closure, the
17 determination of which resources should be procured to replace the Diablo Canyon’s output for
18 bundled customers should also be determined within the IRP proceeding. The IRP proceeding is
19 specifically intended to provide a single venue in which to determine procurement authorizations
20 and to eliminate duplicative proceedings and improve administrative efficiency.⁹

⁷ See PG&E Testimony, at 2-9, Table 2-1.

⁸ *Id.*, at 2-20–2-21.

⁹ Cal. Pub. Util. Code § 454.52.

1 **3. Even If the Commission Wants to Authorize Replacement**
2 **Procurement in This Proceeding, There Are Several Fundamental**
3 **Problems With PG&E’s Proposal** (*Witnesses: Barbara Barkovich,*
4 *Mark Fulmer, and Janis Pepper*)

5 To the extent the Commission determines there is both a substantiated need for
6 procurement to address a supply shortfall following the Diablo Canyon closure *and* that the
7 appropriate venue for addressing any such shortfall is this proceeding, the Joint Intervenors have
8 a number of specific issues associated with how the PG&E Proposal requests that such
9 procurement occur.

10 **a. Three Procurement Tranches Are Not Needed** (*Witness: Robert*
11 *Kinosian*)

12 The Joint Intervenors oppose all three tranches of the PG&E Proposal’s proposed
13 replacement procurement. Importantly, ongoing procurement of preferred resources (EE, DR,
14 and renewable resources) will continue pursuant to legislative and Commission direction in other
15 proceedings; the procurement of GHG-free resources by LSEs throughout the State (including in
16 PG&E’s service territory) does not, and will not, turn on any of the three tranches of PG&E’s
17 proposed replacement procurement.

18 With regard to Tranche #1, the PG&E Proposal would allow PG&E to procure EE
19 starting in 2018 — *six* years before the closure of Diablo Canyon Unit 1 – independent of and
20 pursuant to different rules than those that apply to EE procured pursuant to the Commission’s
21 ongoing proceedings regarding EE. Instead, the Commission should require that any EE
22 procurement: (1) be assessed and authorized in the Commission’s EE proceedings and
23 coordinated with other procurement that is authorized in those proceedings; and (2) be assessed
24 using the same criteria that apply to other IOU-funded EE, including the same cost-effectiveness
25 requirements.

1 With regard to Tranche #2, PG&E proposes to procure a mix of EE and GHG-free supply
2 resources in 2025–2030. The Commission should instead require that Tranche #2 procurement:
3 (1) be assessed in the IRP proceeding; (2) undergo substantial risk management and mitigation
4 review to avoid the creation of stranded assets; and (3) not be limited to EE and renewable
5 procurement, but also include storage, flexible capacity, and other potential renewable
6 integration technologies that may arise before 2025.

7 With regard to Tranche #3, PG&E proposes a voluntary 55% Renewables Portfolio
8 Standard (“RPS”) requirement for 2031–2045. Given the 14-year delay before Tranche #3
9 begins, the Commission should defer to the IRP process the question of whether any such
10 procurement should be authorized. Given the likelihood of substantial changes in policy,
11 technology, and the marketplace in the coming years, the Commission should not prematurely
12 authorize procurement scheduled for that far into the future.

13 **b. At Most, the Commission Should Authorize One Tranche of**
14 **Procurement in Mid-2022 for Deliveries in Mid-2025 (*Witness:***
15 ***Barbara Barkovich*)**

16 Instead of the three tranches of procurement proposed in the PG&E Proposal, the Joint
17 Intervenors propose that if any procurement is to be authorized through this proceeding (which is
18 contrary to Joint Intervenors’ recommendation), the Commission should only approve
19 procurement as a backstop in the event that adequate procurement cannot be authorized in time
20 in the IRP. Such backstop procurement need not take place until 2022 and would be subject to
21 review and confirmation in the IRP, or if necessary because of delays in the IRP, pursuant to
22 annually updated load and resource forecasts. Between now and then, the Commission should
23 require PG&E to annually file updated load forecast estimates. In addition, the Commission
24 should only permit PG&E to proceed with a solicitation in mid-2022 if both 1) there is no timely
25 decision in the IRP to address any necessary procurement, and 2) PG&E’s annual load filings

1 demonstrate that PG&E’s estimates continue to support a need for replacement resulting from
2 Diablo Canyon closure starting in or before 2025.¹⁰ The backstop procurement would not
3 exceed 1,000 GWh and would take the form of a single request for offers for GHG-free energy to
4 come on line in 2025.

5 **c. The Commission Should Reject PG&E’s Illegal Attempt to**
6 **Create a New Nonbypassable Charge** (*Witnesses: Barbara*
7 *Barkovich and Mark Fulmer*)

8 The Joint Intervenors oppose PG&E’s proposed method of allocating the cost of
9 replacement procurement through what PG&E has labeled “the Clean Energy Charge.” Contrary
10 to the claims in the PG&E Application, the Clean Energy Charge has no statutory or legal basis.
11 The Commission should deny PG&E’s inappropriate attempt to unilaterally create another
12 nonbypassable charge (“NBC”) when there is already an existing mechanism in place to fairly
13 allocate the cost of utility procurement to all customers for whom such procurement is
14 undertaken.

15 **d. Non-utility LSEs Must Have a Reasonable Method to Self-**
16 **Procure any Necessary Clean Energy Resources** (*Witness:*
17 *Janis Pepper*)

18 If the Commission approves PG&E’s proposal for Tranche #2 and/or Tranche #3
19 procurement, and approves the imposition of the Clean Energy Charge – both of which would be
20 contrary to the Joint Intervenors’ recommendations – the Commission should revise PG&E’s
21 proposed method for non-utility LSEs to self-procure replacement resources.

22 Under the PG&E Proposal, a non-utility LSE would only have a 30-day window after
23 issuance of the Commission’s decision approving this Application to decide whether to self-

¹⁰ This solicitation should not preclude others that may be authorized as part of an approved IRP.

1 provide its share of supply-side resources associated with PG&E’s Tranche #2 procurement.
2 There is no need for such an expedited procurement process when the procurement of these
3 resources is several years in the future. Per the PG&E Proposal, the non-utility LSEs’ load will
4 greatly increase during that time period. Thus, a non-utility LSE would only be able to elect to
5 self-provide on behalf of whatever customers it had at the time of the Commission’s decision,
6 which would exclude hundreds of thousands of customers that may move from PG&E bundled
7 service between the time comprising thirty days after any Commission decision and before 2025.

8 **II. RETIREMENT OF DIABLO CANYON POWER PLANT (Witness: Robert**
9 ***Kinosian*)**

10 The Joint Intervenors either support, do not oppose, or have no position concerning,
11 retiring the Diablo Canyon Power Plant (“Diablo Canyon”) at the end of its current license.

12 **III. PROPOSED REPLACEMENT PROCUREMENT - PG&E’S PROCUREMENT**
13 **REQUESTS ARE UNREASONABLE AND SHOULD BE REJECTED (Witnesses:**
14 ***Barbara Barkovich and Bob Kinosian*)**

15 The Commission should reject PG&E’s request in this docket for authority to procure
16 resources to replace Diablo Canyon because PG&E has failed to prove that the request is
17 reasonable. This is because: (1) PG&E has not shown that the proposed procurement is
18 necessary at this time; (2) the Commission is already conducting or planning alternative
19 proceedings to consider the exact type of procurement PG&E proposes, and necessary data that
20 are not available here will be available in those proceedings; and (3) the PG&E Application has
21 significant inconsistencies and unsubstantiated claims.

22 **A. The Proposed Procurement Is Unnecessary at This Time (Witness: Bob**
23 ***Kinosian*)**

24 The Commission should not authorize procurement of resources that would come online
25 prior to the closure of Diablo Canyon and as early as 2018. Approving such procurement now
26 would be unreasonable because: (1) there is no convincing evidence that such procurement is

1 needed, and (2) such procurement may add to renewable integration problems and lead to
2 increased curtailment of renewable resources like solar and wind already online or scheduled for
3 delivery prior to the retirement of Diablo Canyon.¹¹ Instead, the large volume of procurement
4 proposed here should be considered by the Commission pursuant to the requirements of SB 350
5 – in a comprehensive manner that incorporates an analysis of PG&E’s total portfolio need and
6 resources already available to meet it. There is time to determine the need for such energy in the
7 appropriate Commission proceedings closer to the appropriate delivery dates (e.g., the relevant
8 Energy Efficiency proceeding¹² or the IRP¹³). As PG&E itself concedes:

9 The full solution will emerge over the 2024-2045 period, in consultation with
10 many parties and with the oversight of the Commission, the California
11 Independent System Operator (CAISO), the California Air Resources Board
12 [“CARB”], the California Energy Commission [“CEC”], the Governor and
13 Legislature, and stakeholders.¹⁴

14 **1. Any Procurement That Comes Online Prior to Mid-to-Late 2025 Will**
15 **Exacerbate Existing Overgeneration Concerns**

16 Among the primary reasons that PG&E claims that it is necessary to shut down Diablo
17 Canyon is that the continued operation "... will likely exacerbate the prospect of ‘over-
18 generation’ conditions in the future as more solar resources continue to come on line” and that
19 “by the end of its current license period, Diablo Canyon will no longer be a good ‘fit’ for
20 PG&E’s portfolio.”¹⁵ Despite the risk of overgeneration, PG&E proposes to procure 2,000 GWh

¹¹ Unit 2 is projected to retire in August 2025 near the end of the summer peak load season. For this reason, PG&E should not see significant resource shortfalls before the summer season begins in 2026.

¹² See, e.g., PG&E Rolling Portfolio Application 17-01-015.

¹³ See R.16-02-007.

¹⁴ PG&E Testimony, at 3-3.

¹⁵ PG&E Testimony, at 2-17; PG&E Response to TURN 001-Q07, included in Exhibit B. All PG&E Responses to data requests referenced in this testimony are also included in Exhibit B.

1 of energy efficiency in Tranche #1 starting in 2018— six years before the closure of Unit 1 of
2 Diablo Canyon and seven years before Unit 2 closes.

3 PG&E and the CAISO have emphasized that overgeneration from renewables is already
4 creating a problem.¹⁶ With the support of the CAISO, PG&E and the other investor-owned
5 utilities have proposed new time-of-use periods in general rate cases¹⁷ or rate design windows¹⁸
6 that reflect substantial overgeneration potential during the middle of the day in the spring
7 months. This mid-day overgeneration is depicted as the well-known “duck curve.”¹⁹ Adding
8 energy efficiency and new renewables beyond current needs before the sequential retirement of
9 the Diablo Canyon units will only exacerbate this problem between 2019 and 2025.²⁰

10 When asked how the proposed Tranche #1 energy efficiency would impact
11 overgeneration, PG&E admits that new energy efficiency projects, like those proposed in
12 Tranche #1, will “not reduce the frequency and magnitude of overgeneration and would likely
13 increase the frequency and magnitude of overgeneration.”²¹ PG&E also indicates that procuring
14 a mix of wind, solar, and other supply-side nondispatchable GHG-free energy resources would
15 result in even greater frequency and magnitude of overgeneration.²² PG&E has not, however,
16 addressed this issue or the impact of incremental procurement of energy efficiency and
17 renewables on renewable integration challenges in its testimony. Based on PG&E’s own

¹⁶ Overgeneration is supply in excess of load.

¹⁷ See, e.g., A. 16-06-013.

¹⁸ See, e.g., A. 16-09-003.

¹⁹ See Flexible Resource Adequacy Criteria and Must Offer Obligations – Phase 2 presentation (July 2, 2015) by Karl Meeusen, at slide 10, available at:

https://www.caiso.com/Documents/Agenda_Presentation_FlexibleResourceAdequacyCriteria_MustOfferObligations_WorkingGroup.pdf.

²⁰ See PG&E Response to TURN 001-Q07

²¹ PG&E Response to TURN 001-Q07.

²² See PG&E Response to TURN 001-Q07.

1 analysis, approving procurement for deliveries commencing before 2026 will only make Diablo
2 Canyon an even poorer fit for PG&E’s bundled customers. This is contrary to the interest of *all*
3 ratepayers and the Commission should not approve this request.

4 **2. The Uncertainty Identified By PG&E Also Dictates Postponement of**
5 **Procurement**

6 PG&E states that there is great uncertainty surrounding its future electric supply needs.²³
7 The uncertainty is based on new policies related to renewable and other GHG-free resources, the
8 growth and development of distributed energy resources, the growth of Community Choice
9 Aggregators (“CCAs”) and Direct Access (“DA”) service,²⁴ and potential new legislative
10 mandates for clean energy supply.²⁵ In fact, based on these trends, PG&E correctly comments
11 that:

12 [i]n the face of this uncertainty, the natural reaction is to defer making any new
13 GHG-free resource additions until a GHG emissions reduction compliance
14 obligation is adopted by the Commission and, with the passage of time, there is
15 sufficient clarity on the future resource mix and the size of its customer loads.²⁶

16 Yet, PG&E asserts that this would be a “short sighted tactic”²⁷ that could undermine California’s
17 environmental goals. Instead, PG&E urges that Commission to take “bold steps”²⁸ and approve
18 its “unprecedented” request for procurement authority at an initial cost of at least \$1.3 billion to
19 be paid by all ratepayers plus significant, additional, unknown and as-yet unknowable
20 procurement costs – also to be paid by ratepayers.²⁹

²³ See PG&E Testimony, at 1-3.

²⁴ While the level of permitted DA service is currently capped, that may change and its potential for growth is uncertain.

²⁵ See PG&E Testimony, at 3-2.

²⁶ PG&E Testimony, at 1-7.

²⁷ *Id.*, at 1-8.

²⁸ *Id.*

²⁹ *Id.*, at 10-3.

1 **a. PG&E’s Own Forecasts Support a Delayed Commission**
2 **Decision on Replacement Procurement**

3 However, in 2017, the State has no need to rush into approving procurement that is not
4 required until mid-to-late 2025 —at the earliest. Specifically, PG&E presents load and resource
5 forecasts from 2017 to 2030 that show a very large reduction in sales to bundled customers
6 between 2017 and 2025.³⁰ Notably, in two load scenarios—Reference Case and Low Load—
7 PG&E projects that its bundled metered load will continue to decline over the 2025 to 2030
8 period, while the High Load scenario shows an increase from 51,564 GWh to 53,847 GWh.³¹
9 However, the net “DCPP Need” declines in all three scenarios over that period.

10 **b. Growing CCA and Other Departing Load Also Reduce the**
11 **Need for Replacement Procurement**

12 Similarly, growing CCA and other departing load could drastically reduce the need for
13 additional procurement. PG&E predicts CCA/DA sales to grow significantly from 2017 to
14 2030.³² Conversely, PG&E predicts its bundled sales will shrink significantly over those same
15 years.³³

16 In its own Reference Case, PG&E projects CCA loads will increase by 24,869 GWh
17 between 2017 and 2030—one-third more than the historic output from Diablo Canyon and 50%
18 more than what PG&E projects for a relicensed Diablo Canyon.³⁴ PG&E's Reference Case
19 shows its need for its bundled customers³⁵ drops from over 30,000 GWh in 2017 with Diablo

³⁰ PG&E Testimony, at 2-10 (Table 2-2).

³¹ *Id.*

³² From approximately 14,437 GWh in 2017 to somewhere between 33,130 GWh to 41,019 GWh in 2030. PG&E Testimony, at 2-10.

³³ From 67,602 GWh in 2017 to anywhere between 53,847 GWh to as little as 29,263 GWh in 2030. PG&E Testimony, at 2-10.

³⁴ PG&E Testimony, at 2-10 (Table 2-2). Growth attributed to CCAs due to DA cap.

³⁵ Defined as DCPP Need plus Other.

1 Canyon to under 9,000 GWh in 2025 and 2030 without Diablo Canyon.³⁶ Reopening of DA
2 before 2025 would further reduce PG&E’s bundled service requirements and its need for the
3 requested procurement.

4 **c. Changes in Technology Could Further Reduce the Need for**
5 **Replacement Procurement**

6 The growing viability of new, emerging technologies also argues against approving
7 procurement that is not needed for many years. As just one example, “shift” DR combined with
8 energy efficiency measures holds significant promise as potentially synergistic GHG-free
9 resources.³⁷ Such resources can be shaped to minimize renewable integration issues, and
10 according to a recent draft report prepared for the Commission “by 2025, the value of Shift DR
11 resources was shown to increase as more renewables are built to satisfy the 40 percent RPS
12 requirements.”³⁸ Notably, the draft report found that “[shift resources] could smooth net load
13 ramps associated with daily patterns of solar energy generation.”³⁹

14 In addition, resources such as storage could further change how combinations of different
15 resources serve load. A premature decision in this docket could preclude or severely limit the
16 development of these or other alternative resources.

17 The Energy Division’s recent proposal for developing assumptions and scenarios for the
18 IRP illustrates the degree of uncertainty surrounding technology development and deployment,

³⁶ PG&E Testimony, at 2-13 (Table 2-3).

³⁷ Lawrence Berkeley National Laboratory, *Final Report on Phase 2 Results, 2015 California Demand Response Potential Study Charting California’s Demand Response Future*, Final Draft (November 14, 2016) (“LBNL DR Potential Study Draft Final Report”), at 5-24-5-26, available at: <http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442451541>.

³⁸ LBNL DR Potential Study Draft Final Report, at 5-16.

³⁹ *Id.*, at 3-13.

1 as well as state and federal policy decisions.⁴⁰

2 Such uncertainty in and of itself does not preclude making resource commitments, but it
3 does present a more complex, interrelated situation than addressed by the PG&E Application.
4 This uncertainty argues against relying on a set of simple tables of forecasted load and resources
5 in a single utility application with no input from other key agencies (such as the CEC, the
6 CAISO and CARB) or other load-serving entities as the basis for PG&E’s biggest single
7 procurement decision for the next decade. Given the wide range of potential outcomes, and the
8 fact that additional procurement is not necessary now, the Commission should defer approval of
9 new procurement to the IRP, and any replacement procurement, if approved, should not occur
10 until mid-to-late 2025.

11 **3. Deferring Consideration of PG&E’s Procurement Allows the**
12 **Commission to Consider the Requests in Proceedings Developed to**
13 **Address the Exact Issues That Need to Be Addressed in Approving**
14 **PG&E’s Procurement Request**

15 Because procured resources coming online before Diablo Canyon closes would create
16 additional overgeneration problems, PG&E can and should make its procurement request in the
17 appropriate relevant proceedings, such as the EE proceeding⁴¹ and the IRP proceeding where this
18 issue can be more effectively addressed.⁴²

⁴⁰ See CPUC Energy Division, “Proposed Approach to Developing 40 X 30 Reference Plan for 2017,” Integrated Resource Planning Workshop Presentation, December 12, 2016, available at: http://www.cpuc.ca.gov/uploadedFiles/CPUC_Website/Content/Utilities_and_Industries/Energy/Energy_Programs/Electric_Power_Procurement_and_Generation/LTPP/IRP_Workshop_2016-12-16_ScenDev_rev.pdf.

⁴¹ In PG&E’s case, A.17-01-015, filed January 17, 2017.

⁴² See R.16-02-007.

1 **a. The Commission Already Has a Proceeding and a Process**
2 **Underway to Address Utility Requests for Energy Efficiency**
3 **Procurement**

4 The Commission authorizes funding for electricity-related EE activity carried out by
5 various program administrators, including PG&E.⁴³ Electric EE funds are first tracked in IOU
6 accounts⁴⁴ and then collected from customers via the Public Purpose Program (“PPP”) NBC
7 component of IOU distribution rates.

8 The Commission has developed a set of rules to administer ratepayer-funded EE
9 activity.⁴⁵ The Commission amends these rules in regular rulemaking proceedings. In its current
10 such proceeding,⁴⁶ the Commission set forth a detailed framework for EE procurement going
11 forward and the Commission directed the IOUs and CCAs to file applications for EE activities
12 on January 15, 2017.⁴⁷ PG&E filed an application for EE activities on January 17, 2017 and that
13 application launches a proceeding to review PG&E’s EE business plan that outlines PG&E’s EE
14 activities for the years 2018-2025.⁴⁸

15 First, all EE procured to replace Diablo Canyon should be reviewed in the Commission’s
16 ongoing EE proceedings and should be subject to the Commission’s then current rules for EE.
17 For example, in R.13-11-005, the Commission adopted new requirements related to Third Party
18 EE programs. These requirements include: (1) bidding out the programs through a competitive
19 solicitation; (2) having the bidders both design and implement the program; (3) maintaining at

⁴³ See Cal. Pub. Util. Code § 381.

⁴⁴ Procurement Energy Efficiency Balancing Accounts.

⁴⁵ See, e.g., CPUC, Energy Efficiency Policy Manual, Version 5, July 2013 (“CPUC Energy Efficiency Manual”), available at [http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy - Electricity and Natural Gas/EEPPolicyManualV5forPDF.pdf](http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/EEPPolicyManualV5forPDF.pdf).

⁴⁶ See R.13-11-005.

⁴⁷ See D.16-08-019, at 109-110 (Ordering Paragraphs 2 and 6).

⁴⁸ See A.17-01-015.

1 least 25% of the IOU’s portfolio as Third Party programs; and (4) providing a plan to transition
2 60% of the IOU’s portfolio to Third Party programs by 2020.⁴⁹ The Commission should not
3 authorize additional procurement that is not subject to these requirements.

4 Second, the Commission requires use of the Total Resource Cost (“TRC”) cost-
5 effectiveness test.⁵⁰ Instead, PG&E has chosen to use the Program Administrator Cost (PAC)
6 test⁵¹ because “[t]he avoided cost calculator does not necessarily apply to evaluations of utility
7 solicitations.”⁵² PG&E “does not know whether the winning EE programs and projects resulting
8 from the Tranche #1 and Tranche #2 procurements would have, either as a group or when
9 evaluated collectively with the EE portfolio, a TRC test benefit-cost ratio of 1.0.”⁵³ The
10 Commission should require PG&E to provide TRC test results for energy efficiency procured to
11 replace Diablo Canyon and also test results for all cost-effectiveness tests required by the
12 Commission for energy efficiency at the time the procurement is approved. In addition, all such
13 energy efficiency should have to pass all cost-effectiveness tests in effect at the time the
14 procurement is approved.

15 Third, the Commission follows a goal-setting process for the EE activity it authorizes.
16 The goals are derived from a quantitative analysis, developed by the CEC, based on the potential
17 EE that is possible to achieve.⁵⁴ This analysis incorporates technical and financial constraints to
18 develop a more accurate estimate. The analysis also factors into the CEC’s demand forecast.

⁴⁹ See D.16-08-019, at 67-75.

⁵⁰ See CPUC Energy Efficiency Manual, at 17.

⁵¹ See PG&E Testimony, at 4-5.

⁵² D.16-06-007, at 24 (Conclusions of Law 2).

⁵³ PG&E Response to ORA 009-Q05.

⁵⁴ Additional Achievable Energy Efficiency.

1 PG&E’s proposal to spend an additional \$1.3 billion in Tranche #1, with potential for
2 more spending in Tranche #2, does not follow such a goal setting process. This additional
3 spending presents a risk of cannibalizing the potential savings that various program
4 administrators, including PG&E, are tasked with obtaining pursuant to the Commission’s
5 existing EE proceedings. The Commission recognized this risk when discussing the competitive
6 procurement to replace power from the unexpected shutdown of SONGS:

7 it is worth noting that one of the major issues for the design of these types of
8 efforts is how to ensure that projects proposed under the all-source solicitations
9 are not just cannibalizing projects that otherwise would have been funded and
10 conducted through the programmatic efforts discussed in the context of this
11 proceeding [R.13-11-005].⁵⁵

12 **b. The Commission Already Has a Proceeding to Address Long-**
13 **Term Utility Procurement**

14 PG&E should be required to pursue authorization to procure additional GHG-resources if
15 they are needed in the IRP. The IRP Rulemaking⁵⁶ is intended to provide a single venue to
16 comprehensively determine utility procurement requirements, and to eliminate duplication. In
17 SB 350, the Legislature directed the Commission to avoid duplicative, overlapping procurement
18 planning:

19 (d) In order to eliminate redundancy and increase efficiency, the process
20 adopted pursuant to subdivision (a) shall incorporate, and not duplicate,
21 any other planning processes of the commission.⁵⁷

22 Instead, PG&E’s request, outside of the IRP, for approval of resource procurement that
23 could fill the needs of its bundled customers for over a decade, increases redundancy and
24 decreases efficiency. PG&E admits that “achieving California’s GHG emissions targets,

⁵⁵ D.16-08-019, at 70-71.

⁵⁶ See R.16-02-007.

⁵⁷ Cal. Pub. Util. Code § 454.52.

1 minimizing impacts on the electric bills of customers, and ensuring system and local reliability”
2 are the “objectives” for the IRP process,⁵⁸ and that “[t]he IRP proceeding is the appropriate
3 venue to consider the impacts of Diablo Canyon’s retirement on these objectives.⁵⁹ PG&E even
4 recognizes that reviewing its procurement request in the IRP proceeding would allow for greater
5 coordination with the Commission, the CAISO, and other stakeholders.⁶⁰

6 The IRP Rulemaking is currently underway at the Commission. In the IRP Scoping
7 Ruling, the Commission identified two new, required elements for long-term procurement
8 planning: “portfolio optimization and steadily decreasing GHG emissions in the electric sector
9 from now through 2030.”⁶¹ It further states:

10 These elements create the opportunity to modify our resource planning so that
11 portfolios of resources that achieve optimization and greenhouse gas emissions
12 reductions can be presented to the Commission for decision-making.⁶²

13 The PG&E Proposal frustrates this intent by seeking approval of solicitations that will
14 meet much of PG&E’s bundled needs for at least a decade outside of this analytic framework
15 based on its own defective analysis. Because the IRP will require the steady decrease of GHG
16 emissions, PG&E’s desire to reduce GHG emissions can be addressed there as well.

17 Furthermore, PG&E recognizes that “there will be significant challenges associated with
18 renewable resource integration, and that these challenges must be reviewed and resolved through
19 the planning process in the IRP and in collaboration with the CAISO.”⁶³ Instead of considering

⁵⁸ PG&E Testimony, at 3-12.

⁵⁹ PG&E Testimony, at 3-13.

⁶⁰ PG&E Testimony at 1AChA-8 (“Parties also envision the IRP as a way to work with the Commission, CAISO, and other stakeholders to review and resolve issues associated with resource integration and system and local reliability”).

⁶¹ IRP Scoping Ruling, at 6.

⁶² IRP Scoping Ruling, at 6-7.

⁶³ PG&E Testimony, at 3-13.

1 these impacts in a comprehensive manner in collaboration with relevant state agencies in the IRP
2 proceeding, PG&E seeks approval of procurement in this docket even though such procurement
3 has a high likelihood of making this problem worse. PG&E then proposes that the resulting
4 increased renewable integration challenges and oversupply be addressed in the IRP docket: “the
5 results of the Tranche #1 and Tranche #2 procurement will be reflected in [PG&E’s] integrated
6 resource plans in the IRP proceeding at the Commission.”⁶⁴ PG&E should not be allowed to
7 exacerbate renewable integration now and leave solutions for consideration in the IRP.

8 Considering future procurement in the IRP will also ensure consideration of more robust
9 modeling and remove any confusion created by inconsistent forecasts. For example, as
10 discussed more below, PG&E’s load forecasts in this proceeding are currently inconsistent with
11 those in the Long-Term Procurement Plan, the Integrated Energy Policy Report, and the RPS
12 Calculator. Also, in the IRP proceeding, the Commission will be better informed about the
13 expected loads for existing and emerging CCAs. It is not clear whether PG&E’s projected load
14 growth for CCAs includes a number of CCAs projected to begin providing service by 2018.

15 Moreover, the IRP requires utilities to file plans describing and ensuring that
16 procurement satisfies a least-cost, best-fit analysis. PG&E’s application bypasses a
17 comprehensive determination of need and analysis based on the most cost-effective, feasible
18 procurement. According to PG&E:

19 PG&E “does not claim that *each* tranche of procurement in the Joint Proposal ...
20 is the least-cost, best-fit portfolio of resources to serve PG&E’s customers and
21 meet PG&E’s renewable targets and California’s renewable and GHG goals. Nor

⁶⁴ PG&E Testimony, at 3-7 – 3-8.

1 does PG&E claim that the three tranches together are the least-cost, best fit
2 portfolio of resources to serve PG&E’s customers.⁶⁵

3 The Commission should not approve PG&E’s proposed procurement that does not comply with
4 PG&E’s statutory obligation to file an integrated resource plan that satisfies a least-cost, best-fit
5 analysis.⁶⁶

6 To put PG&E’s request into context, PG&E seeks billions of dollars of ratepayer funds,
7 on a nonbypassable basis, outside of the IRP State-mandated analytical framework. PG&E’s
8 proposal would render the IRP process largely meaningless for its customers for a decade.
9 Beyond just PG&E, approving this application could truncate the effectiveness of the IRPs for
10 other investor-owned utilities, as well as CCA and DA providers, by prematurely carving out a
11 set of resources without considering them within the context of the whole. The Commission
12 should reject PG&E’s proposal on this basis alone.

13 PG&E’s proposal offers only a minimal explanation for circumventing the IRP. PG&E
14 asserts that the IRP is in transition, and that “the interests of a deliberate transition away from
15 Diablo Canyon were best served by starting procurement and planning outside of the IRP before
16 it was finalized.”⁶⁷ The Joint Intervenors disagree. The Commission can manage the IRP to
17 provide a timely process for plan submittal and review.

18 Relying on the IRP process protects all ratepayers because it allows for coordination
19 among PG&E’s and other LSE’s IRPs; provides greater assurance that information on PG&E’s
20 needs and available resources is accurate and robust; and avoids having inconsistent results
21 created by multiple modeling and data streams in disparate proceedings.

⁶⁵ PG&E Response to SolarCity Data Request 002-Q03.

⁶⁶ See Cal. Pub. Util. Code §§ 454.51 and 454.52.

⁶⁷ PG&E Testimony, at 1AChA-9.

1 **B. PG&E’s Offers Little Support for Its “Unprecedented” Request** *(Witness:*
2 *Barbara Barkovich)*

3 **1. Problems With PG&E’s Load and Resource Forecasts**

4 The Commission should reject PG&E’s request because PG&E’s load and resource
5 forecasts are not reasonable. PG&E evaluates the need for Diablo Canyon replacement resources
6 using several scenarios that are based on forecasts of loads and sales.⁶⁸ The table below shows
7 the different forecasts, all relatively recent, from various public sources; they all differ from
8 PG&E’s forecasts in this docket (also included in the table).

9 Moreover, PG&E’s forecasts are internally inconsistent. Since PG&E’s analysis hinges
10 on its residual need calculation, these differences are troubling. The table below shows a
11 forecast difference of roughly 1,200 GWh to almost 2,000 GWh for 2030 between Chapters 2
12 and 3. Such a large difference represents roughly one-fourth to one-half of PG&E’s proposed
13 replacement procurement. The Commission should not base such important decisions on
14 analysis with inconsistencies of such magnitudes.

⁶⁸ *Id.*, at 2-8, *et seq.*

Table 1: PG&E Bundled Sales Forecasts (in GWh)

	2017	2025			2030		
		Low	Reference	High	Low	Reference	High
Diablo Canyon Chapter 2 (Tables 2-3 to 2-5)	67,602	33,907	43,854	51,564	29,263	43,613	53,847
Diablo Canyon Chapter 3 (Table 3-2)		33,907	43,854	51,564	28,014	41,991	51,989
2016 IEPR Update mid-demand mid-AAEE	70,991		70,887			n/a	
2016 IEPR Update mid-demand high-AAEE	70,766		69,847			n/a	
PG&E RPS Plan C2 (PG&E Preferred)	67,126		43,094			42,853	
PG&E RPS Plan C1 (based on LTPP)	67,126		60,369			59,118	
<i>note: 2030 bundled sales figures do not match between PG&E chapters 2 and 3</i>							

1 In addition, as discussed above, PG&E has not undertaken and does not propose to
2 undertake comprehensive, rigorous modeling to assess how it would serve its bundled customers
3 through its proposed resource portfolio in a least-cost/best-fit manner, while minimizing
4 renewable curtailment. Without comprehensive, rigorous modeling, it is impossible to determine
5 the overall effect of PG&E’s proposed procurement. For example, as discussed above, the 4,000
6 GWh procured in the first two tranches are likely to lead to further oversupply and possible
7 renewable curtailments as well as additional ramping needs for renewable integration. PG&E
8 has admitted as much, but has deferred addressing the consequences to the IRP.⁶⁹

9 In fact, based on the limited data PG&E does provide, PG&E’s proposed procurement
10 could create substantial excess resources. By focusing on an energy-only analysis and
11 determining Diablo Canyon need residually, PG&E shows that it has excess energy in 2025 and
12 2030 in the Low Load Scenario and excess energy in 2030 in its Reference Case.⁷⁰ Of course,
13 this analysis on the basis of GWh is simplistic. Yet, it is how PG&E has made its case and
14 PG&E even seeks to support its proposal by pointing out that in the Low Load Scenario, “annual
15 net sales are projected to be larger than the amount of DCPD generation projected to be needed to
16 supply PG&E’s bundled electric customers.”⁷¹

17 PG&E’s Low Load Scenario shows an excess of 729 GWh for bundled customer supply
18 in 2025⁷² In PG&E’s forecast for 2030, that excess supply is 1,312 GWh.⁷³ That is, in the Low

⁶⁹ See PG&E Testimony, at 3-13.

⁷⁰ The excess energy is labeled “Other.” See PG&E Testimony, at 2-13 – 2-15 (Tables 2-3 – 2-5).

⁷¹ PG&E Testimony, at 2-16.

⁷² See PG&E Testimony, at 2-16 – 2-17 (2025: 4,713 GWh from Diablo Canyon minus 3,984 GWh net sales equals 729 GWh; 2030: 4,312 GWh from Diablo Canyon minus 5,624 GWh net sales equals a negative 1,312 GWh).

1 Load Scenario, if this Commission approves the requested procurement now, in 2030, PG&E
2 forecasts it will have 1,312 GWh of *excess* energy that would have to be sold into the open
3 power market, possibly at a loss. It is unreasonable for PG&E to commit to procurement so far
4 in advance of 2024 and 2025 that results in a 25% likelihood of over-procuring based on
5 PG&E's own analysis.⁷⁴

6 **2. There is No Showing That PG&E Can Procure Enough Energy**
7 **Efficiency to Satisfy Its Unprecedented Solicitation**

8 PG&E's forecast of additional EE is also problematic. For example, PG&E forecasts that
9 it will have 27,461 GWh of EE in 2030 in its Reference Scenario.⁷⁵ Adding 3,000 GWh in
10 Tranches #2 and #3 would increase the total to 30,461 GWh. This forecast is unrealistic in
11 comparison to PG&E's cumulative EE goal of 8,427 GWh for the 2016-2024 period, as set by
12 the Commission.⁷⁶ Similarly, PG&E's forecast of an incremental 2,065 GWh in 2017 is much
13 higher than the goal of 1,144 GWh for 2017 set by the Commission.⁷⁷

14 Even considering SB 350's goal of doubling of EE by 2030, PG&E's forecast for its EE
15 results in this proceeding are extremely aggressive. If PG&E's EE forecast is not achieved by
16 2030, PG&E will need to procure even more GHG-free energy to meet its Tranche #2
17 commitment from renewables, which could exacerbate the renewable integration problem, or
18 from another source of GHG-free energy. The high uncertainty around achieving this goal, as

⁷³ See PG&E Testimony, at 2-16 to 2-17 (2025: 4713 GWh from Diablo Canyon minus 3,984 GWh net sales equals 729 GWh; 2030: 4312 GWh from Diablo Canyon minus 5,624 GWh net sales equals a negative 1,312 GWh).

⁷⁴ See PG&E Response to MCE_003-Q006 Attachment 01.

⁷⁵ 15,045 GWh of its EE is incremental programs, Codes and Standards, and SB 250 Impacts. See PG&E Response to Sierra_Club_001-Q08Atch01.

⁷⁶ See D.15-10-028, at 8.

⁷⁷ See PG&E Response to Sierra_Club_001-Q08Atch01.

1 desirable as it might be, requires that it be evaluated within the context of PG&E's *entire*
2 resource portfolio in the IRP and not in a one-off application.

3 PG&E has not demonstrated that it can acquire the incremental 3,000 GWh of EE it
4 proposes to acquire by 2024, which is a 62% increase over current goals from D. 15-10-028,⁷⁸ at
5 a price below the RPS-equivalent cap⁷⁹ of \$98/kW-year in 2025 dollars or \$82/kW-year in
6 levelized nominal 2016 dollars that it has proposed.⁸⁰ PG&E refers to the Tranche #1 target as a
7 "challenging 60% increase over current goals for the years 2019-2024."⁸¹ It has provided no off-
8 ramps if this third-party EE procurement is not feasible at this cost cap. Its only alternative is
9 utility-procured EE.⁸²

10 PG&E has not demonstrated how the EE proposed in this docket would compare to EE
11 approved in the EE docket.⁸³ Moreover, PG&E excludes non-PG&E Program Administrators
12 from providing EE to replace Diablo Canyon.⁸⁴ PG&E also proposes EE procurement that is
13 inconsistent with D. 16-08-019 which calls for a return to the use of net savings goals starting in
14 2018. A response to an ORA data request shows that the net to gross ratio is 0.7, thus the net
15 cumulative GWh savings from Tranche #1 through 2030 are 1,400 GWh.⁸⁵ However, with an
16 expected Useful Life of 11.8 years, some of this could have to be replaced by 2030 if
17 procurement starts in 2018. Finally, PG&E proposes to be able to adjust the RPS-based cost cap

⁷⁸ See PG&E Response to MCE_002-Q14.

⁷⁹ See PG&E Testimony, at 3-9 and 4-5.

⁸⁰ See PG&E Response to TURN_001-Q14.

⁸¹ PG&E Response to ORA_002-Q04.

⁸² P See G&E Testimony, at 4-4.

⁸³ See R.13-11-005. In its EE Business Plan filed January 17, 2017 in A. 17-01-015, PG&E states that it does not anticipate that energy savings enumerated in this proceeding will count toward the energy savings goal in the Business Plan. EE Business Plan at 16. PG&E was silent on this point in this proceeding.

⁸⁴ See PG&E Testimony, at 4-4.

⁸⁵ See PG&E Response to ORA 009-Q02.

1 for EE before the RFO.⁸⁶ The cost implications for consumers from any adjustment to the cost-
2 cap are not addressed.

3 **C. Additional Concerns with Each Tranche (Witness: Barbara Barkovich)**

4 **1. Tranche #1**

5 PG&E has admitted that in 2024 and prior to 2024, procurement of EE “would likely
6 increase the frequency and magnitude of overgeneration.”⁸⁷ PG&E, however, has not addressed
7 this issue or the impact of incremental procurement of EE on renewable integration in its
8 testimony. Any EE procurement should focus on and prioritize EE measures that reduce
9 renewable integration issues, and penalize those EE measures that exacerbate renewable
10 integration issues. This can be done by considering the time of day that EE savings occur under
11 different measures. While PG&E, in a data response, said it would score EE bids with “time-
12 differentiated avoided costs,”⁸⁸ there may not be enough EE in the late afternoon and evening
13 hours to meet the purported goals of the Application.

14 **2. Tranche #2**

15 There is no evidence of what other “GHG-free” resources will be available to satisfy the
16 procurement for Tranche #2 or what their costs will be. Clearly RPS-eligible resources would
17 qualify, but many of these will also increase renewable integration challenges.⁸⁹ Imported
18 hydroelectricity could be an option, as could existing RPS resources, such as ones coming off
19 contracts. PG&E only states that eligible resources for Tranche #2 are EE, RPS-eligible

⁸⁶ See PG&E Testimony, at 4-5.

⁸⁷ PG&E Response to TURN 001-Q07.

⁸⁸ PG&E Response to CLECA_005-Q05.

⁸⁹ While PG&E describes that retiring Diablo Canyon will reduce some renewable curtailment, it does not address the integration issues from its proposal that could increase renewable curtailment. See PG&E Testimony, at 3-8.

1 resources, and GHG-free resources, and ineligible resources are out-of-state nuclear, unbundled
2 renewable energy credits (“RECs”), and energy storage that is not combined with another
3 resource that provides GHG-free energy or energy savings.⁹⁰

4 Under the proposal, Diablo Canyon replacement resources must also be able to be
5 delivered to customers in PG&E’s service territory.⁹¹ It is therefore troubling that PG&E
6 includes Wyoming wind in its RPS-based cost cap for EE.⁹² It says that it includes 45%
7 Wyoming wind in the cap,⁹³ including:

8 a cost component for energy-only transmission, which is the lowest cost
9 transmission from the RPS calculator v6.2. Energy from Wyoming wind is
10 assumed to be delivered into the SCE service territory. It is assumed this energy
11 will able (sic) to be delivered to customers in PG&E’s service territory via
12 PG&E’s Path 26 interconnection with SCE’s service territory.⁹⁴

13 However, while RPS resources may be energy-only, energy-only resources are not
14 required to be deliverable. That is the whole point of the energy-only status.⁹⁵ Thus, it is
15 problematic that PG&E includes this out-of-state wind as meeting a deliverability requirement.

16 3. Tranche #3

17 The Joint Intervenors oppose approval of a Tranche #3 in this docket and object to
18 PG&E’s proposed recovery of the Tranche #3 costs as described further in this testimony.⁹⁶
19 PG&E’s proposed Tranche #3 would increase its RPS purchases to 55% of its load starting in
20 2031 and so would not affect PG&E’s procurement until after 2030.⁹⁷ The uncertainty as to

⁹⁰ See PG&E Testimony, at 5-2, 5-3.

⁹¹ *Id.*, at 5-3.

⁹² See PG&E Testimony, at 3-9.

⁹³ See PG&E Workpapers supporting Chapter 3: Proxy Values

⁹⁴ PG&E Response to CLECA_001-Q05.

⁹⁵ See D.11-12-052, at 14.

⁹⁶ The Joint Intervenors do not have a joint position on the desirability of PG&E’s Tranche #3 proposal.

⁹⁷ See PG&E Testimony, at 3-1.

1 PG&E’s load and available resources so far in the future renders a commitment for such
2 procurement in 2017 unreasonable. Renewable energy may have attained such penetration by
3 2030 such that a 55% standard may be outdated by then. There may also be superseding
4 regulatory programs or technologies that better address the state’s GHG reduction objectives.

5 **D. No Replacement Procurement Should Be Authorized Here; If Any, At Most,**
6 **1,000 GWh of Procurement Should Be Considered as a Backstop Allowance**
7 **to the IRP** (*Witness: Barbara Barkovich*)

8 As discussed above, there is no need to approve any replacement procurement at this
9 time. In addition, PG&E has not demonstrated that the procurement process it proposes could or
10 would ensure a comprehensive analysis of need and that least-cost, best-fit resources are
11 procured. The IRP is intended to address those issues much more comprehensively.

12 Eight-years is ample time to authorize procurement of any necessary replacement
13 resources in the IRP. If the Commission has concerns that this timeline is inadequate, it could
14 provide a backstop authorization for limited procurement in 2022 for deliveries commencing in
15 2025. If the Commission adopts such an approach, it should also direct PG&E to provide annual
16 updated load and resource forecasts. That way, if better information is not available from the
17 IRP, the Commission can use these updates to assess in 2021 whether the backstop procurement
18 is justified.

19 Any such backstop procurement should be subject to the following conditions. First, the
20 solicitation should not occur until mid-2022 and the resulting resources should begin delivery no
21 sooner than mid-to-late 2025. This will provide time for load and resource conditions to be
22 better known prior to entering into any commitments. This will also ensure that the procured
23 resources, if new, that do come online do not exacerbate overgeneration prior to 2025.

24 Second, the procurement should be open to all types of resources, including demand
25 response, EE, and GHG-free energy resources, including new and existing RPS resources and

1 out-of-state hydro. As PG&E acknowledges, there are “significant uncertainties about the scale
2 and timing of additional GHG-free resources (such as RPS, EE, and distributed generation) that
3 will be developed by 2025.”⁹⁸ There is no need in 2017 to limit the types of resources that may
4 be procured in 2022 for delivery in mid-to-late 2025 or after.

5 Third, the quantity of approved procurement should be limited to 1,000 GWh. Given the
6 uncertainty in PG&E’s need for additional energy,⁹⁹ approving any more than this amount of
7 procurement now would be premature and unreasonable.

8 Fourth, any procurement approved in this proceeding for solicitation in 2022 should be
9 subject to confirmation or change in 2021 based on the outcomes in the IRP Rulemaking, other
10 relevant proceedings, and PG&E’s annual load and resources updates. This provides some
11 opportunity to harmonize the procurement decision with other utility procurement requirements,
12 including the loading order.¹⁰⁰ To the extent that PG&E needs are greater than this amount,
13 additional procurement can be authorized in the IRP Rulemaking and other proceedings, such as
14 those addressing EE or demand response. Lastly, as described in the next section, the costs for
15 any procurement approved in the 2022–2025 timeframe should not be recovered from departing
16 load pursuant to any charge other than existing NBCs: e.g. the Power Charge Indifference
17 Adjustment (“PCIA”) for generation meeting the needs of bundled customers who later depart
18 and the PPP charge for EE.¹⁰¹

⁹⁸ PG&E Testimony, at 3-2.

⁹⁹ See PG&E Testimony, at 2-3 to 2-8.

¹⁰⁰ The Loading Order calls for procurement of energy efficiency and demand response first, then renewable resources, then conventional fossil generation. Pub. Util. Code § 454.5(b)(9)(C).

¹⁰¹ As stated in its testimony, EPUC does not agree that costs for any energy efficiency procurement approved in the 2022-2025 timeframe should be recovered from customer generation departing load.

1 **IV. PROPOSED EMPLOYEE PROGRAM**

2 The Joint Intervenors are not jointly submitting testimony on this issue.

3 **V. PROPOSED COMMUNITY IMPACTS MITIGATION PROGRAM**

4 The Joint Intervenors are not jointly submitting testimony on this issue.

5 **VI. RECOVERY OF LICENSE RENEWAL COSTS**

6 The Joint Intervenors are not jointly submitting testimony on this issue.

7 **VII. PROPOSED RATEMAKING AND COST ALLOCATION ISSUES (*Witnesses:***
8 ***Barbara Barkovich, Mark Fulmer, and Janis Pepper*)**

9 PG&E proposes to recover the costs of the procurement it would undertake by (1) using
10 the existing cost-recovery mechanisms for any additional EE expenditures authorized in
11 Tranches #1 and #2; and (2) using a new NBC (the “Clean Energy Charge”) to recover the costs
12 of additional RPS and “clean” resources procured in Tranches #2 and #3. PG&E proposes to
13 allocate certain resource adequacy (“RA”) and RPS “benefits” to customers paying the Clean
14 Energy Charge.¹⁰²

¹⁰² Energy Efficiency: PG&E proposes that the costs for the additional Energy Efficiency it seeks approval to procure in this proceeding in either Tranche #1 or Tranche #2 should be recovered through the PPP charge and that PG&E should be entitled to earn shareholder incentives for such Energy Efficiency in accordance with the existing mechanism adopted in D.13-09-023 for such procurement. *See* PG&E Testimony, at 4-10.

Generation procurement: PG&E proposes to use the Clean Energy Charge to recover the costs of additional RPS and “GHG free” resources procured in Tranches #2 and #3. The Clean Energy Charge is purported to reflect the “[n]et costs associated with executed Tranche #2 contracts for clean supply-side resources.” PG&E Testimony, at 5-11. All PG&E customers, except those whose CCA or ESP elects to self-provide clean supply-side resources, would be responsible for the Clean Energy Charge. In addition, “[n]et costs associated with Tranche #3 and future RPS procurement (excluding any RPS resources procured as part of a Tranche #2 RFO) would be a Tranche #3 component of the Clean Energy Charge...” PG&E Testimony, at 6-5. According to PG&E, the Clean Energy Charge is “intended to equitably allocate net costs and benefits using transparent and readily available market prices to determine the proper amount of the charge.” PG&E Testimony, at 5-13. In particular,

- any RA benefits arising from eligible Tranche-#2 procurement would be allocated using a “process similar to the current process used for resources that are eligible for [CAM] cost allocation,

1 If the Commission approves any additional EE procurement in this proceeding, cost
2 recovery for such EE should be in accordance with existing rules and mechanisms. Moreover, if
3 notwithstanding the inadequate support for such an outcome, the Commission approves any
4 additional procurement in this proceeding, the Commission should both allow (i) demand
5 response to compete, and (ii) demand response costs be recovered in accordance with existing
6 rules and mechanisms.

7 The Joint Intervenors oppose PG&E’s proposal to create a new NBC for procurement of
8 additional RPS and clean power in Tranches #2 and #3. Diablo Canyon only meets the energy
9 needs of PG&E’s bundled customers,¹⁰³ and any replacement should be the responsibility of
10 those bundled customers. Furthermore, PG&E has not demonstrated that proposed replacement
11 power is needed to support system or local reliability needs of other LSEs. Indeed, it has stated
12 the opposite.¹⁰⁴ Consistent with current Commission decisions, any additional generation
13 procurement authorized to replace Diablo Canyon should be recovered from departing load only
14 pursuant to the PCIA.

15 PG&E’s proposal to create a new NBC that allocates the cost of proposed Diablo Canyon
16 replacement power to departed load is contrary to state law and public policy, and is anti-
17 competitive. PG&E’s proposal to allocate “benefits” in the form of RA and RPS value does not

consistent with the CAM settlement agreement approved by the commission in Decision (D.) 07-09-044. PG&E Testimony, at 5-14.

- To the extent an eligible Tranche #2 and Tranche #3 resource “provides RPS-eligible energy and thus provides RECs, the RECs would be allocated to LSEs based on their load share in the energy delivery year.” PG&E Testimony, at 5-14.
- The “net costs” of the eligible Tranche #2 and Tranche #3 resource would be calculated by taking the all the costs associated with the contract and netting out CAISO market revenues received for energy output and (as applicable) ancillary services. *Id.*

¹⁰³ PG&E acknowledges this where it assesses “the percent of Diablo Canyon generation that would be needed by PG&E’s bundled electric customers.” PG&E Testimony, at 2-19.

¹⁰⁴ See PG&E Testimony, at 2-20 and 2-21.

1 justify the creation of such a charge, even assuming that the RPS value could be unbundled and
2 allocated, which it cannot be under current law. Moreover, PG&E’s proposed self-provision
3 mechanism does not solve the problems with PG&E’s proposal.

4 **A. The Costs of Any New Power Purchases Approved in This Proceeding**
5 **Should Be Recoverable From Departing Loads Only Pursuant to the PCIA.**
6 ***(Witnesses: Barbara Barkovich and Mark Fulmer)***

7 Diablo Canyon is a PG&E-owned power plant that supplies the energy needs of bundled
8 customers.¹⁰⁵ CCA and DA customer pay for their share of any above-market costs associated
9 with Diablo Canyon through the PCIA. If the Commission approved continued operations for a
10 relicensed Diablo Canyon, its generation would serve only bundled customers receiving service
11 after 2025. CCA and DA customers who began non-bundled service prior to 2025 should have
12 no stranded cost responsibility associated with the relicensed facility given the reconfiguration
13 and new capital investment in the facility. Those CCA and DA customers who departed bundled
14 service after 2025 would have Diablo Canyon costs and generation included in their vintages’
15 PCIA calculation.

16 Similarly, any generation procurement to replace Diablo Canyon will also only serve
17 bundled customers. Therefore, similar departing load rate treatment applies in accordance with
18 state laws and Commission policy: CCA and DA customers who began non-bundled service
19 prior to 2025 would have no stranded cost responsibility, while those who departed bundled
20 service after 2025 would have the costs of replacement generation included in their vintages’
21 PCIA calculation.

¹⁰⁵ See PG&E Testimony, at 2-19.

1 As is described in sections below, because the replacement power purchases proposed by
2 PG&E in this docket are not needed to address system or local reliability needs, the PCIA charge
3 (and not the CAM charge) is appropriate.

4 Instead, PG&E proposes to create a new NBC that would allocate the above-market costs
5 and certain benefits of its Diablo Canyon replacement generation procurement to customers of
6 other LSEs, even if they were not PG&E bundled customers when the procurement commitment
7 was made. PG&E seeks to justify creating this new charge by referencing other NBCs.
8 However, none of the bases for those other charges apply, and PG&E has provided no persuasive
9 justification for creating a new, additional, and anticompetitive NBC.

10 CCA and DA customers that have departed PG&E bundled service pay the PCIA based
11 on the difference between the cost of PG&E's portfolio to supply bundled customers, who left
12 for CCA and DA service in certain "vintage" years, and the "market price benchmark," based on
13 a set of indices intended to represent different market components. For example, if a set of
14 customers moved to CCA service in 2010 (as MCE's first tranche of customers did), then the
15 portfolio costs for that "vintage" of customer includes only procurement committed prior to
16 2010, including costs of longer-term power purchase agreements, costs of utility-owned
17 generation, fuel costs, some CAISO costs (except load-based costs), and costs of energy for
18 resources that are not subject to the Cost Allocation Mechanism ("CAM").

19 If the current methodology is used for the PCIA calculation, the Diablo Canyon
20 replacement power would simply become a part of the portfolio in a particular vintage. Those
21 customers who leave bundled service after PG&E has committed to replacement resources in a
22 particular year will have the cost of those resources PG&E committed to procuring before they
23 departed included in their vintage portfolio.

1 **B. State Law That PG&E References in an Attempt to Justify Its Clean Energy**
2 **Charge Proposal Does Not Apply** *(Witnesses: Barbara Barkovich and Mark*
3 *Fulmer)*

4 As support for proposing use of a new Clean Energy Charge to recover the costs of its
5 power procurement in Tranches #2 and #3, PG&E asserts that other NBCs are similar.¹⁰⁶ This is
6 not true.

7 The other NBCs that PG&E attempts to rely on differ from its proposed Clean Energy
8 Charge because those NBCs are explicitly authorized by statute for specific types of procurement
9 and apply to all utilities. Those charges are:

- 10 • procurement of capacity for system and local reliability, per Public Utilities Code
11 sections 365.1(c)(2) and 380(g);
- 12 • procurement of incremental renewable energy integration resources, per Public
13 Utilities Code section 454.51;
- 14 • procurement from combined heat and power plants 20 MW and under, per Public
15 Utilities Code section 2841(e);
- 16 • procurement of capacity from bioenergy projects supplied by the removal of
17 hazardous dead trees, per Public Utilities Code section 399.20.3(f).
- 18 • energy crisis-era costs pursuant to Public Utilities Code Section 366(2)(k)(1).

19 PG&E argues that the Clean Energy Charge is analogous to the CAM charge because it is
20 “consistent with Commission precedent”¹⁰⁷ and provides broad benefits that justify broad cost
21 recovery.¹⁰⁸ The CAM¹⁰⁹ represents “a net of the total cost of the contract minus the energy
22 revenues associated with dispatch of the contract”—referred to as the net capacity cost—

¹⁰⁶ See PG&E Testimony, at 5-11.

¹⁰⁷ PG&E Testimony, at 5-13 and 5.14.

¹⁰⁸ *Id.*

¹⁰⁹ PG&E refers to the CAM as the New Systems Generation Charge.

1 associated with certain new resources contracted (or owned) by the utility.¹¹⁰ It is imposed on all
2 customers within an IOU’s service area – bundled, DA, or served by a CCA, but only applies
3 under specific, limited circumstances. Specifically, Public Utilities Code Section 365(c)(2)(A)
4 provides that CAM treatment is available for “generation resources that the commission
5 determines are needed to meet *system or local area reliability needs* for the benefit of all
6 customers in the electrical corporation’s distribution service territory.”¹¹¹ Section 365(c)(2)(C)
7 requires that “[t]he resource adequacy benefits of generation resources acquired by an electrical
8 corporation pursuant to [the CAM] be allocated to all customers who pay their net capacity
9 costs.”¹¹²

10 PG&E’s testimony does not contend that its proposed Tranche #2 or #3 power
11 procurement is needed to meet any system or local reliability needs. PG&E admits in testimony
12 that Diablo Canyon’s proposed closure will not create local reliability issues, unlike the closure
13 of the SONGS.¹¹³ PG&E also does not anticipate that there would be a system reliability issue
14 until 2030, and PG&E posits that “there will be ample time to address any incremental system
15 capacity needs in the Commission’s IRP proceeding.”¹¹⁴ Thus, the resources procured to replace
16 Diablo Canyon do not meet any reliability needs that would support the use of a CAM-type
17 NBC. The proposed Clean Energy Charge is not analogous to the CAM.

18 Public Utilities Code section 454.51 provides that the net costs for resources procured to
19 support renewable integration can be recovered pursuant to the CAM.¹¹⁵ PG&E attempts to use

¹¹⁰ See D.06-07-029, at 26.

¹¹¹ Cal. Pub. Util. Code § 365(c)(2)(A) (emphasis added).

¹¹² Cal. Pub. Util. Code § 365(c)(2)(C).

¹¹³ See PG&E Testimony, at 2-21.

¹¹⁴ PG&E Testimony, at 2-22.

¹¹⁵ See Cal. Pub. Util. Code § 454.51.

1 this provision to support its Clean Energy Charge;¹¹⁶ however, the Clean Energy Charge is not
2 intended to recover any costs of resources that help with renewable integration. Rather, PG&E
3 seeks to spread the costs of procurement of GHG-free energy.

4 PG&E acknowledges the possible need for additional flexible resources to address
5 renewable integration. However, PG&E does not seek authority to procure renewable
6 integration resources, despite the fact that renewable integration issues will in all likelihood be
7 exacerbated by PG&E’s replacement power proposal. Instead, PG&E defers this issue to the
8 IRP.¹¹⁷ In addition, there is a “self-provision” option in Section 454.51 that allows CCAs to
9 avoid any such integration costs. Again, Section 454.51 provides no support for PG&E’s
10 proposed Clean Energy Charge for Diablo Canyon replacement power.

11 Further, NBCs mandated for CHP and bioenergy projects are not appropriate for other
12 types of projects. There are orders, procedures, and additional Commission requirements that
13 apply with respect to CHP and bioenergy projects that would have to be followed in order for
14 any of these types of resources to qualify for the related NBC treatment.¹¹⁸

15 Public Utilities Code section 366.2(k)(1) addresses Energy-Crisis era costs that are
16 unrelated to PG&E’s Diablo Canyon replacement proposal as well as broader costs deemed by
17 the Commission to provide broader statewide or regional benefits.¹¹⁹ However, importantly,
18 Public Utilities Code section 366(a)(1)(5), which is part of the same code section, states that the

¹¹⁶ See PG&E Testimony, at 5-12.

¹¹⁷ See PG&E Testimony, at 3-13.

¹¹⁸ If bioenergy resources or GHG-free CHP resources were procured as part of Tranche #2 or #3, any Commission decisions requiring nonbypassable charge for their procurement would apply for those resources alone, not for the rest of the non-energy efficiency Tranche #2 and #3 procurement. However, since PG&E has met its CHP goal and the bioenergy charge is only for five years, they are unlikely to be procured as part of Tranche #2 or #3.

¹¹⁹ See Cal. Pub. Util. Code § 366.2(k)(1).

1 CCA shall be solely responsible for procurement to serve its customers “except where other
2 generation procurement arrangements are expressly authorized by statute.”¹²⁰ PG&E’s proposed
3 Diablo Canyon replacement is not “expressly authorized by statute.” Thus, PG&E citation of
4 Section(k)(1) is inapposite.

5 Finally, the last sentence of Public Utilities Code section 366.3 states:

6 The commission shall also ensure that departing load does not experience any cost
7 increases as a result of an allocation of costs that were not incurred on behalf of
8 the departing load.

9 This sentence prohibits exactly what PG&E is proposing to do here – to impose a charge on
10 departed load for costs that were not incurred on behalf of that departed load. Thus, Section
11 366.3 prohibits the Clean Energy Charge proposed by PG&E.

12 C. **GHG Benefits Do Not Justify PG&E’s Anticompetitive Clean Energy Charge**
13 **Proposal** (*Witnesses: Barbara Barkovich and Mark Fulmer*)

14 PG&E argues that it is appropriate to create the new nonbypassable Clean Energy Charge
15 to support PG&E’s proposed power procurement in Tranches #2 and #3 because the procurement
16 of GHG-free power to replace Diablo Canyon produces a statewide benefit and facilitates
17 achievement of the state’s GHG reduction goals.¹²¹ However, this argument is unpersuasive and
18 PG&E’s proposal is anticompetitive.

19 SB 350 requires a 40% reduction in GHG from 1990 levels by the electric sector by the
20 year 2030 pursuant to a program administered by the CARB.¹²² Pursuant to this law, each LSE,
21 including CCAs and ESPs, are subject to increasing GHG requirements.¹²³ The IOUs are not

¹²⁰ Cal. Pub. Util. Code § 366.2(a)(1)(5).

¹²¹ See PG&E Testimony, at 3-1.

¹²² See Cal. Pub. Util. Code § 454.52(a)(1)(A); available at:
https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32

¹²³ See Cal. Pub. Util. Code § 454.52(a)(1)(B).

1 given a greater GHG-reduction burden than any other LSE, and they should not be allotted
2 special treatment (i.e., imposition of compliance costs onto other entities) for meeting any State
3 GHG reduction regulations.

4 Moreover, unlike the utilities, LSEs such as CCAs and ESPs cannot spread the “above-
5 market” procurement costs related to *their* compliance with RPS and GHG emission offset
6 requirements to another LSE’s customers. Consistent with the fact that all LSEs including
7 utilities, CCAs, ESPs and municipal utilities must meet applicable RPS and GHG emission offset
8 requirements, there is no explicit statutory directive for the Commission to allow utilities to use
9 NBCs to spread the costs of their GHG-free procurement to the customers of other LSEs, and no
10 policy justification for the Commission to do so.

11 Further, PG&E’s proposal is to exceed the GHG emission reductions mandated by state
12 law. PG&E characterizes its Tranche #3 proposal as “an unprecedented voluntary
13 commitment.”¹²⁴ Other LSEs, as well as California municipalities, businesses, and residents,
14 also have and will continue to undertake voluntary steps beyond applicable state mandates to
15 reduce GHG emissions, and they are not able to require PG&E’s bundled customers, their
16 competitors or their neighbors to shoulder the above-market costs of these purchases.

17 PG&E has attempted to use an analogy of the allocation of CHP costs to support its
18 arguments for a NBC for its voluntary GHG-free and added RPS procurement, but the analogy is
19 inapt. PG&E witnesses state that in D.10-12-035,

20 [the] Commission also noted that to the extent only bundled electric customers
21 bear the costs for programs that benefit the entire service area [in this case, the

¹²⁴ PG&E Testimony, at 3-1.

1 GHG reductions associated with CHP], CCA and DA service providers would
2 receive an ‘unfair advantage’ over utilities.”¹²⁵

3 The key difference between PG&E’s current proposal and the cited CHP decision is the
4 treatment of competitiveness among LSEs. In the case of the CHP decision, but for the
5 application of the CAM charge, the investor-owned utilities would have had a statutory
6 obligation to purchase CHP power at perhaps above-market prices while CCAs and ESPs would
7 be spared the obligation. The Commission could have in theory “leveled the playing field” by
8 imposing analogous CHP purchase requirements on CCAs and ESPs, but instead chose to have
9 the full weight of the mandate met by utility procurement. Because of this approach, to maintain
10 a level playing field between the utilities and non-utility LSEs, the Commission chose to use the
11 CAM, involving a charge spread to *all* distribution system customers, to the net capacity costs of
12 these qualifying CHP contracts. The circumstance being addressed here is completely flipped:
13 PG&E’s procurement portfolio is being impacted by its own choices, not the imposition of a
14 legislative or even a Commission mandate. Here, forcing other LSEs to pay for a portion of
15 PG&E’s procurement costs, be they GHG-free or RPS-eligible, or not, would in fact undo what
16 D.10-12-035 was trying to prevent: giving one LSE a competitive advantage over another.

17 **D. PG&E’s Proposal to Allocate the Benefits Associated With the Above Market**
18 **Costs Applied to Other LSE Customers Does Not Cure the Problems With**
19 **the Proposal** (*Witnesses: Barbara Barkovich and Mark Fulmer*)

20 Besides the proposal to allocate unneeded RA credits from the replacement power,
21 PG&E also suggests that the RECs associated with RPS-eligible Diablo Canyon replacement
22 procurement could be somehow allocated to non-PG&E LSEs. First, allocating “benefits” of RA
23 and RPS to other LSEs does not solve the fundamental issue that the other LSEs should not be

¹²⁵ PG&E Testimony, at 5-13.

1 allocated Diablo Canyon non-EE replacement costs in the first place. CCA and ESPs must meet
2 RA obligations on their own, and having RA assigned to them can be problematic. Furthermore,
3 CCAs have a procurement obligation for all their customers, so assigning resources or credits
4 interferes with their required procurement activity.

5 Second, there is no concrete proposal for how these RECs would be transferred to non-
6 PG&E LSEs.¹²⁶ Simply “transferring” the RECs to CCAs or ESPs without the associated
7 bundled energy would convert them from Procurement Content Category 1 RECs to Category 3
8 “unbundled RECs,” which would greatly reduce their value to the recipients. And while PG&E
9 says it would “work closely with the Commission to address the issue,”¹²⁷ maintaining these
10 converted RECs as Category 1 would require a change in law¹²⁸ as well as a Commission
11 decision.¹²⁹ Such a major policy change cannot be achieved in this proceeding and is likely to be
12 illusory. Additionally, CCAs and ESPs already must meet the same RPS requirements as PG&E,
13 using the same Procurement Content Categories for compliance.

14 This is completely different from the CAM, where IOUs may be required to build or
15 procure capacity for reliability purposes that the Commission determines benefits all ESPs and
16 CCAs. Allowing one LSE to unilaterally exceed (or simply meet) the state’s RPS requirements
17 and shift the costs of that exceedance onto the customers of competing LSEs represents a subsidy
18 that is anti-competitive and neither appropriate nor reasonable. This is particularly true for the
19 case of CCAs. All CCAs actively serving customers in PG&E’s territory have policies in place

¹²⁶ See PG&E Testimony, at 5-14.

¹²⁷ PG&E Testimony, at 5-14.

¹²⁸ See Cal. Pub. Util. Code § 399.16(b)(1), as interpreted by D. 11-12-052.

¹²⁹ See D.11-12-052, at 71 (Conclusion of Law 15) and 75-76 (Ordering Paragraph 1).

1 to exceed the State’s RPS standards¹³⁰ and are presumably implementing procurement plans to
2 meet these more aggressive renewable goals. These CCAs (as well as ESPs serving DA
3 customers) should not be forced to purchase unbundled RECs at a non-negotiated price simply
4 because PG&E is choosing to retire an asset.

5 **E. PG&E’s Proposal Contradicts State Law Requiring Each LSE to Be**
6 **Responsible for Its Own Procurement (Witness: Janis Pepper)**

7 Several parts of PG&E’s Proposal, including the creation of a new NBC, violate the
8 Public Utilities Code’s requirements that each LSE be responsible for its own procurement
9 decisions (as well as the consequences of non-compliance).

10 First, Public Utilities Code section 366.2 requires that CCAs “be *solely responsible* for all
11 generation procurement activities on behalf of the[ir] customers, except where other generation
12 procurement arrangements are *expressly authorized by statute*.”¹³¹ PG&E’s proposal would
13 violate Section 366.2 because PG&E would become partially responsible for generation
14 procurement activities on behalf of the CCAs (and other non-utility LSEs) *without any statutory*
15 *basis* for doing so. PG&E has not identified any state law or statute that would authorize it to
16 procure GHG-free or excess RPS compliant generation on behalf of other LSEs.

17 Second, Public Utilities Code section 454.51(d) allows CCAs to self-provide for their
18 own renewables integration needs instead of paying the IOUs through NBCs to procure them on
19 behalf of CCAs’ customers.¹³² The Commission must permit a CCA to self-provide to meet its

¹³⁰ See, e.g., MCE IRP available at: https://www.mcecleanenergy.org/wp-content/uploads/2016/01/Marin-Clean-Energy-2015-Integrated-Resource-Plan_FINAL-BOARD-APPROVED.pdf; SCP commitment, available at: <http://sonomacleanpower.org/about-scp/power-sources/>; PCE commitment available at: <http://www.peninsulacleanenergy.com/energy-options/>.

¹³¹ Cal. Pub. Util. Code § 366.2(a)(5) (emphasis added). As described in Section VII.B *supra* at 36, PG&E’s proposed Clean Energy Charge has not been expressly authorized by statute.

¹³² See Cal. Pub. Util. Code § 454.51(d).

1 own renewable integration needs if the CCA can prove that its self-provision strategy will: (1)
2 provide equivalent resources; (2) support the state’s GHG reduction goals; (3) not harm bundled
3 customers; and (4) assume any nonperformance risks.

4 Finally, numerous other provisions of the Public Utilities Code require that each LSE –
5 by itself and without the involvement of other LSEs – procure various resources to comply with
6 the state’s various efforts to reduce GHG while maintaining reliability. For example, LSEs are
7 responsible for procuring resources to meet the state’s standards for RA,¹³³ energy storage,¹³⁴
8 and the RPS.¹³⁵ The Commission must allow each LSE to determine, on its own, how to
9 efficiently and effectively satisfy these standards on behalf of its customers.

10 **F. PG&E’s Self-Provision Proposal Is Flawed (*Witness: Janis Pepper*)**

11 PG&E proposes a limited self-provision opportunity for CCAs and ESPs, which will not
12 be available to hundreds of thousands of PG&E’s bundled customers projected to move to CCA
13 service within the next few years alone (and certainly between the decision date and the
14 proposed retirement date of Diablo Canyon).

15 PG&E’s proposed self-provision option has two components to avoid being subject to the
16 Tranche #2-related Clean Energy Charge. First, CCAs and ESPs would be required to procure a
17 specific amount of what PG&E terms “clean resources” that meet the criteria PG&E has put
18 forth for its own Tranche #2 resources. Second, CCAs and ESPs would be required to procure

¹³³ See Cal. Pub. Util. Code § 380.

¹³⁴ See Cal. Pub. Util. Code § 2836.

¹³⁵ See Cal. Pub. Util. Code § 399.11.

1 55% of their retail sales from RPS-eligible resources for the period 2031 to 2045.¹³⁶ As detailed
2 below, this proposal is significantly flawed.

3 **1. The Timing of PG&E’s Proposal for Self-Provision Is Flawed**

4 PG&E proposes that each LSE would only have a 30-day window in 2017, after issuance
5 of a Commission decision approving PG&E’s Diablo Canyon Application,¹³⁷ to decide whether
6 to self-provide its share of supply-side resources necessary to meet PG&E’s Tranche #2
7 obligations and to match PG&E’s voluntary Tranche #3 commitment.¹³⁸ The LSE would only be
8 able to elect to self-provide on behalf of the customers it had at the time of the Commission’s
9 decision (i.e., its self-provision election would not include customers that move from PG&E
10 bundled service after the Commission decision and before PG&E enters into new procurement
11 obligations). Additionally, any new LSEs (e.g., new CCAs) that enroll PG&E bundled
12 customers during the period 30 days after the Commission decision – yet before PG&E enters
13 into any new procurement obligations – would, however, not be able to self-provide per the
14 PG&E Proposal.¹³⁹

15 PG&E’s proposed timing is highly problematic for three reasons: (1) it is unnecessary
16 and unfair; (2) it would restrict significant potential CCA and DA load from being able to benefit
17 from self-provision; and (3) it requires CCAs and ESPs to make procurement commitments prior
18 to preparing robust integrated resource plans in the context of the IRP proceeding using all
19 appropriate and mandated inputs.

¹³⁶ See PG&E Testimony, at 5-15.

¹³⁷ The Commission issued a Scoping Memorandum in this proceeding on November 18, 2016. The Scoping Memorandum indicates the Commission will likely issue a final decision before the end of 2017.

¹³⁸ *Id.*

¹³⁹ See PG&E Testimony, at 5-15.

1 **a. The Timing Restrictions Are Unnecessary and Unfair**

2 PG&E’s proposed timing is unnecessary and unfair. PG&E can avoid making purchases
3 for resources that CCAs and ESPs can obtain through self-provision so long as CCAs and ESPs
4 make a self-provision commitment before PG&E commits to procure additional resources.
5 There is no need for PG&E to know 30 days after a decision in this proceeding whether and to
6 what extent CCAs and ESPs will undertake their own procurement. The PG&E Application
7 would give PG&E until 2025 to conduct Tranche #2 procurement for Diablo Canyon
8 replacement, but unfairly limits the non-utility LSEs’ self-provision option to a 30-day period in
9 2017.

10 **b. The Timing Restrictions Would Prevent Hundreds of**
11 **Thousands of Eligible Customers from Exercising the Right to**
12 **Self-Procure**

13 PG&E’s proposed timeframe would prevent LSEs from choosing the self-provision
14 option on behalf of a significant number of the customers that are expected to depart from
15 PG&E’s bundled service well before Diablo Canyon is closed. PG&E forecasts in its Reference
16 Case that CCA and DA loads will increase from 14,437 GWh to 34,273 GWh by 2025 and to
17 37,068 GWh in 2030.¹⁴⁰ PG&E projects that CCA and DA load departures will reduce PG&E’s
18 bundled sales by approximately 19,836 GWh¹⁴¹ from 2017 to 2025 in its Reference Case, and
19 another 2,795 GWh by 2030.¹⁴² Even PG&E’s High Load scenario for 2025 indicates CCA and

¹⁴⁰ See PG&E Testimony, at 2-10 (Table 2-2).

¹⁴¹ Notably, this amount is approximately equal to the historic average generation by Diablo Canyon of 18,500 GWh.

¹⁴² See PG&E Testimony, at 2-10 (Table 2-2).

1 DA load will increase to approximately 30,568 GWh, which would more than double PG&E’s
2 departed load in less than 10 years.¹⁴³

3 A substantial number of cities and counties around PG&E’s service territory either have
4 formed or are seriously considering forming a CCA. PG&E acknowledges in its testimony the
5 substantial likelihood of the formation of such additional CCAs in its load forecasts.¹⁴⁴

6 PG&E also anticipates that a huge amount of the load that will eventually depart its
7 bundled service before 2025 will still be taking bundled service in 2017. Under PG&E’s
8 proposal, none of those thousands of customers will be eligible for the self-provision option.
9 Instead, PG&E proposes that these near-future CCA and DA customers be burdened with the
10 Clean Energy Charge, and PG&E be authorized to procure energy on their behalf years before it
11 could possibly be necessary to do so.

12 To be clear—PG&E wants permission to buy energy resources that might not ever be
13 needed for customers that its *own forecasts* indicate it will not be serving,¹⁴⁵ saddle these
14 customers with years of future Clean Energy Charge payments, but deny them opportunity to
15 self-procure through the CCA or ESP that will provide them energy.

16 **c. LSEs Must Have the Results of the IRP Process Before**
17 **Determining Whether to Self-Procure**

18 It would contradict the very purpose of the IRP process if CCAs and ESPs were forced to
19 make a self-provision decision before they were able to formulate a robust integrated resource

¹⁴³ See PG&E Testimony, at 2-10. In PG&E’s response to MCE_001-Q06, PG&E explains that the forecast on 2-10 in Table 2-2 for CCA/DA projections “assumes that DA will remain capped at current statutory levels consistent with Senate Bill (SB) 695” and that “DA load in 2015 was 9,833 GWh”.

¹⁴⁴ See PG&E Testimony, at 2-13 (Table 2-3); 2-14 (Table 2-4); and 2-15 (Table 2-5).

¹⁴⁵ See PG&E Response to MCE_001-Q04. PG&E states in its response, “PG&E believes its modeling approach provides reasonable results and the Reference Case reflects the expected impact of CCA departures.”

1 plan. Important data that will serve as the inputs to CCA and ESPs plans will be developed in
2 the Commission’s IRP proceeding and will not even be available to CCAs and ESPs until the
3 IRP proceeding is underway.¹⁴⁶ It is inappropriate and unfair to force non-utility LSEs to decide
4 whether they can and will self-provide without having first developed a robust understanding of
5 their resource needs and ability to meet such needs in the course of their own IRP analyses,
6 which have been mandated by state law.¹⁴⁷ In fact, PG&E’s proposal appears to violate SB 350
7 by forcing CCA and ESPs to circumvent their own legally-mandated IRP obligations.

8 Further, PG&E’s purported justification for imposing on other LSEs the proposed above-
9 market costs of its Tranche #2 procurement, unless such LSEs self-provide similar resources,
10 appears based on PG&E’s belief that it knows best how to achieve statewide GHG reductions to
11 offset the closure of Diablo Canyon. However, LSEs may identify alternatives to reduce GHG
12 emissions that are more cost-effective or otherwise preferred by the LSE and/or its customers. In
13 fact, the “local” focus of CCAs enables CCAs to design GHG-reduction and energy efficiency
14 programs that meet the unique desires of the communities they serve.

15 Thus, if the Commission approves PG&E’s Tranche #2 and Tranche #3 proposals —
16 which Joint Intervenors do not recommend — LSEs should be allowed to fulfill any self-
17 provision requirements by either undertaking a proportionately appropriate level of procurement
18 similar to that authorized for PG&E *or* by otherwise demonstrating to the Commission that the
19 LSE’s specific resource portfolio will ensure additional proportionally similar reductions in
20 GHG emissions.

¹⁴⁶ See Section III.A.3.b, *supra* at 21-22.

¹⁴⁷ See Cal. Pub. Util. Code § 454.52.

1 **d. If a Tranche #2 RFO *Must* Occur, the Timing Restrictions**
2 **Should Be Modified**

3 As described earlier in this testimony,¹⁴⁸ there is no justification for immediate issuance
4 of an RFO—PG&E has not shown that replacement procurement is needed so soon that it could
5 not be addressed in the IRP. In any event, PG&E has not in this proceeding justified its proposal
6 to undertake commitments before 2022, nor has it justified a need for deliveries to commence
7 any sooner than 2025.

8 Furthermore, allowing LSEs only 30 days after a 2017 decision is made to provide its
9 notice of intent to self-procure in 2025 is draconian. Assuming PG&E was authorized to issue a
10 Tranche #2 RFO (which should not occur until at least mid-2022), it should also be required to
11 provide LSEs with 120 days’ notice of PG&E’s intent to issue the Tranche #2 RFO and 60 days’
12 notice of PG&E’s intent to issue the RFO shortlist. LSEs should then be given until 30 days
13 before PG&E’s issuance of the RFO shortlist to provide notice of their intent to self-provide. By
14 delaying the RFO date and allowing LSEs to give a self-provision notice up until PG&E starts
15 making procurement commitments, the Commission would ensure that the maximum amount of
16 potential departing load could benefit from self-provision and that an LSE’s self-provision
17 election is made within the broader context of its comprehensive IRP process.

18 **2. PG&E’s Proposal for Requiring LSEs to Commit to Tranche #3**
19 **Procurement In Order to Qualify for Tranche #2 Self-Provision Is**
20 **Premature and Unfair**

21 PG&E has proposed that to avoid the Clean Energy Charge obligation related to Tranche
22 #2, CCA and ESPs must meet the 55% RPS goal for the period 2031 to 2045 that PG&E has

¹⁴⁸ See Section III.A, *supra* at 10-23.

1 voluntarily committed to achieve in Tranche #3.¹⁴⁹ PG&E proposes an asymmetric requirement
2 that is difficult to understand and should be rejected. CCAs and ESPs should not be required to
3 commit to a 55% RPS in the period 2031 to 2045 in order to be eligible to self provide in
4 Tranche #2. After all CCAs and ESPs cannot impose the above market costs of a 55% RPS
5 requirement on bundled customers, whereas PG&E seeks to impose the above market costs of its
6 55% RPS procurement on to customers of CCAs and ESPs

7 It is also important to note that PG&E is not unique in proposing to exceed the State’s
8 RPS goals ahead of schedule. Currently, all of the currently operating CCAs in PG&E’s service
9 territory already exceed the State’s RPS goal of 33% by 2020. Additionally, those CCAs
10 launching in 2017 in PG&E’s service territory are on track to exceed the State’s RPS goal of
11 33% by 2020. LSEs that currently exceed the existing RPS mandate bear the costs of producing
12 such surplus renewables within their service rates, and have not sought compensation from
13 PG&E’s bundled electricity customers for those costs.

14 **G. Municipal Departing Load (MDL) Customers Should Not Be Subject to**
15 **Nonbypassable Charges for Diablo Canyon Replacement Power Beyond Any**
16 **Existing Requirements and Should Be Afforded the Same Self-Provision**
17 **Options as Other LSEs** (*Witness: Robert Kinosian*)

18 PG&E proposes that MDL customers who were PG&E distribution customers as of the
19 date of the procurement, and who have since become customers of a large municipalization, also
20 pay for Diablo Canyon replacement procurement though PG&E’s new proposed Clean Energy
21 Charge.¹⁵⁰ Commission decisions already determine whether and when MDL customers are
22 subject to NBCs, and the PCIA and other NBCs are already in place to recover costs allocated to

¹⁴⁹ See PG&E Testimony, at 5-15.

¹⁵⁰ See PG&E response to Data Request SSJID-01 Q4a and Q4b. The term “large municipalization” has the meaning as defined in D.08-09-012.

1 MDL. There is no justification for imposing new NBCs on publicly owned utilities (“POUs”)
2 and their customers.

3 Furthermore, similar to other LSEs, POUs have statutory obligations related to RA,¹⁵¹
4 energy storage,¹⁵² and RPS requirements.¹⁵³ Municipalities and POUs are subject to diverse
5 GHG reduction requirements, and the local POU oversight bodies may establish GHG-related
6 obligations that extend beyond those established by California law; for example, the City of Palo
7 Alto adopted a Carbon Neutral Plan, committing its electric utility to providing customers with a
8 100% carbon neutral electricity supply.¹⁵⁴ Therefore, while a self-provision option does not
9 make a new NBC appropriate, any self-provision options available to other LSEs should be made
10 available to MDL on an equivalent basis.

11 **H. PG&E’S Procurement Review Group (PRG) Proposal Is Inadequate**
12 ***(Witness: Mark Fulmer)***

13 PG&E’s Prepared Testimony states that “PG&E plans to form a PRG to review and
14 provide feedback on the RFO process and selection of offers for Tranche #1. PRG members
15 would be required to have relevant EE experience and be willing to sign non-disclosure
16 agreements and acknowledge that they would be ineligible to participate as a participant or
17 consultant to a participant in RFOs for Tranches #1 or #2.”¹⁵⁵ For Tranche #2, PG&E “plans to
18 engage the PRG, Cost Allocation Mechanism Group [CAM Group], and Independent Evaluator
19 throughout the Tranche #2 RFO,” and “anticipates providing the PRG and Cost Allocation
20 Mechanism Group with the following: an overview of the solicitation, a description of the

¹⁵¹ See Cal. Pub. Util. Code § 9620.

¹⁵² See Cal. Pub. Util. Code § 2836(b) and 9506.

¹⁵³ See Cal. Pub. Util. Code § 399.30.

¹⁵⁴ See <http://www.cityofpaloalto.org/gov/depts/utl/residents/resources/pcm/default.asp>.

¹⁵⁵ PG&E Testimony, at 4-7.

1 evaluation methodology and evaluation process, a proposed shortlist, and any offers PG&E
2 proposes to be executed.”¹⁵⁶

3 If the Commission allows PG&E’s proposal to move forward, two refinements must be
4 made. First, the CAM Group should have its membership comprised of representatives from
5 parties to whom procurement-related costs are to be allocated. Thus, membership to the CAM
6 Group must be explicitly open to DA customers whose ESPs do not elect to self-provide
7 incremental renewable power and CCAs that do not elect to self-provide, even if they are not
8 currently represented in the CAM Group. Furthermore, members of the CAM Group whose
9 CCA or ESP is exercising its self-provision option should be excused for review of any contracts
10 when their customers are not subject to cost recovery.

11 Second, a member, or members, of this CAM Group should have the right to: (i) brief
12 Commissioners and Commission Staff on a confidential basis to discuss issues identified that
13 require resolution; (ii) prepare an independent report on any proposed procurement that PG&E is
14 required to include in its applications or advice letters seeking approval of winning offers; and
15 (iii) oppose any PG&E procurement-related application or advice letter.

16 **VIII. LAND USE, FACILITIES AND DECOMMISSIONING ISSUES**

17 The Joint Intervenors are not jointly submitting testimony on this issue.

18 **IX. CONCLUSION**

19 The Joint Intervenors thanks the Commission for this opportunity to submit this
20 testimony.

¹⁵⁶ PG&E Testimony, at 5-4, 5-5.

Exhibit A

Witness Qualifications for Barbara Barkovich, Mark
Fulmer, Robert Kinosian, and Janis Pepper

STATEMENT OF QUALIFICATIONS OF DR. BARBARA R. BARKOVICH

**STATEMENT OF QUALIFICATIONS OF
DR. BARBARA R. BARKOVICH**

Barbara R. Barkovich has a BA in Physics from the University of California at San Diego, an MS in Urban and Policy Sciences from the State University of New York at Stony Brook, and a Ph.D. in Energy and Resources from the University of California at Berkeley.

She started working on energy and environment issues for the National Science Foundation and then worked for the California PUC for 7 ½ years, ending up as Director of Policy and Planning. She dealt with broad energy policy issues, cost allocation and rate design, marginal costs, electric resource issues, and represented the Commission at the Legislature, the Governor's Office, and Congress.

Since 1985, Dr. Barkovich has been a consultant and expert witness on energy (especially electricity) and regulatory matters, including marginal cost, cost allocation and rate design, electric industry restructuring, and electric resource analysis. She has assisted in negotiations on behalf of electric consumers with utilities on pricing and service matters. She has also acted as a mediator and an arbitrator.

Dr. Barkovich is Chairperson of the Board of the restructured California Power Exchange. She has also served on the California Independent System Operator Governing Board and the Energy Engineering Board of the National Research Council.

STATEMENT OF QUALIFICATIONS OF MARK E. FULMER

STATEMENT OF QUALIFICATIONS OF MARK E. FULMER

Q: Please state your name and business address.

A: My name is Mark E. Fulmer. I am a Principal and Co-owner at MRW & Associates, LLC (“MRW”). MRW is an energy consulting firm founded in 1986 that specializes in power and gas market assessments, regulatory matters, litigation support, expert witness testimony, contract review, and negotiations. My business address is 1814 Franklin Street, Suite 720, Oakland, California 94612.

Q: Please summarize your professional and educational background.

A: I have been an energy consultant with MRW since 1999. During that time, I have worked with non-utility retail energy service providers (both gas and electric), independent power producers, municipalities, end-use customers, consumer advocates, trade organizations, and financial institutions on a variety of matters related to natural gas and electric industry regulation and policy, utility ratemaking, price forecasting, demand-side management and asset valuation. Previously, I worked at Daniel, Mann, Johnson, & Mendenhall, where I consulted to utilities and others on energy efficiency. Prior to that, I worked at Tellus Institute in Boston, Massachusetts, where I consulted to numerous state agencies and non-governmental organizations on integrated resource planning and natural gas and electric industry restructuring.

I hold a Master of Science in Engineering from Princeton University and a Bachelor of Science degree in Engineering from the University of California at Irvine.

Q: Have you previously provided expert witness testimony before state public utility commissions?

A: Yes. I have testified before state utility commissions in Arizona, California, Hawaii, New Mexico, Pennsylvania, Rhode Island and Washington. Here in California, I have submitted testimony in over 25 proceedings, addressing primarily ratemaking, direct access, and community choice aggregation matters.

STATEMENT OF QUALIFICATIONS OF ROBERT KINOSIAN

STATEMENT OF QUALIFICATIONS OF ROBERT KINOSIAN

EDUCATION

1983 Bachelor of Science degree in mechanical engineering from the University of California Berkeley, graduating with honors.

PRIMARY WORK HISTORY

- 1984 -2001 Analyst, California Public Utilities Commission's Division of Ratepayer Advocates. Addressed issues including: ratemaking and decommissioning of nuclear facilities; cost and operation of other utility resources (coal, hydroelectric and natural gas); conservation and load management programs; rate design; cost of capital; contracting for renewable generation; resource planning; and other issues. In addition, represented the Commission in proceedings before the California Energy Commission and State legislature.
- 2001-2003 Energy Advisor to Commission President Loretta Lynch. Reviewed/modified proposed energy decisions, working with other Commissioner's offices, administrative law judges and staff. Represented the Commission on legislative issues regarding the California energy crisis, the Governor's task force renegotiating Department of Water Resources energy contracts, and the PG&E bankruptcy proceedings.
- 2004-2007 Division of Ratepayer Advocate Senior Management - Policy Advisor. Provided assistance to the Division Director. Led lobbying efforts with the Commission, State legislature and outside parties. Reviewed division testimony to provide quality control and consistency. Trained division staff on testimony preparation and lobbying.
- 2007-2010 Energy Advisor to Commissioner John Bohn. Reviewed/modified proposed energy decisions, working with other Commissioner's offices, administrative law judges and staff.
- 2010 Analyst, Safety and Enforcement Division. Reviewed the San Bruno pipeline explosion and PG&E gas system practices.
- 2011-2014 Analyst, Division of Strategic Planning. Prepared reports on potential improvements to the Commission's residential solar programs and new customer billing techniques.

OTHER WORK EXPERIENCE

2004- 2007 Board Member of the Pacific Forest and Watershed Lands Stewardship Council. Treasurer and vice-president overseeing the disposition of thousands of acres of land related to PG&E hydroelectric facilities.

STATEMENT OF QUALIFICATIONS OF JANIS C. PEPPER

STATEMENT OF QUALIFICATIONS OF JANIS C. PEPPER

Q: Please state your name and business address.

A. My name is Janis Pepper. I am the Chief Executive Officer of Peninsula Clean Energy Authority (PCE). PCE is a Community Choice Aggregator that is the electricity provider for all residents and businesses in all 20 cities in San Mateo County, as well as the unincorporated portions of the county. My business address is 455 County Center, Fourth Floor, Redwood City, CA 94063.

Q: Briefly summarize your professional and educational background.

A. I have over 30 years of experience working in or for utilities, both investor-owned and municipal, with a strong depth of experience and knowledge of wholesale and retail energy markets in California.

I joined Peninsula Clean Energy as its Chief Executive Officer in May 2016. Previously I worked at Silicon Valley Power (SVP), the municipal utility serving the City of Santa Clara, as an Electric Division Manager. Prior to that, I worked at Alameda Municipal Power as the Assistant General Manager of Energy Resource Planning. I have also worked at Pacific Gas and Electric Company, where I negotiated power purchase agreements and participated in various regulatory proceedings.

I am the founder of four energy-related start-up companies, the first two of which are operating today, including: (1) Automated Power Exchange (APX) through which I developed and pioneered market-changing renewable energy credits (RECs) for trading green power in California and across the country; (2) Clean Power Markets, Inc., a company ultimately sold to Comverge, that built web-based systems to track renewable energy production, energy efficiency, and demand side management measures for

renewable portfolio standard requirements and voluntary green markets; (3) Enertron Consultants, a consulting business targeted to the utility and independent power industry; and (4) SunFund Corporation, a solar services company that developed innovative financing options for residential solar photovoltaic systems.

I am a city council member on the Los Altos City Council, elected in 2012 and re-elected in 2016. I served as Mayor in 2015. Since 2013, I have served on the board of the Bay Area Air Quality Management District (BAAQMD), and was a previous chair of the BAAQMD Climate Protection Committee.

I hold a B.S. in Civil Engineering and a M.B.A., both from Stanford University.

Exhibit B

PG&E Responses to Data Requests

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	CLECA_001-Q05		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_CLECA_001-Q05		
Request Date:	September 6, 2016	Requester DR No.:	001
Date Sent:	October 6, 2016	Requesting Party:	California Large Energy Consumers Association
PG&E Witness:	Todd Strauss	Requester:	Barbara R. Barkovich

QUESTION 5

Please provide the source of all inputs to the workpaper in 001-Ch3-Workpapers-Tranche-LCOE-Estimates. Does the Wyoming wind include any estimates for transmission? Is it assumed to be able to be delivered to customers in PG&E's service territory?

ANSWER 5

For electronic references to the LCOE estimates, please see the materials provided in response to Question 1.

The LCOE values for Wyoming wind include a cost component for energy-only transmission, which is the lowest cost transmission from the RPS calculator v6.2.

Energy from Wyoming wind is assumed to be delivered into the SCE service territory. It is assumed this energy will be able to be delivered to customers in PG&E's service territory via PG&E's Path 26 interconnection with SCE's service territory.

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	CLECA_005-Q05		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_CLECA_005-Q05		
Request Date:	December 9, 2016	Requester DR No.:	005
Date Sent:	December 21, 2016	Requesting Party:	California Large Energy Consumers Association
PG&E Witness:	Jan Berman	Requester:	Barbara R. Barkovich

QUESTION 5

Does PG&E intend to shape the EE it procures in any way, e.g. to affect the net load curve?

ANSWER 5

PG&E plans to score projects using time-differentiated avoided costs. Bids will need to include information regarding the mix of energy savings measures that would allow PG&E to determine the appropriate load shape(s) to use in bid evaluation. A project that saves energy at less critical times, for instance, during over-generation hours, would be valued lower than projects that save energy during the most expensive hours of the year.

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	MCE_001-Q04		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_MCE_001-Q04		
Request Date:	August 19, 2016	Requester DR No.:	001
Date Sent:	September 2, 2016	Requesting Party:	Marin Clean Energy
PG&E Witness:	Janice Frazier-Hampton	Requester:	Jeremy Waen

SUBJECT: REGARDING CHAPTER 2 – DIABLO CANYON POWER PLANT (DCPP) NEEDS ANALYSIS

Regarding analysis and forecast of Energy Efficiency (EE), Distributed Generation (DG) and Community Choice Aggregation (CCA) projections on pages 2-9 through 2-12

QUESTION 4

On page 2-10 testimony states: “For CCA, the level of projected load reflects departure from PG&E’s utility bundled portfolio based on departure probabilities.” Please explain in detail what these “departure probabilities” are, why PG&E believes they are reasonable factors to use for this forecast, and how these probabilities are handled within the forecast calculation.

ANSWER 4

For forecast CCA load departures in 2017, CCA departures are determined consistent with that presented in PG&E’s annual Energy Resource Recovery Account (ERRA) Forecast Filing. Specifically, the 2017 forecast excludes CCA load from the bundled load forecast if a CCA had: (1) submitted a Binding Notice of Intent; (2) provided a load forecast to the CPUC and/or California Energy Commission for the purpose of taking on resource adequacy load requirements for the following year; or (3) started enrolling customers as of the date of the forecast.

For 2018 and beyond PG&E uses a stochastic approach to forecast load departure due to CCA. The following steps describe the approach and assumptions used:

- (1) **Identification of CCA participation:** PG&E identifies the level of public CCA activity observed in its service area;
- (2) **Determination of departure probability:** Based on observed CCA activity, PG&E assigns a target probability of departure for communities in the service area.
- (3) **Determination of load forecast:** Load pertaining to potential CCA departure jurisdiction is identified as an independent variable in the simulation model with no dependencies or correlation.
- (4) **Calculation of load departure (stochastically modeled):** For each year, the jurisdiction-specific departure probabilities and load forecasts are

stochastically modeled using a distribution comprised of 5,000 iterations. In its Reference Case forecast PG&E selects the mean of the distribution.

PG&E believes its modeling approach provides reasonable results and the Reference Case reflects the expected impact of CCA departures. In addition, PG&E's Prepared Testimony presents High Load and Low Load Scenarios to provide a range of potential outcomes that capture either more (Low Load) or less (High Load) CCA departures.

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	MCE_001-Q06		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_MCE_001-Q06		
Request Date:	August 19, 2016	Requester DR No.:	001
Date Sent:	September 2, 2016	Requesting Party:	Marin Clean Energy
PG&E Witness:	Janice Frazier-Hampton	Requester:	Jeremy Waen

SUBJECT: REGARDING CHAPTER 2 – DIABLO CANYON POWER PLANT (DCPP) NEEDS ANALYSIS

Regarding analysis and forecast of Energy Efficiency (EE), Distributed Generation (DG) and Community Choice Aggregation (CCA) projections on pages 2-9 through 2-12

QUESTION 6

Based on the CCA/DA load forecast line item in Table 2-2, it is unclear how CCA and DA are independently contributing to this forecast. Please explain in detail where PG&E is including any projected growth in DA load as part of this forecast.

ANSWER 6

The forecast shown in Table 2-2 for the CCA/DA line includes a DA forecast. For purposes of this analysis, PG&E assumes that DA will remain capped at current statutory levels consistent with Senate Bill (SB) 695 which was passed in 2009 allowing limited reopening of DA service, subject to a maximum allowable annual limit. As stated on page 2-6 of testimony, DA load in 2015 was 9,833 GWh based on the CPUC’s Direct Access Implementation Activity Report for April 2016.

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	MCE_002-Q14		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_MCE_002-Q14		
Request Date:	August 30, 2016	Requester DR No.:	002
Date Sent:	September 15, 2016	Requesting Party:	Marin Clean Energy
PG&E Witness:	Jan Berman	Requester:	Jeremy Waen

SUBJECT: CHAPTER 4 – TRANCHE #1 ENERGY EFFICIENCY:

Regarding distinguishing Tranche #1 from PG&E's current energy efficiency programs

QUESTION 14

What percentage increase over current energy efficiency savings would Tranche #1 procurement represent?

ANSWER 14

Tranche #1 would represent a 62% increase over current electric GWh goals for the 2019-2024 period. This is based on the goals outlined in prepared testimony "Chapter 4, Tranche #1 – Energy Efficiency," table 4-1 and the 2,000 GWh savings target of Tranche #1.

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	MCE_003-Q06		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_MCE_003-Q06		
Request Date:	December 13, 2016	Requester DR No.:	003
Date Sent:	January 11, 2017	Requesting Party:	Marin Clean Energy
PG&E Witness:	Janice Frazier-Hampton	Requester:	Jeremy Waen

SUBJECT: REGARDING CHAPTER 2 – DIABLO CANYON NEEDS ANALYSIS

QUESTION 6

Please provide the underlying data and work paper(s) used to develop Table 2-2.

ANSWER 6

Please refer to the attachment 'DiabloCanyonRetirementJointProposal_DR_MCE_003-Q06Atch01.xlsx'. The first tab provides a description of PG&E's load forecasting methodology for Service Territory Sales, Distributed Generation, Energy Efficiency, and Community Choice Aggregation. The second tab shows the forecast distribution results for Energy Efficiency, Distributed Solar PV, and Community Choice Aggregation as well as a matrix showing how the High Load Scenario and Low Load Scenario were calculated in Table 2-2.

Load Driver Distribution Forecasts

Combined EE (Residential & Non-Residential)
Cumulative Savings (GWh)

Year	a					b					c					d = b - c		e = a - c	
	1%	10%	25%	50%	75%	90%	99%	Mean	Delta	High EE	Low EE	Delta	High EE	Low EE	Delta	High EE			
2025	14,328	15,772	16,783	17,237	22,710	23,372	24,196	18,589	4,121	-1,806	7,764	-3,405							
2030	17,354	20,137	21,969	22,825	33,138	34,363	35,913	25,374											

Distributed Generation - Solar PV
Generation Forecast (GWh)

Year	f					g					h					i = g - h		j = f - h	
	1%	10%	25%	50%	75%	90%	99%	Expected Value	Delta	High PV	Low PV	Delta	High PV	Low PV	Delta	High PV			
2025	9,414	11,766	13,824	16,082	18,010	20,083	23,889	16,023	1,986	-2,199	2,635	-2,891							
2030	11,477	14,729	17,329	20,165	22,854	25,691	30,628	20,220											

CCA Long-Term Forecast (Existing + Probabilistic Forecast)

Year	k					l					m					n = l - m		o = k - m	
	1%	10%	25%	50%	75%	90%	99%	Expected Value	Delta	High CCA	Low CCA	Delta	High CCA	Low CCA	Delta	High CCA			
2025	11,852	16,859	20,365	24,232	27,910	31,074	35,803	24,071	3,839	-3,705	3,951	-3,938							
2030	13,774	19,220	22,928	27,006	30,817	34,248	39,729	26,866											

High and Low Load Scenarios Formula Matrix for Table 2-2

	2017			2025			2030		
	Reference Case	High Load Scenario	Low Load Scenario	Reference Case	High Load Scenario	Low Load Scenario	Reference Case	High Load Scenario	Low Load Scenario
Gross Service Territory Sales	Modeled	p - e	p - d	Modeled	p - e	p - d	Modeled	p - e	p - d
Energy Efficiency	Modeled	p - j	p - i	Modeled	p - j	p - i	Modeled	p - j	p - i
Distributed Generation	Modeled	p - o	p - n	Modeled	p - o	p - n	Modeled	p - o	p - n
Service Territory Sales	Modeled			Modeled			Modeled		
CCA / DA*	Modeled			Modeled			Modeled		
Utility Bundled Sales									

Table 2-2: Scenario Analysis for Bundled Customer Need in GWh

	2017			2025			2030		
	Reference Case	High Load Scenario	Low Load Scenario	Reference Case	High Load Scenario	Low Load Scenario	Reference Case	High Load Scenario	Low Load Scenario
Gross Service Territory Sales	96,131	117,665	117,665	117,665	131,153	131,153	131,153	131,153	131,153
Energy Efficiency	(6,482)	(18,870)	(20,676)	(20,676)	(24,797)	(24,056)	(27,461)	(27,461)	(35,225)
Distributed Generation	(7,610)	(16,663)	(18,862)	(18,862)	(20,848)	(20,120)	(23,011)	(23,011)	(25,646)
Service Territory Sales	82,039	82,132	78,127	78,127	72,019	86,977	80,681	80,681	70,282
CCA / DA*	(14,437)	(30,568)	(34,273)	(34,273)	(33,112)	(33,130)	(37,068)	(37,068)	(41,019)
Utility Bundled Sales	67,602	51,564	43,854	43,854	33,907	53,847	43,613	43,613	29,263

Notes

*Includes 360 GWh of other sales

Bundled Sales % of Territory	82%	63%	56%	47%	62%	54%	42%
------------------------------	-----	-----	-----	-----	-----	-----	-----

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	ORA_002-Q04		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_ORA_002-Q04		
Request Date:	September 20, 2016	Requester DR No.:	ORA-PG&E-002-RC5
Date Sent:	October 21, 2016	Requesting Party:	Office of Ratepayer Advocates
PG&E Witness:	Todd Strauss / Jan Berman	Requester:	Clayton Tang

SUBJECT: REPLACEMENT OF DIABLO CANYON POWER PLANT

QUESTION 4

In Chapter 3, at p. 3-2, PG&E states that “Delays in approval of the Joint Proposal could adversely impact the success of these procurement solicitations.”

- a. Has PG&E performed an analysis to determine how delays in approval of the Joint Proposal could adversely impact the success of these procurement solicitations? Please provide any analysis related to this statement.
- b. If the answer to 4.a. is no, is PG&E planning to perform such an analysis? Please explain why not?

ANSWER 4

- a. PG&E has assessed how a delay in the approval of the Joint Proposal could impact the Tranche #1 solicitation and the Tranche #2 solicitation, which PG&E plans to initiate in 2018 and 2019, respectively. Delays in approval of the Joint Proposal might delay the installation of energy efficiency projects, adversely impact the quality and specificity of offers received in the Tranche #1 solicitation, and reduce the likelihood of attaining the Tranche #1 target quantity of 2,000 gross GWh of energy savings over the six year period 2019-2024. These effects on the Tranche #1 solicitation might in turn adversely impact the quality, specificity, and quantity (number of offers and amount of GWh) of energy efficiency offers received in the Tranche #2 solicitation, possibly resulting in execution of more GWh of offers for supply-side resources, at higher net cost to customers, than would be the case were there no delays in the approval of the Joint Proposal.

The Tranche #1 target quantity represents a challenging 60% increase over current goals for the years 2019-2024. It is therefore vitally important to enable potential participants in the solicitation an opportunity for innovation, research, and design. Upon issuance by the CPUC of a decision approving this Application, PG&E would provide notice to the energy efficiency community that PG&E has been approved to seek 2,000 GWh of energy efficiency via a solicitation to be issued on or before June 1, 2018 for projects to be installed in 2018 – 2024. This advance notice, were it

issued during the summer of 2017, would allow potential participants in the Tranche #1 solicitation ample time to analyze customer segments, technologies, buildings, and perhaps to seek specific customers for projects prior to participating in the Tranche #1 solicitation. PG&E anticipates that this opportunity to analyze the market would translate into higher quality, more specific offers and result in projects that could be implemented relatively quickly at the conclusion of the RFO process.

PG&E notes that the Southern California Edison (SCE) received CPUC approval in a Final Commission Decision (D.13-02-015) on February 13, 2013 to issue an RFO that included energy efficiency resources. SCE filed an application with the winning contracts on November 26, 2014. This timeframe – from CPUC authorization to conduct the RFO to filing contracts – took 21 months, and is reasonably consistent with PG&E's proposed timeframe, which would have a CPUC decision in June 2017 and projects installed beginning in late 2018 or early 2019, approximately 18 months after the CPUC decision.

If approval of the Joint Proposal were delayed, potential participants would have less time to perform their analyses and to seek customers. As a result, the quality and potentially the quantity of offers in the Tranche #1 solicitation would be adversely affected. Project installation dates might also be later, which could make it more challenging for PG&E and participants with winning offers to deliver the 2,000 gross GWh target over the 2019-2024 time period; also, if the entire 2,000 gross GWh target is not subscribed in the first Tranche #1 solicitation, the time available for future Tranche #1 solicitations would be reduced, which might increase costs to customers.

b. Not Applicable

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	ORA_009-Q02		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_ORA_009-Q02		
Request Date:	December 1, 2016	Requester DR No.:	ORA-PG&E-009
Date Sent:	December 19, 2016	Requesting Party:	Office of Ratepayer Advocates
PG&E Witness:	Jan Berman	Requester:	Clayton Tang

SUBJECT: ENERGY EFFICIENCY

QUESTION 2

What are the projected net cumulative energy savings year-by-year for the period 2017-2040 resulting from the proposed Tranche #1 procurement? Please provide all models and input assumptions in your response.

- a. Please provide a table showing a side-by-side comparison with the projected net cumulative energy savings year-by-year for the same period for EE programs in PG&E’s EE portfolio proposed in its Business Plan application in January 2017.

ANSWER 2

PG&E has not posted its final Business Plan yet and therefore cannot include a comparison to a document that has not yet been released.

In regards to savings from Tranche #1, PG&E provides an estimate of net cumulative energy savings through 2030, which was the modeling horizon in the analysis, using the following assumptions:

- Net to gross (NTG) ratio: 0.7, based on the reported NTG ratio from PG&E’s 2015 EE program results, which ranges from 0.67 to 0.75 for commercial, industrial, and agricultural programs (including both statewide and third party programs). If the Tranche #1 results are similar to the 2015 EE program reported results, then 2,000 gross GWh would translate to 1,400 net GWh.
- Expected Useful Life (EUL): 11.8, based on the reported 2015 EE program results for commercial, industrial, and agricultural programs, which were 10-13 years, with 11.8 years on average.

Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Gross (GWh)	333	667	1000	1333	1667	2000	2000	2000	2000	2000	2000	2000
Net (GWh)	233	467	700	933	1167	1400	1400	1400	1400	1400	1400	1400

For purposes of modeling the impact of the Tranche #1 EE on system load in the analysis discussed in Chapter 3 , PG&E used the gross savings shown in the above table. Savings is assumed to persist through 2030, the modeling horizon, for the

following reasons: 1) like for like technology replacement at the end of the technology life; 2) products are likely to be more efficient 12 years from now, making it less likely that today's inefficient technology is still available in the future, and 3) the forecast only includes new codes and standards through 2022, meaning that savings occurring during the period in question will likely be replaced when new codes and standards, not included in the forecast, are in effect.

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	ORA_009-Q05		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_ORA_009-Q05		
Request Date:	December 1, 2016	Requester DR No.:	ORA-PG&E-009
Date Sent:	December 19, 2016	Requesting Party:	Office of Ratepayer Advocates
PG&E Witness:	Jan Berman	Requester:	Clayton Tang

SUBJECT: ENERGY EFFICIENCY

QUESTION 5

Are the proposed DCPD Tranche #1 and Tranche #2 replacement procurements consistent with current Commission decisions and resolutions regarding EE?

- a. Are the proposed Tranche #1 and Tranche #2 replacement procurements consistent with requirements in D.16-08-019 specifying that all program design and delivery of EE programs be presumed to be conducted by third parties unless a utility can make a compelling case for why a program activity must be conducted by utility personnel?
- b. Are the proposed Tranche #1 and Tranche #2 replacement procurements consistent with the requirements in D.16-08-019 that all EE goal achievement should be measured on a net cumulative basis in addition to first-year savings?
- c. Are the proposed Tranche #1 and Tranche #2 replacement procurements consistent with the EM&V roles and responsibilities, guidelines, and procedures outlined in D.16-08-019, including the definitions and responsibilities of program administrators and implementers utilizing a Normalized Metered Energy Consumption (NMEC) framework to measure EE resource savings?
- d. Are the proposed Tranche #1 and Tranche #2 replacement procurements consistent with the requirements in D.14-10-046 requiring that EE portfolios meet a total resource cost (TRC) test benefit/cost ratio of 1.0 when utilizing the avoided costs approved in Resolution E-4801, as ordered by D.16-06-007? Please provide all models and input assumptions in your response.

ANSWER 5

- a. Yes, the proposed Tranche #1 and Tranche #2 replacement procurement is consistent with requirements in D.16-08-019 that all program design and delivery of EE programs be presumed to be conducted by third parties unless a utility can make a compelling case for why a program activity must be conducted by utility personnel.
- b. The commitment established in the Joint Proposal and specified in PG&E's testimony at page 4-4 is: "In Tranche #1, PG&E will obtain 2,000 gross GWh from EE installed in PG&E's service area by January 1, 2025. Achievement of the Tranche #1

gross GWh target will be measured by summing the first year gross GWh savings from EE installed in 2018-2024.” EE resources resulting from Tranche #2 are counted in the same manner toward PG&E’s achievement of the Tranche #2 commitment.

In tracking compliance with these commitments, PG&E would count energy savings from the Tranche #1 and #2 procurement on a gross basis as the Joint Proposal specifies.

PG&E can also estimate and report net savings and expected useful lives from EE delivered in Tranche #1 or Tranche #2, once those programs or projects are selected and installed. The conversion from gross savings to net savings depends on the details of the programs or projects, such as the measures and customer segments addressed.

While EE goals were expressed as gross savings at the time the Joint Proposal was signed, PG&E recognizes that the Commission’s practices can change over time and that D. 16-08-019 specifies changes that are to occur by the beginning of 2018:

- “Our energy efficiency goals should be revised from gross to net to align with the CEC’s demand forecast activities and our long-term procurement planning activities” (Conclusion of Law 10); and
- “Future energy efficiency goals analysis should be done in coordination with the CEC, through the JASC and the DAWG, and should incorporate cumulative goals in addition to annual goals in time for the beginning of 2018.” (Conclusion of Law 11).

PG&E will monitor these developments, as well as other updates that may occur in the future to cost-effectiveness methodology, goals, or other reporting requirements, in order to provide reporting on the Tranche #1 and Tranche #2 EE savings consistent with evolving methodologies.

c. PG&E has not identified any inconsistency between the proposed Tranche #1 and Tranche #2 replacement procurement and the EM&V roles and responsibilities, guidelines, and procedures outlined in D.16-08-019. The requirement that bidders provide EM&V plans is consistent with recent Commission direction to specify EM&V approaches in advance of launching new programs (for example, the Assigned Commissioner and Administrative Law Judge’s Ruling Regarding High Opportunity Energy Efficiency Programs or Projects, December 30, 2015.) PG&E notes that it is important that EM&V plans be relevant and appropriate to the proposed programs. NMEC would be a relevant and appropriate framework for some programs or projects that bidders may propose, but not relevant or appropriate for others. PG&E typically performs verification activities using either internal or external resources; given the size and importance of this procurement, we have proposed using an independent verification consultant to fulfill verification responsibilities.

d. Tranche #1 and Tranche #2 are competitive procurements that will use a least-cost, best-fit methodology to acquire GHG-free resources. The competitive solicitation, rather than an avoided cost test, is used to establish the price that is paid to acquire the specified quantity of resources. In the case of Tranche #1, PG&E proposes an additional eligibility criteria to require that each bid cost less, in levelized \$/kwh, than an RPS cost cap (Testimony, p. 4-5). This is consistent with Decision 16-06-067 (COL 2),

which states: "The avoided cost calculator does not necessarily apply to evaluations of utility solicitations"

PG&E does not know whether the winning EE programs and projects resulting from the Tranche #1 and Tranche #2 procurements would have, either as a group or when evaluated collectively with the EE portfolio, a TRC test benefit/cost ratio of 1.0 when utilizing the avoided costs approved in Resolution E-4801 or other future avoided costs that may be applicable when the Tranche #1 and Tranche #2 RFO results are submitted for approval. When it submits the winning contracts for approval, PG&E can provide a TRC test using various avoided cost assumptions, including any avoided costs adopted for use by the EE portfolio at the time.

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	SierraClub_001-Q08		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_SierraClub_001-Q08		
Request Date:	August 19, 2016	Requester DR No.:	001
Date Sent:	September 2, 2016	Requesting Party:	Sierra Club
PG&E Witness:	Jan Berman	Requester:	Matt Vespa

QUESTION 8

Table 2-2 of PG&E’s Prepared Testimony provides projections of future energy efficiency (“EE”) deployment. Page 2-11 states that “EE represents a forecast based on our several decades of history of engagement in EE, the CPUC’s adopted goals for PG&E’s EE programs, and the CPUC’s studies of future potential.”

- a. Do the EE estimates in Table 2-2 for 2025 and 2030 include EE that would be procured under Tranche #1 and/or Tranche #2?
- b. Do the EE estimates in Table 2-2 for 2025 and 2030 assume the doubling of energy efficiency required under SB 350?
- c. Please provide analysis and workpapers underlying the EE projections in Table 2-2.
- d. Please identify the referenced CPUC studies on future EE potential.
- e. Please identify the witness responsible for these answers.

ANSWER 8

- a) No.
- b) The energy efficiency (EE) estimates in table 2-2 include only PG&E’s programs and C&S activities, whereas SB350 is statewide. The plan for how the state will meet the SB350 goals – and who and how much various entities will contribute to meeting these – has not yet been developed; the CPUC and CEC have until November 2017 to develop this plan. Therefore, table 2-2 includes some additional savings as a result of SB350, but not a full doubling of PG&E’s savings – see additional details in response to “c” below.
- c) As described in Chapter 2 of the testimony, pp. 2-10 through 2-11, the Reference Case reflects PG&E’s expected forecast for EE. The EE forecast is based on the California Energy Commission (CEC) 2015 Integrated Energy Policy Report (IEPR (mid-case forecast)) and Achievable Energy Efficiency (AAEE) studies. PG&E then leveraged a stochastic approach to forecast aggregate changes in future EE savings in comparison to these baseline quantities. PG&E identified key drivers of future EE savings and determined their sensitivity within an established EE modeling framework, the Navigant Potential and Goals model. PG&E evaluated the sensitivity of key drivers with the varying levels of potential impact on future EE savings, and with varying levels of uncertainty. The key drivers include those with

the highest potential future impact, such as the effects of Senate Bill (SB) 350, C&S compliance enhancement or reduction efforts, and rebate programs. PG&E then estimated the uncertainty around each driver and finally evaluated their joint probability and conditional outcomes. Please see attachment "DiabloCanyonRetirementJointProposal_DR_SierraClub_001-Q08Atch1" for the details of the components of this forecast.

- d) The following are the studies PG&E consulted in developing its EE forecast:
- Navigant Consulting. 2015. Energy Efficiency Potential and Goals Study for 2015 and Beyond, Stage 1 Final Report. Navigant Consulting, Inc., Prepared for the California Public Utilities Commission.
 - Kavalec, Chris, Nick Fugate, Cary Garcia, and Asish Gautam. 2016. California Energy Demand 2016-2026, Revised Electricity Forecast. California Energy Commission. Publication Number: CEC-200-2016-001-V1CEC's 2015 Additional Achievable Energy Efficiency (AAEE) study.
 - Annie Gilleo, Seth Nowak, Meegan Kelly, Shruti Vaidyanathan, Mary Shoemaker, Anna Chittum, and Tyler Bailey. 2015. The 2015 State Energy Efficiency Scorecard. American Council for an Energy Efficient Economy.
- e) Jan Berman

EE Table

	2017	2025	2030
Committed Programs and C&S	4,417	11,037	12,056
Incremental Programs and C&S and SB350 impacts	2,065	9,639	15,405
Total	6,482	20,676	27,461
DCPP Proposal		2,000	3,000
Total w/ DCPP Proposal	6,482	22,676	30,461

Notes:

1. Accounting begins in 2015
2. All figures are in GWhs and are cumulative first year savings
3. Committed programs and code and standards (C&S) include 2015 program impacts and C&S that have been adopted and included in the 2015 CEC IEPR base case without Additional Achievable Energy Efficiency (AAEE)
4. Incremental programs and C&S include 2016 and beyond programs and codes and standards that were included in the CEC's AAEE
5. SB350 impacts reflect a stochastic estimate of impacts given current program operating conditions and uncertainty
6. Incremental programs do not include savings decay for the following reasons: a. New C&S typically absorbs EE decay as equipment is replaced at the newer required C&S. The last year of new C&S is 2022, which means that EE savings is retained in Incremental Programs rather than shifted to new C&S. b. New efficient technologies will develop over the next 15 years to replace end-of-life equipment. Any level of decay that occurs in this period would be absorbed by new C&S and new technologies.
7. Programs are on a gross basis; C&S are on a gross basis, less naturally occurring market adoption (NOMAD)
8. DCPP proposal is on a cumulative basis and assumes that half of the tranche 2 commitment is fulfilled by EE

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	SolarCity_002-Q03		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_SolarCity_002-Q03		
Request Date:	November 14, 2016	Requester DR No.:	002
Date Sent:	December 7, 2016	Requesting Party:	Solar City Corporation
PG&E Witness:	Todd Strauss	Requester:	Emily Sangi

QUESTION 3

In the PG&E Testimony at 1-4, lines 12–13, PG&E suggests that the Application will help PG&E meet “PG&E’s renewable targets and California’s renewable and GHG emission goals” including, as described in the PG&E Testimony at 1-3, lines 24-25, “increasing reliance on renewables—at least 50 percent by 2030”. With respect to these goals:

- a. Provide all documents, PG&E Workpapers, and analysis showing that the Tranche 1 procurement of 2,000 gross GWh of energy efficiency (“EE”) savings to be implemented between 2018 and 2024 that PG&E has proposed in its Application, at Attachment A (Joint Proposal), pages 5–6, Section 2.2, is the least-cost, best-fit portfolio of resources to serve PG&E’s customers and meet these goals.
- b. Provide all documents, PG&E Workpapers, and analysis showing that the Tranche 2 procurement of 2,000 GWh per year of GHG-free energy resources (including EE or renewable generation) that will commence deliveries or savings between 2025 and 2030 that PG&E has proposed in its Application, at Attachment A (Joint Proposal), pages 6–7, Section 2.3, is the least-cost, best-fit portfolio of resources to serve PG&E’s customers and meet these goals.
- c. Provide all documents, PG&E Workpapers, and analysis showing that the Tranche 3 commitment to achieve a 55 percent Renewables Portfolio Standard starting in 2031 that PG&E has proposed in its Application, at Attachment A (Joint Proposal), pages 7–8, Section 2.4, is the least-cost, best-fit portfolio of resources to serve PG&E’s customers and meet these goals.

ANSWER 3

PG&E objects to the request for “all documents, PG&E Workpapers, and analysis” as overbroad and burdensome. Subject to and without waiving this objection, in this Application, PG&E is proposing three tranches of procurement. These three tranches of procurement are stated in the Joint Proposal and were determined by agreement among the Joint Parties. As stated in PG&E’s Testimony (page 3-5): “the three tranches are a reasonable first step in orderly replacement of Diablo Canyon with GHG-free resources.”

PG&E does not claim that *each* tranche of procurement in the Joint Proposal and being proposed in this Application is the least-cost, best-fit portfolio of resources to serve PG&E's customers and meet PG&E's renewable targets and California's renewable and GHG goals. Nor does PG&E claim that the three tranches together are the least-cost, best-fit portfolio of resources to serve PG&E's customers and meet PG&E's renewable targets and California's renewable and GHG goals. PG&E claims that the three tranches together are a reasonable first step in orderly replacement of Diablo Canyon with GHG-free resources, for reasons described on pages 3-4 to 3-9 of PG&E's Testimony.

Regarding Tranche #2 procurement and least-cost, best fit (LCBF) methodology, "PG&E's evaluation of offers in the Tranche #2 RFO will apply the principles of PG&E's LCBF methodology," as stated on page 5-6 of PG&E's Testimony.

Regarding Tranche #3 procurement and LCBF methodology, "all RPS requirements and limits set forth in California's RPS statutes (California Public Utilities Code (Pub. Util. Code) Section 399.11 *et. seq.*) applicable at the time of compliance will apply, as interpreted by the California Energy Commission and the California Public Utilities Commission," as stated on page 6-1 of PG&E's Testimony. The LCBF methodology is currently part of those requirements.

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	SSJID_001-Q04		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_SSJID_001-Q04		
Request Date:	September 12, 2016	Requester DR No.:	001
Date Sent:	October 7, 2016	Requesting Party:	South San Joaquin Irrigation District
PG&E Witness:	Todd Strauss	Requester:	Emily Sangi

SUBJECT: PG&E TESTIMONY, CHAPTER 5 “TRANCHE #2 – ALL SOURCE GHG FREE ENERGY REQUEST FOR OFFERS,” AT 5-11, LINES 10–15)

QUESTION 4

PG&E states that “[t]he Clean Energy Charge would be paid by all electric distribution customers in PG&E’s service territory, including PG&E’s bundled electric customers as well as CCA customers and DA customers, except for those customers supplied by a CCA or DA provider electing to self-provide clean supply-side resources in lieu of having its customers pay the Clean Energy Charge.”

With respect to such testimony:

- a. Under the Joint Proposal, would departing load customers who are not PG&E electric distribution customers be responsible for the Clean Energy Charge associated with Tranche #2 and Tranche #3 procurement?
- b. If non-PG&E electric distribution customers would not be responsible for the Clean Energy Charge, how would PG&E handle cost allocation to municipal departing load customers of a large municipalization, as defined in Commission Decision 08-09-012,¹ for RPS procurement that occurs after the PG&E Application is approved and prior to the load departure?
 - i. Would the large municipal utility customers pay a PCIA for the above- market costs of this power while DA and CCA customers would pay a Clean Energy Charge?
 - ii. Provide an illustrative calculation demonstrating how costs would be allocated amongst all parties in such a situation.
- c. If non-PG&E electric distribution customers would be responsible for the Clean Energy Charge:
 - i. Provide specific references to the PG&E Testimony that describe the applicability of the Clean Energy Charge to non-PG&E electric distribution customers.

¹ D.08-09-012, mimeo at 27.

- ii. Describe the circumstances, if any, under which customers of a large municipalization would pay the Clean Energy Charge.
- iii. Describe the circumstances, if any, under which customers of a small municipalization² would pay the Clean Energy Charge.

ANSWER 4

a. If a departing load customer is not a PG&E electric distribution customer as of the date of the Commission decision approving this Application, then this non-PG&E electric distribution customer would not be responsible for the Clean Energy Charge associated with Tranche #2 and Tranche #3 procurement. If a departing load customer is a PG&E electric distribution customer as of the date of the Commission decision approving this Application, then this PG&E electric distribution customer would indeed be responsible for the Clean Energy Charge associated with Tranche #2 and Tranche #3 procurement that occurred prior to the departure of this customer.

b. PG&E believes that the municipal departing load customers of a large municipalization would be responsible for the Clean Energy Charge associated with RPS procurement and GHG-free supply-side Tranche #2 procurement that occurs on or after the date of the Commission decision approving this Application and on or before the date when the customer departs PG&E's bundled electric service.

Consistent with the principle of bundled customer indifference, as well as the principle that stranded costs should be recovered from those customers who benefited from the stranded asset, these municipal departing load customers should continue to be responsible for the Clean Energy Charge after their departure to the municipal utility. This is also consistent with Commission precedent (e.g., Decision 08-09-012).

- i. Customers departing PG&E's bundled electric service for a large municipal utility would be subject to the same procurement non-bypassable charges as customers departing for CCA or DA service. Assuming the phrase "large municipal utility customers" as used in this question refers to the same set of customers as the phrase "municipal departing load customers of a large municipalization" in Request 1-4b, then these customers would be PG&E bundled electric customers as of the date of the Commission decision approving this Application and therefore these customers, after departing PG&E's bundled electric service and becoming customers served by the municipal utility, would still be responsible for the following: the Clean Energy Charge component associated with Tranche #2 procurement; the Clean Energy Charge component associated with PG&E's RPS procurement that occurred on or after the date of the Commission decision approving this Application but before these customers departed PG&E's bundled electric service; the PCIA associated with the above-market costs of PG&E's RPS procurement that occurred before the date of the Commission decision approving this Application; and any other non-bypassable charges

² A "small municipalization" refers to any municipalization that does not qualify as a "large municipalization" as that term is defined in Decision 08-09-012, at 27.

associated with other procurement that occurred before the date these customers departed PG&E's bundled electric service.

ii. N/A

c. A customer who is not a PG&E electric distribution customer as of the date of the Commission decision approving this Application would not be responsible for the Clean Energy Charge.

i. N/A

ii. N/A

iii. N/A

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	TURN_001-Q07		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_TURN_001-Q07		
Request Date:	October 12, 2016	Requester DR No.:	001
Date Sent:	December 7, 2016	Requesting Party:	The Utility Reform Network
PG&E Witness:	Todd Strauss	Requester:	Matthew Freedman

QUESTION 7

Provide the following information regarding the statement at page 3-4, lines 22-25, of PG&E’s Testimony that “[r]estricting Tranche #1 to EE mitigates the possibility that Tranche #1 procurement exacerbates overgeneration conditions while Diablo Canyon continues to operate through the remainder of the current license period”:

- a) Explain how EE resources “mitigate the possibility” that Tranche #1 procurement will not exacerbate overgeneration conditions compared to other resources.
- b) Has PG&E performed or commissioned any analyses of the profiles of hourly generation or energy savings of alternative means for replacing Diablo Canyon energy, including renewable generation and Energy Efficiency? If so, provide any and all such analyses.
- c) Has PG&E performed or commissioned any analyses of the impact on PG&E or CAISO hourly load profiles of alternative means for replacing Diablo Canyon energy, including renewable generation and Energy Efficiency? If so, provide any and all such analyses.

ANSWER 7

- a) Without any Tranche #1 procurement, overgeneration conditions will occur on the CAISO grid with some frequency and magnitude during 2024 and the preceding years. Any incremental supply-side resources in Tranche #1 would not reduce the frequency and magnitude of overgeneration and would likely increase the frequency and magnitude of overgeneration. Similarly, any reduction in electricity demand (for example, any incremental EE) would not reduce the frequency and magnitude of overgeneration and would likely increase the frequency and magnitude of overgeneration. However, compared to a mix of wind, solar, and other supply-side non-dispatchable GHG-free energy resources, incremental EE would have a *smaller* increase in the frequency and magnitude of overgeneration conditions. This smaller increase in the frequency and magnitude of overgeneration conditions is what is meant by “mitigate.” Here is the complete statement on page 3-4 of PG&E’s Testimony:

Resources procured in Tranche #1 are intended to commence deployment before Diablo Canyon retires. Only EE resources will be procured in Tranche #1. If GHG-free energy supply resources

were included in Tranche #1, and therefore deployed when Diablo Canyon will still be operating, there is a good possibility that such additional supply-side resources would exacerbate projected overgeneration conditions on the CAISO grid, as discussed in Chapter 2. Restricting Tranche #1 to EE mitigates the possibility that Tranche #1 procurement exacerbates overgeneration conditions while Diablo Canyon continues to operate through the remainder of the current license period.

- b) PG&E objects to the request as overbroad, vague, and unduly burdensome when it asks for “any and all such analysis.” PG&E assumes this question refers to analyses prepared in the context of PG&E’s Application. Subject to and without waiving these objections, PG&E has performed various analyses of hourly profiles for alternative resources to replace Diablo Canyon’s energy. All responsive documents are privileged as attorney-client communications, attorney work product, or both, and were prepared at the direction of or by counsel.
- c) Yes, refer to the response to (b) above.

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	TURN_001-Q14		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_TURN_001-Q14		
Request Date:	October 12, 2016	Requester DR No.:	001
Date Sent:	November 2, 2016	Requesting Party:	The Utility Reform Network
PG&E Witness:	Jan Berman	Requester:	Matthew Freedman

QUESTION 14

Provide workpapers and documentation supporting PG&E’s statement at page 4-9, lines 20-22 of its Testimony that “[c]urrent program costs and savings were also reviewed to confirm that PG&E could reasonably expect to obtain 2,000 GWh of gross savings, measured on a PAC basis, at or below the Tranche #2 ‘RPS equivalent’ cost”.

ANSWER 14

The following information supports the statement that PG&E could reasonably expect to obtain 2,000 GWh of gross savings, measured on a PAC basis, at or below the Tranche #2 Renewables Portfolio Standard (RPS) equivalent cost.

Reported 2015 Program Savings and Costs

Energy Efficiency (EE) program results are provided in Attachment “DiabloCanyonRetirementJointProposal_DR_TURN_001-Q14Atch01”. Column G contains “2015 Cost per levelized kwh (gross; PAC).”

PG&E compared the RPS cap of \$82.29 /MWh levelized, nominal 2016 dollars to PG&E’s reported 2015 EE portfolio cost of \$0.086 /kwh levelized, nominal 2015 dollars for gross savings. (This figure excludes the following non-comparable program costs: Workforce, Education & Training, Codes & Standards, Emerging Technologies, and Statewide Coordination.) PG&E also compared the RPS cap to PG&E’s reported 2015 EE Third Party competitively bid program cost of \$0.08 /kwh levelized, nominal 2015 dollars for gross savings. This comparison shows that the RPS equivalent cost was within the range of reported EE program costs per kWh for 2015, and slightly higher than the competitively bid Third Party program, suggesting that it is feasible to acquire competitively bid EE programs and projects at or below the RPS equivalent cost.

Potential EE Bidder Interest

IDEEA365, an EE program initiated in the 2012-2015 EE cycle, was designed to solicit innovative EE ideas from third-party implementers across all sectors (residential, commercial, industrial, agricultural). PG&E released IDEEA365 solicitations in December 2012, April 2013, and August 2015. The IDEEA365 solicitations had limited budgets announced with the RFOs, of \$9,000,000 in 2012, \$6,000,000 in 2013, and \$5,000,000 in 2015. Despite the constrained budgets, the market responded

enthusiastically to the solicitation opportunity. In 2012, the RFO was specifically targeted to certain identified gaps in the portfolios, and implementers submitted 24 proposals resulting in 6 executed contracts for a total of 24,473,865 kwh and about 2 MW of EE savings. In 2013, the RFO was open to any innovative resource or non-resource EE proposals, and implementers submitted 128 proposals resulting in 9 executed contracts for a total of 7,705,377 kwh and 1.6 MW of EE savings. In 2015, implementers submitted 38 proposals, resulting in 4 executed contracts for a total of 11,238,536 kwh and 2.986 MW of EE savings.

The response of the market to the budget-constrained IDEEA365 solicitations illustrates broad interest from third-party implementers in participating in EE solicitations in PG&E's service territory, and indicates the potential for additional energy savings beyond that included in the current goals.

Reported EE Savings and Future EE Potential

The following discussion refers to Attachment "DiabloCanyonRetirementJointProposal_DR_TURN_001-Q14Atch02".

Energy Efficiency: Reported Savings and Future Goals (Slide 1):

The graph shows PG&E's evaluated gross EE Program savings from 2010-2012, reported gross EE Program savings from 2013-2015, and adopted/projected gross EE Program goals for 2016 – 2024. All savings/goals exclude Codes & Standards. Tranche #1 EE (average gross savings of 333 GWh per year from 2019 – 2024) and Tranche #2 (assumed to be half EE and half energy supply resources, resulting in 166 average gross GWh per year from 2025 – 2030) are shown on top of the current adopted EE goals. As shown on the graph, the addition of the Tranche #1 and #2 energy efficiency savings would result in future EE savings goals in a range that matches historic levels of EE savings achieved in 2010-2015. Considering California's strong commitment to EE, and to doubling EE savings in the future, it seems reasonable to assume that future savings could be achieved consistent with the reported savings for the period of 2010 - 2015.

Benchmarking with Other States (Slide 2):

The 2016 ACEEE State Scorecard (ACEEE 2016, <http://aceee.org/state-policy/scorecard>) reported that in 2015, the state of California spent about half as much on energy efficiency based on percentage of revenues as other leading states, and saved about two thirds as much energy as other leading states (EE savings as a percent of sales). The other leading states – Vermont, Rhode Island, Massachusetts – have, like California, invested in energy efficiency for many years. This benchmark suggests that there is still opportunity for California to increase EE savings. This finding is consistent with SB 350. Implementation of Tranche #1 on an annualized basis, at proposed savings and budget levels, would still leave California behind other leading State's achievements and spending.

Commercial EE Potential (Slide 3):

The CPUC potential and Goals study (Navigant 2015, <http://www.cpuc.ca.gov/General.aspx?id=2013>) reported EE potential in terms of

achievable and technical potential. Achievable potential is used to set the utilities' goals. Comparing achievable potential to technical potential shows that there is still significant untapped technical potential projected after 10 years of EE achievement, particularly in the lighting and HVAC end-uses. Comparing technical potential to measured load provided by the 2006 California Commercial End-Use Survey (CEUS 2006, <http://www.energy.ca.gov/ceus>), shows that the lighting and HVAC end-uses, which are the largest end-use segments, have significant potential for energy efficiency to reduce segment consumption. For example: lighting, the largest end-use, represented 34% of commercial building load in 2006, yet the potential model shows that 10 years of EE programs meeting achievable potential will reduce the lighting load by less than 20%. Substantial inefficiency remains.

Lighting Saturation (Slide 4):

The figure is from ITRON's 2014 Commercial Saturation Survey (CSS) (Itron 2014, [http://www.calmac.org/publications/California Commercial Saturation Study Report Finalv2ES.pdf](http://www.calmac.org/publications/California%20Commercial%20Saturation%20Study%20Report%20Finalv2ES.pdf)). It provides a comparison of lighting improvements between two public studies conducted eight years apart: CEUS (2006) and CSS (2014). All lighting under the CEUS study (first bar of each pair) is considered inefficient by today's standard. However, in the intervening eight years between studies, very little improvement has been achieved in many types of commercial buildings. The comparison shows that, as a whole, the lighting market in 2014 was still more than 70% inefficient. In particular, the food/liquor, health/medical clinic, miscellaneous, office, restaurant, and school segments have made very little progress in shifting to more efficient lighting over the eight years. Retail and warehouse segments have made better progress in shifting to efficient lighting, but substantial opportunity for improvement remains. The study shows significant room for improvement in the efficiency of installed lighting, particularly if programs can be structured and targeted to address issues or barriers to adoption which are causing some sectors to lag behind.

HVAC Saturation (Slide 5):

As with lighting, commercial HVAC installed in buildings today is mostly inefficient. The 2014 CSS only identified 5% of the market as efficient. Again, this highlights a significant opportunity for improvement that is not identified as "achievable" in the Potential Study.

Docket No.: A. 16-08-006
Exhibit No.: _____
Date: January 27, 2017
Witness: Mr. Kirby Dusel

**INTERVENOR TESTIMONY OF MARIN CLEAN ENERGY
ON THE APPLICATION OF PACIFIC GAS AND ELECTRIC COMPANY
REGARDING THE DIABLO CANYON POWER PLANT**

**APPLICATION OF PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)
FOR APPROVAL OF THE RETIREMENT OF DIABLO CANYON POWER PLANT,
IMPLEMENTATION OF THE JOINT PROPOSAL, AND RECOVERY OF
ASSOCIATED COSTS THROUGH PROPOSED RATEMAKING MECHANISMS.**

TABLE OF CONTENTS

INTRODUCTION	1
I. RETIREMENT OF DIABLO CANYON POWER PLANT	1
II. PROPOSED REPLACEMENT PROCUREMENT	1
A. The Growth of Community Choice Aggregation.....	1
i. CCAs Will Serve 17% of Total Retail Sales in PG&E’s Service Territory by the End of 2017.....	1
ii. CCAs Will Likely Expand Much Quicker Than PG&E Estimates	5
B. PG&E’s Replacement Procurement Proposal Is Not Prudent.....	8
i. PG&E Likely Does Not Need to Replace Diablo Canyon	8
ii. Northern California CCAs Are Focused on Reducing Energy-Related GHG Emissions and Have an Obligation to Procure Their Own Resources	11
iii. CCA Procurement of Clean Energy Resources Should More Than Offset the GHG Emissions Impact of Closing Diablo Canyon.....	13
iv. PG&E’s Proposal Would Limit the Independent Planning and Procurement Obligation of CCAs	15
III. PROPOSED EMPLOYEE PROGRAM	16
IV. PROPOSED COMMUNITY IMPACTS MITIGATION PROGRAM	17
V. RECOVERY OF LICENSE RENEWAL COSTS	17
VI. PROPOSED RATEMAKING AND COST ALLOCATION ISSUES.....	17
VII. LAND USE, FACILITIES AND DECOMMISSIONING ISSUES	17
VIII. EXHIBITS	A-1
A. Exhibit A: PG&E Data Response to PG&E Data Request No. MCE_001-Q04	A-1
B. Exhibit B: PG&E Data Response to PG&E Data Request No. MCE_003-Q07.....	B-1
C. Exhibit C: PG&E Data Response to PG&E Data Request No. TURN_001-Q05.....	C-1
D. Exhibit D: PG&E Data Response to PG&E Data Request No. MCE_003-Q01	D-1
E. Exhibit E: PG&E Data Response to PG&E Data Request No. MCE_002-Q07	E-1
IX. APPENDICES.....	A-1
A. Appendix A: Statement of Qualifications of Kirby Dusel	A-1
B. Appendix B: Resume of Kirby Dusel	B-1

1 **INTRODUCTION**

2 Marin Clean Energy (“MCE”) submits this intervenor testimony in response to PG&E’s
3 proposal to retire the Diablo Canyon Power Plant (“Diablo Canyon”), replace it with energy
4 efficiency and renewables procurement, and shift some portion of the related costs to customers
5 that will receive electric service from Community Choice Aggregation (“CCA”) programs. MCE
6 disagrees with many aspects of PG&E’s proposal, and it is one of the signatories to the Joint
7 Intervenor testimony that details many of these concerns.

8 MCE provides this separate testimony to explain why PG&E’s proposal may significantly
9 underestimate the magnitude and timing of the growth of CCAs in PG&E’s service territory. In
10 consideration of MCE’s expectations regarding eminent and planned CCA load growth within
11 Northern California, PG&E’s future bundled electricity sales will likely decline more quickly and
12 significantly than the utility anticipates, and PG&E’s request to procure new resources due to
13 discontinued operation of Diablo Canyon seems substantially unnecessary. In addition, this
14 testimony explains why PG&E’s proposal to procure replacement resources on behalf of CCA
15 customers is inappropriate, unnecessary to achieve the state’s climate goals, and contrary to the
16 independence and statutory procurement obligations of CCA programs.

17 **I. RETIREMENT OF DIABLO CANYON POWER PLANT**

18 MCE’s individual intervenor testimony does not address this issue.

19 **II. PROPOSED REPLACEMENT PROCUREMENT**

20 **A. The Growth of Community Choice Aggregation**

21 *i. CCAs Will Serve 17% of Total Retail Sales in PG&E’s Service Territory*
22 *by the End of 2017*

23 Interest in CCA evaluation and program implementation has increased significantly since
24 MCE commenced operation in 2010. There are currently four operating CCA programs located

1 in PG&E’s Northern California service territory: (1) MCE, which commenced operations in May
2 2010; (2) Sonoma Clean Power (“SCP”), which commenced operations in May 2014; (3)
3 CleanPowerSF, which commenced operations in May 2016; and (4) Peninsula Clean Energy
4 (“PCE”), which commenced operations in October 2016. In 2017, at least two additional CCA
5 programs are expected to commence operations in PG&E’s service territory: (1) Silicon Valley
6 Clean Energy (“SVCE”), with customer phase-in scheduled to commence in April and conclude
7 in October; and (2) Redwood Coast Energy Authority, which is expected to commence customer
8 service in May 2017.¹ PCE is also scheduled to enroll the significant majority of its remaining
9 service accounts in April 2017, during Phase 2 of its customer enrollment process. In addition,
10 SCP is expected to commence customer service in Mendocino County with enrollments occurring
11 in June 2017.²

12 By the end of 2017, nearly 1.1 million customers in PG&E’s service territory will be
13 receiving electric service from a CCA. Based on current retail sales estimates, these customers are
14 projected to use approximately 14,000 GWh per year, which is over 17% of PG&E’s total retail
15 sales.³ With future enrollments of the CleanPowerSF program and other prospective CCA

¹ The assumption that two additional CCA programs will commence service in 2017 is based on information reflected in the respective CPUC-certified CCA Implementation Plans (and Statements of Intent) of Silicon Valley Clean Energy Authority and Redwood Coast Energy Authority. Submittal and CPUC-certification of a CCA Implementation Plan is a prerequisite to CCA service commencement.

² Sonoma Clean Power Community Choice Aggregation Implementation Plan and Statement of Intent (Second Revised and Updated), October 2016, at 2.

³ Based on total retail sales within the PG&E footprint of approximately 82,000 GWh in 2017, as reflected in PG&E’s Advice Letter 4902-E-B, Supplemental Filing – Annual Electric True-Up – Consolidated Changes to PG&E Electric Rates Effective January 1, 2017, Attachment 2, dated December 30, 2016 (“PG&E Advice Letter 4902-E-B”). *See also* PG&E Prepared Testimony, Table 2-2 at 2-10. Therein, PG&E estimates its footprint will be 82,039 GWh in 2017.

1 programs that intend to commence customer service, this percentage will likely rise sharply over
 2 the upcoming 12-36 month period. Table 1 provides additional information regarding existing and
 3 soon-to-be operating CCA programs in Northern California – such programs are known to have
 4 submitted CPUC-certified Implementation Plans with initial customer service expected to occur
 5 within 2017.

6 **Table 1: Projected CCA Load Growth Through 2017 In PG&E’s Service Territory**

CCA Program Name	Initial Date of Service Commencement	Local Distribution Company	Customer Accounts	Retail Sales (GWh/Year)⁴
Marin Clean Energy	May 2010	PG&E	~260,000	~2,700
Sonoma Clean Power	May 2014	PG&E	~230,000	~2,600
CleanPowerSF ⁵	May 2016	PG&E	~55,000	~440
Peninsula Clean Energy	October 2016	PG&E	~260,000	~3,600
Silicon Valley Clean Energy	April 2017	PG&E	~210,000	~3,700
Redwood Coast Energy Authority	May 2017	PG&E	~60,000	~700
Total			~1,075,000	~14,000

7 Additional CCA programs are also being actively evaluated and implementation activities
 8 are underway in almost all portions of PG&E’s service territory, including in the counties of Yolo,
 9 Monterey, Santa Cruz, San Benito, Alameda, Contra Costa, and Placer. Based on the successful

⁴ Unless otherwise noted, retail sales estimates reflect anticipated annual retail electricity sales following planned customer phase-in activities or service area expansions that are expected to occur during the 2017 calendar year.

⁵ Statistics reflect only the initial customer enrollments of CleanPowerSF. Additional, planned implementation phases will result in substantial increases to the number of customers and retail sales served by this program. The schedule for future CleanPowerSF phases is currently under development.

1 formation of numerous CCAs and the widespread interest in further CCA formation, it is
2 reasonable to assume that a much larger portion of PG&E’s current retail electric customers will
3 be served by CCA programs within a few years.

4 As PG&E explains in its Application, the growth of CCAs is one of the main reasons PG&E
5 anticipates declining retail sales:

6 PG&E’s electricity supply needs are uncertain. Three key trends have significantly
7 reduced PG&E’s electricity sales in recent years and will likely have even greater
8 impacts in the future – the expansion of energy efficiency, increases in distributed
9 generation especially privately-owned solar resources, and the growth of alternative
10 energy supplies such as Community Choice Aggregation (“CCA”). This downward
11 pressure on bundled electric sales reduces the need for electricity from Diablo
12 Canyon.⁶

13
14 While PG&E expresses some uncertainty regarding its electric energy requirements, the reality is
15 that PG&E’s energy requirements are clearly declining and much of the decline is attributable to
16 the growth of CCAs.

17 In terms of current departing load estimates, PG&E recently filed its supplemental Annual
18 Electric True-Up filing, which reflected projected service area-wide retail sales of approximately
19 82,000 GWh in 2017.⁷ Of this total, PG&E indicated that approximately 16,635 GWh, or just
20 more than 20% of the service area total, will be served by Direct Access (“DA”) and CCA

⁶ Application of Pacific Gas and Electric Company (U 39 E) for Approval of the Retirement of Diablo Canyon Power Plant, Implementation of the Joint Proposal, and Recovery of Associated Costs through Proposed Ratemaking Mechanisms, August 11, 2016 (“PG&E Application”), at 5. *See also* PG&E Prepared Testimony at 2-6 – 2-7. PG&E states that “[a]s the number of CCAs continues to expand, and the electricity load served by these CCAs increase, there are corresponding decreases in the amount of energy and capacity needed to meet the electricity load of PG&E’s bundled electric customers.”

⁷ PG&E Advice Letter 4902-E-B. *See also* PG&E Prepared Testimony at Table 2-2 at 2-10. PG&E’s August 11, 2016 Prepared Testimony forecasts that 14,437 GWh will be served by DA and CCA providers in 2017. Comparing this forecast to the forecast presented in PG&E Advice Letter 4902-E-B indicates that the forecast in PG&E’s Prepared Testimony underestimates CCA and DA load departures in 2017.

1 providers in the coming year.⁸ PG&E’s forecasting conventions seem to have excluded certain
2 CCA load because the associated CCA program had not yet submitted its resource adequacy load
3 forecast to jurisdictional regulatory authorities at the time of PG&E’s forecast preparation.⁹ In
4 consideration of this forecasting issue, PG&E’s estimate generally seems reasonable based on a
5 rough approximation of current CCA sales volume and PG&E’s assumption that approximately
6 12% of its retail load will be served by DA providers in 2017.¹⁰ However, eminent CCA program
7 implementation and expansion activities, certain of which do not seem to be reflected in PG&E’s
8 current retail sales forecast (due to PG&E’s aforementioned forecasting practice for departing
9 load), will likely result in actual CCA sales meaningfully exceeding PG&E’s expectations in the
10 near term. As described below, CCA activities that will occur during 2017 will result in sharp
11 increases to the aggregate retail sales of CCA providers. This eventuality would also seem to
12 impact PG&E’s anticipated trajectory of CCA load growth in the years leading up to Diablo
13 Canyon’s closure.

14 ***ii. CCAs Will Likely Expand Much Quicker Than PG&E Estimates***

15 The percentage of load served by CCA service providers will rise sharply over the next
16 few years. As noted above, CCA providers will soon provide service to over 17% of PG&E’s

⁸ PG&E Advice Letter 4902-E-B.

⁹ See PG&E Response to MCE Data Request No. MCE_001-Q04. PG&E states that its 2017 CCA load departure estimates provided in its Prepared Testimony exclude CCA load from the bundled forecast if the CCA submitted: (1) “a Binding Notice of Intent; (2) provided a load forecast to the CPUC and/or the California Energy Commission for the purpose of taking on resource adequacy load requirements for the following year; or (3) started enrolling customers as of the date of the forecast.”

¹⁰ See PG&E Response to MCE Data Request No. MCE_003-Q07. In this response, PG&E indicates that it includes a fixed amount of DA load equivalent to 9,842 GWh/year. This DA sales total approximates 12% of the annual retail sales total reflected in PG&E’s December 30, 2016 Annual Electric True-Up filing.

1 retail electricity load. After the completion of customer enrollments and expansion activities
2 expected to occur in 2017, it is reasonable to assume that nearly 30% of retail electricity sales
3 within the PG&E service territory will be supplied by both CCA and DA providers by the end of
4 2017.

5 PG&E projects that CCA and DA sales may comprise 37% (High Load Scenario) to 53%
6 (Low Load Scenario) of retail sales within its service territory as soon as 2025.¹¹ This range rises
7 to between 38% (High Load Scenario) and 58% (Low Load Scenario) of retail electric sales by
8 2030.¹² Assuming PG&E is correct that DA sales will remain relatively constant over time (at
9 9,842 GWh/year),¹³ PG&E estimates that CCA load is expected to account for 25% to 41% of
10 retail sales within the its service territory by 2025.¹⁴

11 The magnitude of the percentages reflected in PG&E's Reference Cases (for calendar years
12 2025 and 2030) and Low Load Scenarios (also for calendar years 2025 and 2030) seem
13 reasonable.¹⁵ However, the assumed timing of this transition is likely too conservative given that
14 CCAs should be providing over 17% of PG&E's retail sales by the end of 2017¹⁶ with a significant
15 pipeline of additional CCA programs actively pursuing implementation activities as well. These
16 considerations will likely contribute to CCA sales achieving PG&E's projections (for 2025 and
17 2030) much sooner than expected. Certain CCA programs in the East Bay, Central Coast and
18 Central Valley are diligently working towards program implementation, with certain programs

¹¹ PG&E Prepared Testimony, Table 2-2 at 2-10.

¹² *Id.*

¹³ See PG&E Response to MCE Data Request No. MCE_003-Q07.

¹⁴ See PG&E Prepared Testimony, Table 2-2 at 2-10.

¹⁵ See *id.*

¹⁶ The percentage of CCA load will further increase, if the planned implementation of the Valley Clean Energy Alliance is launched, per schedule, in late 2017.

1 targeting service commencement in late 2017 or 2018. Following the completion of customer
2 phase-in activities, these new CCA programs are expected to have annual electricity sales ranging
3 from approximately 1,000-4,000 GWh per program. For example, the Monterey Bay Community
4 Power (“MBCP”) initiative, which includes the counties of Monterey, San Benito and Santa Cruz,
5 is projected to have annual retail electricity sales in excess of 3,000 GWh, or more than 3.7% of
6 the retail sales total currently reflected within PG&E’s footprint. To the extent that MBCP’s CCA
7 program and others like it are successful in launching their respective CCA efforts, the composite
8 of CCA retail sales within PG&E’s footprint will increase quickly and significantly.

9 Should similarly-sized CCA programs continue to form, as expected, another 10% - 20%,
10 (or more) of retail sales could transition to CCA providers within the next 12-36 months. Such a
11 schedule could result in aggregate CCA retail sales meeting or surpassing PG&E’s projections
12 well in advance of the 2025 calendar year. The successful launch of certain new programs could
13 advance achievement of the 2025 Reference Case estimates forward to 2020 and would alleviate
14 PG&E’s need to plan for such sales beyond that timeframe; PG&E’s planning activities should
15 reasonably anticipate further reductions in bundled sales thereafter. For this reason, it seems
16 appropriate to assume a more expedited timeline for the load departure reflected in PG&E’s
17 planning assumptions and/or higher proportions of expected CCA retail sales. Over the 10- and
18 15-year timelines reflected in PG&E’s Diablo Canyon Power Plant Need Analysis, it would be
19 more realistic to assume aggregate DA and CCA load metrics that more closely align with the Low
20 Load Scenario: 53% aggregate CCA and DA sales in 2025, rising to 58% aggregate CCA and DA
21 sales in 2030.¹⁷

¹⁷ See PG&E Prepared Testimony, Table 2-2 at 2-10.

1 When projecting the impact of CCAs on PG&E’s future load, it is also important to
2 consider that the successful formation of California’s early CCAs has generally served to expedite
3 the evaluative and implementation activities undertaken by subsequent communities. Many
4 communities are now evaluating and choosing to launch CCAs at a quicker pace, because they
5 have witnessed the success of California’s operational CCA programs. As a result, the timeline
6 for CCA implementation (i.e. the period of time generally required for program evaluation and
7 related implementation activities), continues to get shorter – newer CCA programs are no longer
8 taking several years to evaluate, organize and implement their respective programs. Instead,
9 communities with more recent interest in CCA formation are now able to launch programs within
10 12-18 months following initial evaluation activities.

11 PG&E’s expectations regarding load loss due to CCA formation are generally reasonable,
12 but the utility should also evaluate scenarios under which CCA load departure occurs more rapidly
13 than currently anticipated with higher overall percentages of CCA load reflected in the 2025 and
14 2030 Reference Cases. In light of the significant new procurement commitments that are
15 contemplated in PG&E’s Application, it seems responsible to consider the likely impacts of this
16 advanced transition to CCA service and the reasonable prospect that PG&E will no longer be
17 responsible for supplying such volumes much sooner than anticipated.

18 **B. PG&E’s Replacement Procurement Proposal Is Not Prudent**

19 *i. PG&E Likely Does Not Need to Replace Diablo Canyon*

20 According to PG&E, expected reductions in bundled retail sales will reduce the need for
21 electricity from Diablo Canyon.¹⁸ If such sales reductions continue on a pace that meets or exceeds

¹⁸ *Id.* at 1-3; 2-9.

1 PG&E’s projections, there will be no, or a very limited, practical need to replace such electricity
2 with other power purchases, particularly purchases from baseload or renewable generating
3 technologies that have intermittent or peak-producing delivery profiles (which currently offer a
4 diminished value to California’s bulk electric system due to conditions of over-generation during
5 certain periods of time). Such resource types would seem to introduce unnecessary costs and
6 planning uncertainty and would also supply energy volumes which, according to PG&E’s
7 Application, are likely unnecessary.¹⁹

8 PG&E’s reduced need for electricity is reflective of a broader decline in its electricity needs
9 as a result of recent and projected future sales reductions. The fact that relicensing issues related
10 to Diablo Canyon temporally coincide with projected retail sales reductions amongst PG&E’s
11 declining customer base is substantially coincidental. PG&E could reduce volumes from a variety
12 of its other resources, including conventional, renewable and/or carbon-free technologies, to
13 address the issue of declining sales. A more balanced reduction in planned energy purchases,
14 reflecting a broader range of generating technologies and related delivery profiles, would likely
15 reflect a more prudent planning approach by PG&E to address these expected sales reductions –
16 such an approach would seem to contribute to the development of a supply portfolio that more
17 closely reflects PG&E’s evolving resource needs.

18 In its Application, PG&E notes that “the California electric system will need more flexible
19 resources to integrate renewable energy and has less need for baseload electricity resources,”²⁰ so
20 it is unclear why PG&E’s proposed procurement of additional renewable energy resources, which
21 have little, if any, operating flexibility, represents a rational approach to addressing the closure of

¹⁹ See *id.* at 1-3.

²⁰ PG&E Application at 6.

1 Diablo Canyon.²¹ The procurement of additional renewable resources would not help solve the
2 flexible resource needs PG&E identifies in its Application or solve the intermittency issues that
3 already challenge California’s grid. In fact, the addition of certain renewable generating
4 technologies would likely exacerbate this issue by introducing additional intermittent and peak-
5 producing generators that would need to be balanced and integrated by flexible resources.

6 It is certainly possible that there is no need at all to replace the generation that will be lost
7 when PG&E closes Diablo Canyon. PG&E’s Application notes that,

8 As more solar generation comes on line over time, and when its output is at peak
9 supply (e.g., in the middle of the day), there is less room on the electric system for
10 energy from inflexible and large baseload resources such as Diablo Canyon.
11 Additionally, due to expected overgeneration throughout parts of the year, Diablo
12 Canyon may contribute to higher system costs as its current generation profile and
13 lack of dispatchability cause challenges for efficiently integrating renewable
14 resources.²²

15 PG&E’s observation clearly supports the discontinued operation of Diablo Canyon, but also
16 implies that discontinued operation of the facility, from an operational perspective, is likely a
17 solution to PG&E’s declining energy requirements in and of itself. Diablo Canyon’s closure is
18 also somewhat conveniently timed with the growth of CCAs because, as the load serving
19 responsibility for a significant portion of PG&E’s current retail sales base transitions to CCA
20 providers in the years preceding Diablo Canyon’s closure, PG&E will not need to plan for and
21 procure power resources for those departing customers.

²¹ In PG&E Response to TURN Data Request No. TURN_001-Q05, PG&E states it is not seeking authorization to procure flexible integrating resources in its Application. Instead, PG&E defers consideration of flexible integrating resources to the IRP proceeding. In PG&E Response to MCE Data Request No. MCE_003-Q01, however, PG&E admits that flexible resources would “provide additional flexibility to help balance load and resources to integrate renewables onto the system” in a situation where there are increased amounts of renewables on the system coinciding with the retirement of a baseload resource.

²² PG&E Application at 6.

1 *ii. Northern California CCAs Are Focused on Reducing Energy-Related*
2 *GHG Emissions and Have an Obligation to Procure Their Own*
3 *Resources*

4 In the planning discussions leading to MCE’s formation, there was a keen focus amongst
5 the participating communities and stakeholders in developing a CCA program that would advance
6 the procurement and delivery of carbon-free power supply over the near-, mid- and long-term
7 planning horizons. Affecting such a transition was one of MCE’s charter objectives, and since
8 service commenced in May 2010, the organization has been very successful in providing its
9 customers with an electric resource mix that offers a highly competitive emissions profile when
10 compared to the incumbent utility, PG&E. Following MCE’s early stage operations, the
11 evaluation and implementation of other Northern California-based CCA programs has
12 substantially focused on similar clean-energy objectives, with each of the operating and soon-to-
13 be operating programs demonstrating a substantial commitment to GHG emissions reductions as
14 well.

15 As an example, MCE’s 2017 Integrated Resource Plan update targets a 75% carbon-free
16 supply portfolio in 2017, increasing to 100% carbon-free over the 10-year planning period.²³
17 Similarly, SCP’s clean energy policy includes a portfolio emissions limitation that is set at a
18 minimum 20% below the incumbent utility. CleanPowerSF has also adopted an emissions policy
19 that promotes a comparatively cleaner power supply (as measured by the GHG emissions intensity
20 of each organization’s supply portfolio), relative to PG&E. Furthermore, PCE has adopted an
21 aggressive clean energy policy, targeting a minimum 75% GHG-free resource mix with half of the

²³ MCE’s draft 2017 Integrated Resource Plan update will be presented to its Governing Board in February or March, 2017, with approval of the noted clean energy targets expected to occur during such meeting.

1 organization’s power supply expected to come from bundled, RPS-eligible renewable energy
2 products.²⁴

3 Even with the existing, carbon-free power supply produced by PG&E’s Diablo Canyon
4 Power Plant, which typically comprises about 22% of the utility’s annual power content,²⁵
5 California’s operational CCAs have been able to achieve noteworthy GHG reductions without the
6 use of nuclear generating resources.²⁶ This has been accomplished through the documented
7 delivery of various renewable energy products and regionally produced hydroelectricity. With the
8 launch of each successive CCA program, additional renewable energy and hydroelectricity is
9 needed to fulfill customer commitments that have been made by such organizations, contributing
10 significantly to California’s renewable energy infrastructure buildout. The clean energy
11 requirements of Northern California CCAs have supported the operation and development of
12 thousands of megawatts of new and existing renewable generators located within California and
13 throughout the Western United States. In fact, multiple Northern California CCAs have already
14 eclipsed California’s 2030 Renewables Portfolio Standard procurement mandate of 50% with
15 certain of these CCAs expected to incorporate additional renewable energy deliveries over time.

16 Northern California’s soon-to-be operating CCA programs are also targeting significant
17 GHG emission reductions, with certain programs aspiring to “zero out” carbon emissions through

²⁴ Peninsula Clean Energy is limiting its renewable energy procurement to Portfolio Content Category 1 and Portfolio Content Category 2 products, both of which are typically referred to as “bundled renewable energy.”

²⁵ The proportion of nuclear generating supply, as represented in PG&E’s respective Power Content Labels for calendar years 2013, 2014 and 2015, was 22% 21% and 23%, respectively.

²⁶ In PG&E Response to MCE Data Request No. MCE_002-Q07, PG&E acknowledges that CCA procurement activities reduce PG&E’s energy and capacity needs to serve its bundled customers. Yet, PG&E asserts that the benefits that these CCA activities provide is outside the scope of the instant proceeding.

1 the exclusive delivery of renewable energy and hydroelectricity. In particular, SVCE will
2 commence service in April 2017 with a 100% carbon-free supply goal. To support this goal, SVCE
3 recently entered into multiple power supply agreements with various energy services providers,
4 which will result in the delivery of significant quantities of renewable energy and hydroelectricity
5 during early-stage operations. In fact, the significant majority, if not all, of aspiring Northern
6 California CCA programs seem to share the objective of reducing electric power sector GHG
7 emissions through the composition of program-specific energy supply portfolios that demonstrate
8 overall emission rates below those of the incumbent utility. The CCAs' clean energy goals should
9 continue to transform California's clean energy landscape in the coming years.

10 ***iii. CCA Procurement of Clean Energy Resources Should More Than***
11 ***Offset the GHG Emissions Impact of Closing Diablo Canyon***

12 PG&E's annual retail sales are reduced with each successive CCA that commences
13 customer service.²⁷ The reduction in PG&E's load has the effect of "cleaning" the utility's overall
14 resource mix by marginally increasing the proportionate share of renewable, hydro and nuclear
15 supply that are attributed to the utility's remaining customers. The short-term impacts of this
16 transition will apply additional pressure to both new and existing Northern California CCA
17 initiatives, as such programs will be required to further increase their planned clean energy
18 purchases to ensure that emissions do not unexpectedly rise above the near-term declining
19 emissions rate of the incumbent utility. Over the longer-term, PG&E may adjust its renewable and
20 conventional electricity purchases to account for load lost to CCAs, but the renewable energy
21 commitments that utility and CCA buyers enter into are often long-term in duration (specifically,
22 ten years or longer), which means that the net effect of CCA service commencement tends to be

²⁷ See *id.*

1 an overall increase in long-term supply commitments to new, California-based renewable
2 generating capacity.

3 Leading up to the 2024-2025 calendar years in which the licenses for the Diablo Canyon
4 generating units will expire, CCA formation is expected to substantially offset the prospective
5 environmental impacts related to discontinued operation of this facility. In particular, the
6 approximate 22% of PG&E’s supply that is produced by this facility will likely be replaced, in
7 effect, by carbon-free resources procured by environmentally-focused CCA programs. For
8 example, if 30% of PG&E’s load transitions to CCA service before 2024 (which, as explained
9 above, is a conservative estimate of CCA growth), and 75% of such load is committed to carbon-
10 free procurement mandates (which is a reasonable assumption in light of current CCA resource
11 plans and preferences), then 22.5% of PG&E’s historical retail sales would be served by CCA-
12 procured carbon-free sources – this scenario alone would result in a quantity of CCA-procured,
13 carbon-free energy volumes generally equivalent to the proportion of nuclear generation
14 historically reflected in PG&E’s resource mix. To the extent additional PG&E load departs to
15 other like-minded CCA programs, the carbon-free percentage would only improve, which would
16 result in net emissions reductions even with the closure of Diablo Canyon. Assuming CCA
17 formation continues along its expected growth trajectory, there are a variety of reasonably-likely
18 transitional scenarios in which California’s net electric sector GHG emissions would drop, relative
19 to the status quo, even after Diablo Canyon is closed.

20 The growth of CCAs is likely to improve both the near- and longer-term emission profiles
21 associated with electric utility service in Northern California. CCAs have been and will continue
22 to be responsible custodians of the environment, and inevitable transitions to the CCA service

1 model will likely result in carbon reductions by virtue of the significant carbon-free purchase
2 commitments that have been (and will continue to be) made by Northern California CCAs.

3 ***iv. PG&E’s Proposal Would Limit the Independent Planning and***
4 ***Procurement Obligation of CCAs***

5 California statute clearly states that CCAs are obligated to procure electricity resources on
6 behalf of their customers.²⁸ Both utilities and CCAs must comply with state’s Renewables
7 Procurement Standard (“RPS”) mandate,²⁹ which is a significant element of California’s plan for
8 advancing clean energy procurement and delivery within the state through 2030. Even though the
9 RPS imposes substantial renewable energy procurement requirements on utilities and CCAs,
10 currently operating and prospective CCA programs have treated the RPS as a floor, opting to
11 deliberately exceed applicable mandates in an effort to reduce reliance on fossil fuels and avoid
12 related GHG emissions.

13 In addition to exceeding their RPS procurement mandates, CCAs have also chosen to
14 pursue more broadly characterized carbon-free portfolio targets. These internal mandates have
15 been established by Northern California CCAs in an effort to assemble compelling,
16 environmentally responsible supply portfolios that will result in general GHG emission reductions
17 relative to the status quo. CCAs have demonstrated a compelling track record of success in these
18 areas without the intervention of PG&E. Unless this track record materially changes, there is no

²⁸ See Cal. Pub. Util. Code Section 366.2. This section mandates that CCAs’ governing boards, comprised of locally elected officials, “be *solely responsible* for all generation procurement activities on behalf of the [CCA’s] customers, except where other generation procurement arrangements are expressly authorized by statute” (emphasis added).

²⁹ See Cal. Pub. Util. Code Section 399.11.

1 need for PG&E’s contrived procurement mandates, which would only serve to contradict the
2 procurement obligations and independence of locally administered CCA programs.

3 If PG&E is interested in procuring additional renewable energy on behalf of its customers,
4 it should develop a responsible, thoughtful plan that specifically focuses on the declining needs of
5 its own, bundled customer base. Such a plan should also align with prevailing clean energy
6 procurement mandates, as adopted by the California legislature, as well as the clean energy
7 increases that are already underway as a result of CCA formation. Any costs associated with the
8 implementation of such a plan, whether in response to discontinued operation of Diablo Canyon
9 or any other motivation, should be the exclusive responsibility of PG&E’s bundled customers
10 and/or shareholders, as departing customers, particularly CCA customers, will not benefit directly
11 from any such renewable energy products PG&E might choose to procure.

12 PG&E’s decision to close Diablo Canyon should not be used as an excuse to
13 inappropriately infringe upon the procurement obligations and independence of the CCAs.³⁰ CCA
14 customers are already responsible for the costs related to their respective CCA’s procurement
15 efforts, which have substantially focused on increasing amounts of clean energy resources. PG&E
16 must take a similar approach in addressing the mandated and voluntary clean energy requirements
17 of its organization, by reflecting related costs in the bundled generation rate and not through other
18 supplemental charges.

19 **III. PROPOSED EMPLOYEE PROGRAM**

20 MCE’s individual intervenor testimony does not address this issue.

³⁰ See Cal. Pub. Util. Code Section 366.2.

1 **IV. PROPOSED COMMUNITY IMPACTS MITIGATION PROGRAM**

2 MCE's individual intervenor testimony does not address this issue.

3 **V. RECOVERY OF LICENSE RENEWAL COSTS**

4 MCE's individual intervenor testimony does not address this issue.

5 **VI. PROPOSED RATEMAKING AND COST ALLOCATION ISSUES**

6 MCE's individual intervenor testimony does not address this issue.

7 **VII. LAND USE, FACILITIES AND DECOMMISSIONING ISSUES**

8 MCE's individual intervenor testimony does not address this issue.

1 **VIII. EXHIBITS**

2 **A. Exhibit A: PG&E Data Response to PG&E Data Request No. MCE_001-Q04**

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	MCE_001-Q04		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_MCE_001-Q04		
Request Date:	August 19, 2016	Requester DR No.:	001
Date Sent:	September 2, 2016	Requesting Party:	Marin Clean Energy
PG&E Witness:	Janice Frazier-Hampton	Requester:	Jeremy Waen

SUBJECT: REGARDING CHAPTER 2 – DIABLO CANYON POWER PLANT (DCPP) NEEDS ANALYSIS

Regarding analysis and forecast of Energy Efficiency (EE), Distributed Generation (DG) and Community Choice Aggregation (CCA) projections on pages 2-9 through 2-12

QUESTION 4

On page 2-10 testimony states: “For CCA, the level of projected load reflects departure from PG&E’s utility bundled portfolio based on departure probabilities.” Please explain in detail what these “departure probabilities” are, why PG&E believes they are reasonable factors to use for this forecast, and how these probabilities are handled within the forecast calculation.

ANSWER 4

For forecast CCA load departures in 2017, CCA departures are determined consistent with that presented in PG&E’s annual Energy Resource Recovery Account (ERRA) Forecast Filing. Specifically, the 2017 forecast excludes CCA load from the bundled load forecast if a CCA had: (1) submitted a Binding Notice of Intent; (2) provided a load forecast to the CPUC and/or California Energy Commission for the purpose of taking on resource adequacy load requirements for the following year; or (3) started enrolling customers as of the date of the forecast.

For 2018 and beyond PG&E uses a stochastic approach to forecast load departure due to CCA. The following steps describe the approach and assumptions used:

- (1) **Identification of CCA participation:** PG&E identifies the level of public CCA activity observed in its service area;
- (2) **Determination of departure probability:** Based on observed CCA activity, PG&E assigns a target probability of departure for communities in the service area.
- (3) **Determination of load forecast:** Load pertaining to potential CCA departure jurisdiction is identified as an independent variable in the simulation model with no dependencies or correlation.
- (4) **Calculation of load departure (stochastically modeled):** For each year, the jurisdiction-specific departure probabilities and load forecasts are

stochastically modeled using a distribution comprised of 5,000 iterations. In its Reference Case forecast PG&E selects the mean of the distribution.

PG&E believes its modeling approach provides reasonable results and the Reference Case reflects the expected impact of CCA departures. In addition, PG&E's Prepared Testimony presents High Load and Low Load Scenarios to provide a range of potential outcomes that capture either more (Low Load) or less (High Load) CCA departures.

1

B. Exhibit B: PG&E Data Response to PG&E Data Request No. MCE_003-Q07

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	MCE_003-Q07		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_MCE_003-Q07		
Request Date:	December 13, 2016	Requester DR No.:	003
Date Sent:	January 11, 2017	Requesting Party:	Marin Clean Energy
PG&E Witness:	Janice Frazier-Hampton	Requester:	Jeremy Waen

SUBJECT: REGARDING CHAPTER 2 – DIABLO CANYON NEEDS ANALYSIS

QUESTION 7

Table 2-2 on page 2-10 indicates that PG&E forecasts its bundled sales in 2015 and 2030 accounts for 56% and 54 %, respectively, of its service territory.

- a. Please provide a revised Table 2-2 that differentiates among CCA departing load, DA departing load, and any other load that contributes to these percentages.
- b. Please provide any and all workpapers on which these percentages are based.

ANSWER 7

The projections in Table 2-2 are for 2017, 2025 and 2030.

- a. The ‘CCA/DA’ load forecast totals include a fixed amount of 9,842 GWh for DA and 360 GWh of ‘other sales’ for the years shown in the table.
- b. The ‘Bundled Sales % of Territory’ percentages are calculated by dividing the ‘Utility Bundled Sales’ by the ‘Service Territory Sales’.

1
2

C. Exhibit C: PG&E Data Response to PG&E Data Request No. TURN_001-Q05

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	TURN_001-Q05		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_TURN_001-Q05		
Request Date:	October 12, 2016	Requester DR No.:	001
Date Sent:	November 8, 2016	Requesting Party:	The Utility Reform Network
PG&E Witness:	Todd Strauss	Requester:	Matthew Freedman

QUESTION 5

Explain specifically how the Joint Proposal “turns toward the procurement of...flexible integrating resources”, as seemingly stated at page 1-14, lines 26-27 of PG&E’s Testimony.

ANSWER 5

In its Application, PG&E requests the CPUC approve the three tranches of procurement described in the Joint Proposal and detailed in PG&E’s Testimony. As stated on page 9 of the Application:

the three tranches of GHG-free resources are a first step toward replacing Diablo Canyon with a portfolio of GHG-free resources. Additional resources beyond those specified in the Joint Proposal may be needed on a system-wide basis to replace the output of Diablo Canyon. The Joint Parties envision that this issue will primarily be addressed through the Commission’s Integrated Resource Planning process...

The same set of ideas is described in section D of the Preamble of the Joint Proposal, page 1-8 of PG&E’s Testimony, and pages 3-2 to 3-3 of PG&E’s Testimony.

No procurement of flexible integrating resources is sought directly in the Application.

As stated on page 1-14 of PG&E’s Testimony, “The Joint Proposal turns toward the procurement of cost-effective GHG-free resources and flexible integrating resources that will be a crucial part of meeting California’s renewable and GHG emissions goals.” Section 2.5 of the Joint Proposal briefly describes some aspects of resource integration associated with Diablo Canyon retirement, identifies the CPUC’s Integrated Resource Planning process as the appropriate forum to review and resolve challenges associated with resource integration, and announces the commitment the Joint Parties have made toward procurement of flexible integrating resources:

The challenges associated with resource integration, and system and local reliability, must be reviewed and resolved by the CPUC through its IRP process, in collaboration with the

CAISO. The Parties will strongly support at the CPUC and before the CAISO the use of cost-effective GHG-free resource solutions, some of which may include additional large pumped storage and utility-owned storage projects.

D. Exhibit D: PG&E Data Response to PG&E Data Request No. MCE_003-Q01

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	MCE_003-Q01		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_MCE_003-Q01		
Request Date:	December 13, 2016	Requester DR No.:	003
Date Sent:	January 9, 2017	Requesting Party:	Marin Clean Energy
PG&E Witness:	Janice Frazier-Hampton	Requester:	Jeremy Waen

SUBJECT: REGARDING ATTACHMENT A – THE JOINT PROPOSAL

QUESTION 1

PG&E asserts “the retirement of Diablo Canyon may have impacts on system ramping and the need for additional energy storage.” (Joint Proposal Attachment A at page 8.) Please describe the potential impacts and how the retirement of Diablo Canyon may lead to those impacts.

ANSWER 1

PG&E and the Joint Parties propose and support the orderly replacement of Diablo Canyon with a GHG portfolio of energy efficiency, renewables and energy storage. On page 8, Section 2.5 of the Joint Proposal, this section discusses “Resource Integration and Storage.” The partial reference stated in the question above misses the important contrast of the opportunity and challenge presented by retiring Diablo Canyon. Specifically, the complete reference reads as follows: “On the one hand, removing a large baseload resource during periods of peak solar production will reduce the need for periodic curtailment of RPS resources and enhance RPS resource integration during these periods. On the other hand, the retirement of Diablo Canyon may have impacts on system ramping and the need for additional energy storage.” With increasing renewables on the system and the removal of a baseload source of energy, flexible resources such as energy storage provide additional flexibility to help balance load and resources to integrate renewables onto the system.

1 **E. Exhibit E: PG&E Data Response to PG&E Data Request No. MCE_002-Q07**

**PACIFIC GAS AND ELECTRIC COMPANY
Diablo Canyon Retirement Joint Proposal
Application 16-08-006
Data Response**

PG&E Data Request No.:	MCE_002-Q07		
PG&E File Name:	DiabloCanyonRetirementJointProposal_DR_MCE_002-Q07		
Request Date:	August 30, 2016	Requester DR No.:	002
Date Sent:	October 3, 2016	Requesting Party:	Marin Clean Energy
PG&E Witness:	Todd Strauss/Jan Berman	Requester:	Jeremy Waen

SUBJECT: CHAPTER 3 – REPLACEMENT OF DIABLO CANYON POWER PLANT:

Regarding the alleged benefit of Tranche #1 and Tranche #2 procurement, page 3-7 states that “[t]he procurement that is proposed under Tranche #1 and Tranche #2 benefit all customers in PG&E’s service territory, not just PG&E bundled customers.”

QUESTION 7

Further, please explain whether and how this statement accounts for activities that may be undertaken by CCAs within PG&E’s service territory that may already be reducing PG&E’s bundled load.

- a. If it is PG&E’s belief that CCA procurement does not provide similar benefits to that which may be provided due to Tranches #1 and #2, please explain in detail why PG&E believes this to be so (including any legal basis for this difference).

ANSWER 7

PG&E objects to this request on the grounds that requests for legal authorities and analysis are not reasonably calculated to lead to the discovery of admissible evidence. (CPUC Rules of Practice and Procedure, Rule 10.1).

Notwithstanding and subject to this objection, PG&E responds that on page 2-6 of PG&E’s testimony, PG&E acknowledges the effect CCAs may have on reducing the amount of energy and capacity needed to meet the electricity load of PG&E’s bundled electric customers. The topic of benefits provided by other load-serving entities (LSEs), including CCAs, from their existing activities and procurement is outside of the scope of this proceeding.

As described throughout Chapter 3 of PG&E’s testimony, there are several planning uncertainties between now and 2024 (when Diablo Canyon Unit 1 will retire). PG&E and the other Joint Parties believe that it would be short-sighted to wait for the various uncertainties to all be resolved before action begins to be taken for the orderly replacement of Diablo Canyon’s GHG-free energy.

As mentioned on page 3-10 of PG&E’s testimony, California’s electric system is in the midst of a significant shift as California is on its way toward achieving ambitious, leading

GHG emissions reduction goals. Tranche #1 and Tranche #2 are designed to support these goals when Diablo Canyon, a large GHG-free resource in California, retires.

1 **IX. APPENDICES**

2 **A. Appendix A: Statement of Qualifications of Kirby Dusel**

3 Q1 Please state your name and business address.

4 A1 My name is Kirby Dusel, and my business address is Pacific Energy Advisors, Inc., 1839
5 Iron Point Road, Suite 120, Folsom, CA.

6 Q2 Briefly describe your responsibilities at Pacific Energy Advisors, Inc.

7 A2 I am Vice President and Secretary of Pacific Energy Advisors, Inc. In this capacity, I
8 provide consulting services to public sector clients in the energy industry, including
9 multiple California-based community choice aggregation (“CCA”) programs. Amongst
10 other responsibilities, I am an advisor to Marin Clean Energy (“MCE”) and assist MCE in
11 the areas of resource planning, procurement, development of local energy programs and
12 regulatory compliance.

13 Q3 Please summarize your educational and professional background.

14 Q4 I received a Bachelor of Science degree in Managerial Economics from the University of
15 California, Davis in 1998. From 1998 through mid-2000, I worked in Navigant
16 Consulting’s Energy Practice where I held positions of increasing responsibility, providing
17 consulting services, primarily, to public sector clients. In mid-2000, I joined KPMG
18 Consulting as a Consultant within its Public Services practice where I provided strategic
19 consulting and business process improvement services to various public agencies
20 throughout California and Alaska. In June 2001, I rejoined Navigant Consulting, serving
21 as an Associate Director in its Energy Practice until 2010. In 2010, I formed Paradigm
22 Energy Consulting, a sole proprietorship focused on providing consulting services to
23 clients doing business within California’s electric utility sector. In 2013, I co-founded

1 Pacific Energy Advisors, Inc., which currently provides a variety of consulting services to
2 public sector clients, including multiple CCAs, within California's energy industry.

3
4 During my 18 years working in the electric utility industry, I have served as a key advisor
5 during California's energy crisis, providing counsel to the Department of Water Resources
6 on matters regarding power contractor performance and financial settlements for nearly 50
7 state-wide power purchase agreements. I have also served as a lead technical consultant to
8 California's first of five operational CCA programs: MCE, Sonoma Clean Power,
9 Lancaster Choice Energy, CleanPowerSF and Peninsula Clean Energy.

10
11 I continue to provide an extensive range of technical support to operating and aspiring CCA
12 programs throughout the state, focusing on the areas of resource planning and procurement,
13 program development and administration, and regulatory compliance.

14
15 Working within the areas of resource procurement and planning for municipal utilities,
16 resource management agencies, CCAs and Joint Powers Authorities ("JPAs") throughout
17 California, I have managed requirements definition, procurement document development,
18 proposal analysis, supplier selection and contract negotiation. I have also testified before
19 the California Public Utilities Commission ("CPUC") in PG&E's General Rate Case
20 ("Testimony of the Marin Energy Authority Concerning Phase 2 of Pacific Gas & Electric
21 Company's Test Year 2011 General Rate Case Filing, Which Seeks to Implement, Among
22 Other Things, a Conservation Incentive Adjustment that Would Impose Disproportionate
23 Impacts on Community Choice Aggregation Customers and the Marin Energy Authority"),

1 and regularly provide strategic advisory services for regulatory proceedings within
2 California's electric utility industry.

3 Q5 What is the purpose of your testimony?

4 A5 I am sponsoring the following testimony: "Intervenor Testimony of Marin Clean Energy:
5 The Growth of Community Choice Aggregation Programs Obviates the Need for PG&E
6 to Replace Diablo Canyon."

7 Q6 Does this conclude your statement of qualifications?

8 A6 Yes it does.

B. Appendix B: Resume of Kirby Dusel

Kirby Dusel, Vice President, Pacific Energy Advisors, Inc.

Kirby Dusel
Vice President

Pacific Energy Advisors, Inc.
1839 Iron Point Road, Suite 120
Folsom, CA 95630
Tel: 916.936.3302

kirby@pacificea.com

Professional History

- Principal, Paradigm Energy Consulting
- Associate Director, Navigant Consulting, Inc.
- Consultant, KPMG Consulting, LLC

Education

- B.S., Managerial Economics, University of California, Davis, 1998

Kirby Dusel is Vice President and co-founder of Pacific Energy Advisors, Inc., which provides strategic advice and technical support to organizations within California's energy market. Mr. Dusel has served many public agencies within California and throughout the U.S. Mr. Dusel's eighteen years of experience within the California electric utility industry have been primarily focused on the areas of resource planning and power procurement, contract negotiation and administration, Community Choice Aggregation (CCA) and Direct Access program implementation, feed-in tariff development and administration and regulatory compliance. Mr. Dusel has also testified before the California Public Utilities Commission in PG&E's General Rate Case. Currently, Mr. Dusel serves as a lead technical advisor to the following CCA programs: Marin Clean Energy, Lancaster Choice Energy, CleanPowerSF, Peninsula Clean Energy, Silicon Valley Clean Energy and Apple Valley Choice Energy, as well as several other communities considering CCA program formation. Mr. Dusel has previously served the State of California's Department of Water Resources as an energy contract analyst and database developer during California's Energy Crisis, providing guidance to CERS's executive management regarding power supplier performance; during his work with CERS, Mr. Dusel also carried out general contract management responsibilities associated with the administration of approximately 50 State-wide power purchase agreements valued at \$35 billion.

Highlighted Professional Experience

- » **Marin Clean Energy, Community Choice Aggregation Implementation & Operational Support** - Developed and administered competitive solicitations for power supply, renewable energy and data management services, as required to support service commencement and ongoing operation of the Marin Clean Energy program. Developed feed-in tariff and net energy metering programs for MCE customers. Administered MCE's resource planning and contracting efforts as well as related solicitations for new, California-based renewable energy projects. Provided analytical support during the evaluation of each MCE expansion. Currently providing ongoing operational support to MCE across a broad spectrum of functions, including resource planning and procurement, regulatory compliance and power portfolio management, as well as program development and administration.
- » **Lancaster Choice Energy, Community Choice Aggregation Implementation & Operational Support** - Developed and administered competitive solicitation for power supply, renewable energy and resource adequacy capacity, as required to support service commencement and ongoing operation of the LCE program. Assisted in negotiating requisite power purchase agreements with selected suppliers. Currently providing resource planning and power procurement support, regulatory compliance support and general advisory services to LCE program management.
- » **CleanPowerSF, Community Choice Aggregation Implementation & Operational Support** - Assisted in the evaluation of CleanPowerSF's prospective customer base, including the desired implementation approach to support customer service commencement in May 2016. Provided support in developing and administering a competitive solicitation for requisite power supply, including shaped energy,

renewable energy and resource adequacy capacity. Provided analytical support in determining CleanPowerSF's desired customer phase-in/growth plan. Provided assistance in developing CleanPowerSF's Super Green (100% renewable) and Net Energy Metering programs as well as other general advisory services related to CCA formation and ongoing operation.

- » **Sonoma Clean Power, Community Choice Aggregation Evaluation & Implementation** – Developed and administered competitive solicitations for power supply, renewable energy and data management services, as required to support service commencement and ongoing operation of the Sonoma Clean Power program. Assisted in negotiating related service/purchase agreements with selected suppliers. Provided early-stage operational support in the areas of resource planning, power portfolio management and regulatory compliance.
- » **Peninsula Clean Energy, Community Choice Aggregation Evaluation, Implementation & Operational Support** – Completed a technical study focused on determining the viability of a prospective CCA program that would serve customers located within the geographic boundaries of San Mateo County. Assisted local elected officials and staff in understanding the potential benefits and consequences of forming such a CCA program. Developed and administered competitive solicitations for shaped energy, renewable energy, hydroelectricity, resource adequacy and data management services, as required to support service commencement and ongoing operation of the PCE program. Assisted in negotiating related power purchase agreements with selected suppliers. Provided implementation support prior to customer service commencement, participating in coordinative activities between PG&E, Calpine Energy Services (PCE's data manager) and PCE staff. Currently providing resource planning and procurement support focused on PCE's upcoming customer enrollment process.
- » **Silicon Valley Clean Energy, Community Choice Aggregation Evaluation & Implementation** – Completed a technical study focused on determining the viability of a prospective CCA program that would serve customers located within certain portions of Santa Clara County. Assisted local elected officials and staff in understanding the potential benefits and consequences of forming such a CCA program. Developed and administered competitive solicitations for shaped energy, renewable energy, hydroelectricity, resource adequacy and data management services, as required to support service commencement and ongoing operation of the SVCE program. Assisted in negotiating related power purchase agreements with selected suppliers. Currently providing implementation support prior to customer service commencement as well as ongoing resource planning and procurement activities of the SVCE program.
- » **Apple Valley Choice Energy, Community Choice Aggregation Evaluation & Implementation** – Completed a technical study focused on determining the viability of a prospective CCA program that would serve customers located within the Town of Apple Valley. Assisted local elected officials and staff in understanding the potential benefits and consequences of forming such a CCA program. Developed and administered competitive solicitations for shaped energy, renewable energy, resource adequacy and data management services, as required to support service commencement and operations of the AVCE program. Assisted in negotiating related power purchase agreements with selected suppliers. Currently providing implementation support prior to customer service commencement, including coordination with Southern California Edison and Calpine Energy Services (AVCE's data manager).
- » **Monterey Bay Community Power, Community Choice Aggregation Evaluation & Implementation** – Completed a technical study focused on determining the viability of a prospective CCA program that would serve customers located within Monterey, Santa Cruz and San Benito counties. Assisted local elected officials and staff in understanding the potential benefits and consequences of forming such a

CCA program, including the evaluation of multiple indicative supply portfolios that could be implemented to achieve locally established economic and clean-energy objectives. Currently providing early-stage implementation support during formation of the MBCP organization.

- » **Placer County, California, Community Choice Aggregation Evaluation** – Completed an electric load and rate study focused on determining the viability of a prospective CCA program that would serve customers located within Placer County. Currently assisting local elected officials, staff and consultants in understanding the potential benefits and consequences of forming such a CCA program.
- » **City of Moreno Valley (California) Electric Utility Division, Resource Planning & Procurement** – Authored the City’s 10-Year Integrated Resource Plan (2013). Served as primary advisor regarding matters related to resource planning and procurement; developed and administered competitive solicitations for power supply, renewable energy and resource adequacy capacity to support ongoing operation of the City’s electric utility division.
- » **School Project for Utility Rate Reduction (SPURR), Resource Planning & Procurement** – In response to Senate Bill 695, which authorized a limited reopening of Direct Access electric service for nonresidential customers within the distribution territories of California’s three major IOUs, helped form the SPURR Direct Access Program for numerous school districts and educational institutions throughout the California: administered a Request for Bid process to select energy service providers for Participants in SPURR’s Program, participated in supplier negotiations and contracting discussions. Currently providing the following services to support SPURR’s DA Program: ongoing transactional oversight, procurement planning and review, data reporting and supplier interface.
- » **California Department of Water Resources, California Energy Resources Scheduling Statewide Energy Procurement Program** – Statewide Power Purchases Contract Administration and Analysis: Performed general contract management responsibilities associated with the administration of approximately 50 Statewide power purchase agreements valued at over \$35 billion; developed comprehensive, hourly contract dispatch model based on daily net short forecasts provided by each IOU to assist DWR in determining short-term, least-cost dispatch/market purchase levels to meet remaining IOU load; conducted monthly variance analyses of actual and forecasted energy dispatches and determined root causes of noted deviations to hone ongoing forecasting efforts; conducted performance assessments of several power purchase agreements, providing CERS executive management with recommendations regarding opportunities to manage each contract more efficiently; provided analytical support during the Department’s efforts to renegotiate existing power purchase agreements, including analyses of IOU load/resource balances and resultant contract energy needs.
- » **Office of Fiscal Management - Database Development Projects:** Directed development of the CERS Invoice & Payment Tracking Database, which managed all settlement-specific data related to each Statewide power purchase agreement – in cooperation with CERS executive management, identified necessary data, procedural and structural requirements during database planning/development, ensured ongoing communication with CERS management and directed the database development team; managed development of the CERS Management, Document, and Activity Tracking Database (MDAT), which streamlined the organization, oversight, and accessibility of documentation, activity management, and issue resolution associated with each Statewide power purchase agreement – in cooperation with CERS executive management, identified necessary data, procedural and structural requirements during database planning, ensured ongoing communication with CERS management and provided ongoing, related direction to the database development team.
- » **Bond Financing/Revenue Requirement Determination:** Served as primary author and co-editor for each of the Department’s annual Retail Revenue Requirements (2003 through 2007) supporting the

repayment of over \$11 billion in revenue bonds and debt service as well as approximately \$5 billion in annual operating costs incurred by the Department, including related quantitative analysis. Retail Revenue Requirement determinations serve as the basis for investor-owned utility customer rates established by the CPUC, which repay operating costs of the Department as well as debt service on its \$11 billion bond portfolio.

- » **Calaveras Public Power Agency (CPPA) and Tuolumne Public Power Agency (TPPA)** – Completed energy options analysis to assist the Agencies in identifying potential uses for surplus entitlement of federal hydropower. Options analysis included the evaluation of several organizational and partnering options, including CCA and Direct Access feasibility, ESP registration, jurisdictional expansion and new customer identification.
- » **Small Publicly Owned Utility (POU) Group** – Assisted a consortium of POU's located within southern California in identifying potential renewable energy procurement opportunities. Administered multiple Request for Proposals on behalf of the Small POU Group, evaluated responses and communicated with prospective suppliers regarding preferred contracting opportunities.
- » **Local Government Commission (LGC)** – Served as contributing author/editor in developing implementation plan template for use by CCAs in complying with regulatory requirements of the CPUC. Also served as contributing author/editor in developing a comprehensive Guidebook for California communities interested in implementing a Community Choice Aggregation (CCA) electric service program. The CCA Guidebook provides an overview of: 1) the potential motivations for CCA formation; 2) the initial planning and analysis required to support decision making with respect to CCA formation; and 3) the prescribed process for CCA registration, formation and implementation. Contributed to the organization and development of CCA workshops designed to educate interested communities and promote necessary analyses/studies that compliment decision making regarding CCA formation and implementation.

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Develop an)	
Electricity Integrated Resource Planning Framework)	
and to Coordinate and Refine Long-Term Procurement)	Rulemaking 16-02-007
Planning Requirements)	(Filed February 11, 2016)
_____)	

**REPLY COMMENTS OF THE CITY OF LANCASTER, SILICON VALLEY CLEAN
ENERGY AUTHORITY, MARIN CLEAN ENERGY AND SONOMA CLEAN POWER
AUTHORITY**

Scott Blaising
David Peffer
Dan Griffiths
Ty Tosdal, *of Counsel*
BRAUN BLAISING McLAUGHLIN & SMITH, P.C.
915 L Street, Suite 1480
Sacramento, CA 95814
Telephone: (916) 712-3961
E-mail: blaising@braunlegal.com

Counsel for the City of Lancaster
And Silicon Valley Clean Energy Authority

Shalini Swaroop
Regulatory Counsel
MARIN CLEAN ENERGY
1125 Tamalpais Drive
San Rafael, CA 94901
Telephone: (415) 464-6040
E-Mail: sswaroop@mceCleanEnergy.org

Counsel for Marin Clean Energy

Steven S. Shupe
General Counsel
SONOMA CLEAN POWER AUTHORITY
50 Santa Rosa Avenue, Fifth Floor
Santa Rosa, California 95402
Telephone: (707) 890-8485
E-Mail: sshupe@sonomacleanpower.org

Counsel for Sonoma Clean Power Authority

January 20, 2017

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Develop an)	
Electricity Integrated Resource Planning Framework)	Rulemaking 16-02-007
and to Coordinate and Refine Long-Term Procurement)	(Filed February 11, 2016)
Planning Requirements)	
)	

**REPLY COMMENTS OF THE CITY OF LANCASTER, SILICON VALLEY CLEAN
ENERGY AUTHORITY, MARIN CLEAN ENERGY AND SONOMA CLEAN POWER
AUTHORITY**

Pursuant to instructions provided by the Energy Division of the Public Utilities Commission of the State of California (“Commission”), the City of Lancaster (“Lancaster”), Marin Clean Energy (“MCE”), Silicon Valley Clean Energy Authority (“SVCE”) and Sonoma Clean Power Authority (“SCPA”) (collectively, “CCA Parties”) hereby submit the following reply to various parties’ informal comments on the Commission’s December 16, 2016 workshop on developing the Commission’s reference plan.

**I. Reply to PG&E and SCE comments regarding the Commission’s jurisdiction over
Community Choice Aggregator IRPs**

Pacific Gas & Electric (“PG&E”), Southern California Edison’s (“SCE”), and San Diego Gas and Electric (“SDG&E”) (collectively, “IOUs”) have prepared a document titled “Whitepaper on Commission Jurisdiction Over Community Choice Aggregators in the Integrated Resource Plan Proceeding” (“Whitepaper”). Both PG&E and SCE reference the Whitepaper in

their respective comments,¹ and PG&E's comments include the Whitepaper as an attachment.²

In the Whitepaper, the IOUs attempt to construe SB 350 and the relevant statutory framework as giving the Commission broad authority and jurisdiction over Community Choice Aggregator IRPs.

The CCA Parties are aware of the importance of the technical issues under consideration in the scenario development series of webinars and comments, and do not wish to distract from these important matters by rebutting the IOU Whitepaper in these reply comments. At the same time, the CCA Parties are concerned that the IOU Whitepaper presents a clearly incorrect interpretation of SB 350 and the relevant statutory framework, and believe that it essential that the Energy Division's work not be misdirected by an incorrect interpretation of the Commission's jurisdiction. Rather than addressing the IOU Whitepaper's significant flaws in these comments, the CCA Parties will be preparing and distributing their own Whitepaper on the Commission's jurisdiction over Community Choice Aggregator IRPs, which the CCA Parties hope will help to inform the Energy Division in preparing its staff proposal.

The CCA Parties do not take a position on SCE's request for briefing on the jurisdiction question, other than to note that, if such briefing is granted, the question will not be resolved until well after the final staff proposal is submitted. That is why (as the CCA Parties stated in their opening post-workshop comments) it is essential that the Energy Division plan for a CCA independence alternative in which CCAs are not subject to Commission's full IRP jurisdiction. The CCA Parties are eager to work with the Energy Division in developing this alternative.

¹ See Pacific Gas & Electric Informal Comments, January 13, 2017, pp. 7-8; Southern California Edison Informal Comments, January 13, 2017, pp. 1-2.

² See Pacific Gas & Electric Informal Comments, January 13, 2017, Attachment A

II. Reply to Comments on “Forced In” Resources

The CCA Parties share the skepticism expressed by several parties regarding the proposal to “force in” resources through the candidate plans. The CCA Parties agree with the California Wind Energy Association (“CalWEA”)³ that, generally, the specific resources included in the candidate plans should be evaluated as sensitivities.⁴ As the Sierra Club and California Environmental Justice Alliance persuasively argue,⁵ artificially inserting the candidate plans’ wind and storage resources into the RESOLVE model will not allow RESOLVE to identify the optimal combination of resources.

CEERT defends the proposal to force in resources on the grounds that such resources have potentially high system-wide benefits that otherwise would have been excluded under least-cost best-fit resource planning due to high capital costs or long lead times.⁶ The CCA Parties disagree with this position for two reasons. First, as a general matter, the IRP process is meant to provide a holistic review of the costs and benefits of resources from a variety of perspectives, including economic efficiency, GHG reduction, system reliability, and achieving renewable energy goals. A properly functioning IRP process would not need to force in resources, as the process itself would select the optimal combination of resources to meet these goals. In other words, if the IRP process works as it should, resources that have high system-wide benefits should still be selected even if they would have been excluded under least-cost, best-fit due to high capital costs or long lead times.

³ See California Wind Energy Association Informal Comments, January 13, 2017, p. 3.

⁴ The CCA Parties do not take a position on CalWEA’s proposal to evaluate out of state wind resources as a resource supply curve rather than a sensitivity.

⁵ See Sierra Club and CEJA Informal Comments, January 13, 2017, pp. 2-3.

⁶ See CEERT Informal Comments, January 13, 2017, pp. 1-2.

Second, the CCA Parties concerned that the Commission may expect CCAs to procure or pay non-bypassable charges for specific “forced in” resources that would otherwise be excluded from the IRP as sub-optimal. This would significantly exceed the Commission’s jurisdiction, as neither SB 350 nor any other statute expressly grants the Commission the authority to require that Community Choice Aggregators plan for or procure “forced in” resources. In addition, requiring that Community Choice Aggregators participate in the procurement of “forced in” energy storage, or imposing a non-bypassable charge on Community Choice Aggregators for “forced in” energy storage projects, would violate Public Utilities Code Section 454.51(d), which guarantees Community Choice Aggregators the right to *self-provide* any renewables integration resources need identified in the IRP process. Instead of developing “forced in” resources, the Commission should work to clearly define the renewable integration need and work with Community Choice Aggregators to identify resources that fit the need.

The CCA Parties agree with the California Large Energy Consumers Association (“CLECA”) that not enough information has been provided regarding the selection of the specific resources included in the candidate plans.⁷ The CCA Parties support CLECA’s request for information regarding: 1) what other options were considered for candidate plans; and 2) what criteria were used to evaluate the plans. In addition, in light of the comments provided by Eagle Crest Energy, Pathfinder CAES, and Southwest Power Group on the topic, it would be very useful to have additional information on how the Energy Division selected the quantities of forced in resources in the candidate plans, and how these quantities relate to specific planned future projects.

⁷ See California Large Energy Consumers Association Informal Comments, January 13, 2017, pp. 1-2.

III. Reply to Comments on Sensitivities

The CCA Parties support the respective comments offered by the Natural Resources Defense Council (“NRDC”) and CLECA on the sensitivities to be included in the Energy Division’s modeling. NRDC is correct in stating that energy efficiency (“EE”) is an important factor that should be fully accounted for in the Commission’s modeling, and the CCA Parties support the addition of NRDC’s proposed “Low EE” and “High EE” sensitivities.⁸ In addition, the CCA Parties support CLECA’s request that the retirement of the Diablo Canyon plant, and the resources used to replace Diablo Canyon, be accounted for in the sensitivities.⁹

The CCA Parties agree with the Center for Energy Efficiency and Renewable Technologies (“CEERT”) that geothermal resources should be evaluated in the Commission’s modeling.¹⁰ However rather than treating geothermal as a “forced in” resource, as CEERT suggests, all resources identified for “forced in” treatment, including geothermal, should be treated as sensitivities.

IV. Reply to Comments on Scenarios and Futures

The CCA Parties agree with TURN that it is not necessary to model all four candidate plans.¹¹ For the reasons discussed above, the resources currently “forced in” in the candidate plans should be instead treated as sensitivities. In addition, treating these resources as

⁸ See Natural Resources Defense Council Informal Comments, January 13, 2017, p. 4.

⁹ See California Large Energy Consumers Association Informal Comments, January 13, 2017, pp. 2-3.

¹⁰ See Center for Energy Efficiency and Renewable Technology Informal Comments, January 13, 2017, pp. 2-3.

¹¹ See The Utility Reform Network Informal Comments, January 13, 2017, p. 1.

sensitivities would have the secondary benefit of significantly simplifying the modeling process for the Commission, and would give the Commission time to model a greater range of futures.

TURN, SCE, and SDG&E are incorrect in arguing that that the plan to model all 56 scenarios, as well as the specific futures identified by Energy Division, is unrealistic or would be unduly burdensome.¹² The CCA Parties understand that, once all relevant data are input, the actual work/time burden associated with each model run is relatively minor. This being the case, the Energy Division should err on the side of thoroughness in its modeling.

The CCA Parties strongly disagree with Calpine’s position that the Commission hasn’t adequately considered a “plausible” future where California could require significant additional capacity, and that the Commission needs to consider a “high capacity need” future. Calpine is incorrect for two reasons. First, Calpine’s position is based on the incorrect assertion that the base case is “unlikely” because it assumes an unreasonably high level of EE. This is simply not the case – if anything, as NRDC argues in its comments, the base plan’s mid-EE numbers are too low and should be increased.¹³ Second, Calpine’s position is contradicted by the lessons of the Commission’s recent procurement planning history. Past planning cycles have consistently resulted in significant overprocurement.¹⁴ This overprocurement has been driven by several factors, including overly aggressive load estimates and failures to adequately account for the growth of energy efficiency and distributed generation. In light of this clear pattern of overprocurement, the CCA parties do not believe that a “high capacity need” future is plausible enough to warrant inclusion in the Energy Division’s modeling.

¹² See The Utility Reform Network Informal Comments, January 13, 2017, pp. 2-3.

¹³ See Natural Resources Defense Council Informal Comments, January 13, 2017, pp. 3-4.

¹⁴ CPUC Energy Division Scenario Tool, available at: <http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6636>.

V. Conclusion

The CCA Parties thank the Energy Division for its consideration of these reply comments.

Dated: January 20, 2017

Respectfully submitted,

Scott Blaising
David Pepper
Dan Griffiths
Ty Tosdal, *of Counsel*
BRAUN BLAISING McLAUGHLIN & SMITH, P.C.
915 L Street, Suite 1480
Sacramento, CA 95814
Telephone: (916) 712-3961
E-mail: blaising@braunlegal.com

Counsel for the City of Lancaster
And Silicon Valley Clean Energy Authority

Shalini Swaroop
Regulatory Counsel
MARIN CLEAN ENERGY
1125 Tamalpais Drive
San Rafael, CA 94901
Telephone: (415) 464-6040
E-Mail: sswaroop@mceCleanEnergy.org

Counsel for Marin Clean Energy

Steven S. Shupe
General Counsel
SONOMA CLEAN POWER AUTHORITY
50 Santa Rosa Avenue, Fifth Floor
Santa Rosa, California 95402
Telephone: (707) 890-8485
E-Mail: sshupe@sonomacleanpower.org

Counsel for Sonoma Clean Power Authority