



**Marin Clean Energy
Technical Committee Meeting
Monday, October 13, 2014
9:00 A.M.**

Dawn Weisz
Executive Officer

Damon Connolly
Chair
City of San Rafael

Kathrin Sears
Vice Chair
County of Marin

Bob McCaskill
City of Belvedere

Sloan C. Bailey
Town of Corte Madera

Larry Bragman
Town of Fairfax

Kevin Haroff
City of Larkspur

Garry Lion
City of Mill Valley

Brad Wagenknecht
County of Napa

Denise Athas
City of Novato

Tom Butt
City of Richmond

Carla Small
Town of Ross

Ford Greene
Town of San Anselmo

Ray Withy
City of Sausalito

Emmett O'Donnell
Town of Tiburon

1 (888) 632-3674
mceCleanEnergy.org

781 Lincoln Ave., #320
San Rafael, CA 94901

**San Rafael Corporate Center, Boro Room
750 Lindero Street, San Rafael, CA 94901**

Agenda Page 1 of 2

- 1. Board Announcements (Discussion)**
- 2. Public Open Time (Discussion)**
- 3. Report from Executive Officer (Discussion)**
- 4. Approval of 7.14.14 Meeting Minutes (Discussion/Action)**
- 5. Consideration of New Meeting Time (Discussion/Action)**
- 6. North Bay Pre-Apprenticeship Program (Discussion/Action)**
- 7. Site Visit Photo Tour (Discussion)**
- 8. MCE Integrated Resource Plan (Discussion/Action)**
- 9. Local Brownfield Solar Project Request for Qualifications (Discussion)**
- 10. Membership Study for City of El Cerrito (Discussion)**



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Agenda Page 2 of 2

11. Energy Efficiency Program Design for 2016 (Discussion)

12. Members & Staff Matters (Discussion)

13. Adjourn



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**MARIN CLEAN ENERGY
TECHNICAL COMMITTEE MEETING
MONDAY July 14, 2014
9:00 A.M.
SAN RAFAEL CORPORATE CENTER, BORO ROOM
750 LINDARO STREET, SAN RAFAEL, CA 94901**

Roll Call

Present: Kate Sears, County of Marin, Chair
Carla Small, Town of Ross
Emmett O'Donnell, Town of Tiburon
Ford Greene, Town of San Anselmo
Kevin Haroff, Town of Larkspur

Absent: Ray Withy, City of Sausalito

Staff: Dawn Weisz, Executive Officer
Greg Brehm, Director of Power Resources
Jeremy Waen, Regulatory Analyst
Emily Goodwin, Director of Internal Operations
Kirby Dusel, Technical Consultant

Action taken:

Agenda Item #4 – Approval of Minutes from 6.09.14 Meeting (Discussion/Action)

M/s Haroff/Greene (passed 5-0) approval of minutes from 6.09.14 meeting. Director Withy was absent.

Kate Sears, Chair

ATTEST:

Dawn Weisz, Executive Officer

North Bay Pre-Apprenticeship Program

Overview

The Marin County Building and Construction Trades Council (MCBCTC) is launching a multi-trade pre-apprenticeship program that develops the capacity of all trades in the North Bay. It is an on-ramp program designed to get the long-term unemployed, veterans, and underserved populations primed for *careers* in the trades.

Program Partners

The following are potential program partners and a brief description of their roles:

- MCBCTC – Program Manager
- Workforce Investment Board (WIB) – Funding, Outreach
- Marin Clean Energy (MCE) – Funding, Outreach, Job Creation, and Metrics Tracking
- LiUNA Local 261 – Funding and Training
- IBEW 2145 – Funding and Training
- Marin City Community Development Corporation (MCCDC) – Participant Recruitment, Soft Skills Training, and Metrics Tracking
- Canal Alliance (or other Canal based organization) – Participant Recruitment
- TAM Adult School – Venue/Training Space

Pilot Program Description

The Pilot would be designed as follows:

- 6-8 week program to launch Spring 2015 (1 Saturday or 2 nights a week)
- Class size of 10-15 trainees (primarily from Canal and Marin City communities)
- Goal is to place all graduates, 50% placement is more the norm
- Instructor (will be primary expense)

Pilot Program Training Components

The curriculum would along the lines of the following:

- OSHA – 10 Hour
- CPR and First Aid
- General Trades Requirements
- 2-week Training focused on Energy Efficiency/Renewables (taught by Laborers/IBEW and based on interest participant skillsets)

Proposition 39 Pre-Apprenticeship Development Application for Marin, Sonoma, Solano, Napa and Lake Counties on behalf of the Marin County Building and Construction Trades Council

Element: Development of regional short-term creation of a program/system infrastructure for implementation

The Marin County Building and Construction Trades Council (MCBCTC) will act as the Lead Agent for this program. The MCBCTC seeks funding to support the development of an energy efficiency-focused earn-and-learn job training and placement program targeting returning veterans and at-risk youth, ages 18-25, and long-term unemployed adults in the five county region known as the North Bay Employment Connection (NBEC). NBEC has a three-year track record of success in the development, training, and coordination with the trades in the area of green, energy-efficiency jobs training.¹

Statement of Need

This regional development program is intended to develop the system infrastructure for a program that can be replicated with modifications as needed within the five counties and beyond. The scope of the project is to build the framework necessary for successful training implementation of clean and green, energy efficiency construction with a particular emphasis on the building trades. In Marin County alone, upcoming projects in 2015-2017 include the construction of the County's Marin General Hospital and parking garage; infrastructure construction related to SMART (Sonoma Marin Area Rapid Transit); City of San Rafael's effort to install up to 5.2 MW of solar panels on public facilities in San Rafael and 13 other public agencies in Marin, Sonoma and Napa Counties; Bio Marin upgrades and developments in downtown San Rafael, re-construction of the Marin City Community Center and other construction projects

EDD has projected 16.4% growth in Green Construction/Renewable Energy by 2020. EDD also lists Construction Materials and Services as one of the top 10 industry clusters in the San Francisco Bay Area region with 57,587 jobs (new and replacement openings) projected by 2020.

Regional Coordination

Yet, the North Bay currently has a lack of pre-apprenticeship programs. As projects develop and the workforce continues to age, the need for pre-apprenticeship training that is recognized as a credible entry point into apprenticeship programs is essential. Because of Marin's history with a long-standing Construction and Green Jobs committee of the WIB, strong partnerships

¹ Project Green, funded jointly from EDD/WIA 25% discretionary funds and California Energy Commission (2009-2011); Project GREEN II, funded through EDD/WIA 25% discretionary fund (2011-2013)

already exist between labor (Sheet Metal Workers Local 104, Marin Building Trades, IBEW 1245, IBEW 551 and Local District 16 Painters and Glazers, Laborer Union local 261), non-profit community based organizations, the North Bay Conservation Corps, Strategic Energy Innovations, Marin Clean Energy, Marin Builders Association, Sonoma Building Trades Council and the County Office of Education.

The Northern California Career Pathways Alliance Partnership was created to implement the recently awarded regional Career Pathways grant (serving Marin, Sonoma, Solano, Napa, Lake, and Mendocino counties). Those partners, with the exception of Mendocino, are also stakeholders in this pre-apprenticeship application. They include the Office of Education in all five counties, the Community Colleges, and the Workforce Investment Boards.

Many students, youth, veterans and others do not receive adequate information on and access to the full range of services needed to succeed in gaining the skills critical to obtaining a living wage position in the building trades. To address this need, in early 2013, a Statement of Intent was developed between the North Bay Apprenticeship Coordinators Association (NBACA) and the North Bay Employment Connection in an attempt to correct the lack of coordination among the WIBs, educational institutions and apprenticeship programs.

Project Plan

The primary target population to be served in the design phase of the project includes at-risk youth, returning veterans, and the long-term unemployed. The development phase will put in place opportunities for participants to be trained in green job skills, creating a structured pathway to apprenticeship in the construction field and to build an energy efficiency workforce in the region by drawing from the traditional apprenticeship model of preparing workers using a work-based learning and classroom-based training in alignment with industry-recognized standards and credentials.

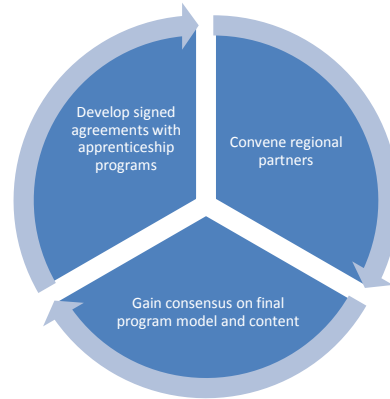
The project will incorporate the Multi-Craft Core Curriculum (MC3) pre-apprenticeship design by the National Building Trades Department of the AFL-CIO and is supported by the Building and Construction Trades Council of Sonoma and Marin Counties.

For this project to be successful, North Bay trades may need to submit revised apprentice standards to the Division of Apprenticeship Standards. We are requesting the program period to begin December, 2014 and complete by June 30, 2015. During the project, we will:

1. Convene regional partners mentioned above
2. Gain consensus on final program model, content and student placement goals.

3. Develop signed agreement with apprenticeship programs as to student placement numbers and performance outcomes expected.

Project Goals (illustration)



As development activities occur and agreements are negotiated, minor modifications may be made in order to meet the needs of the targeted populations, the building trades, regional employers and apprenticeship coordinators.

The project will rely on the guidance of the North Bay Employment Connection (the WIB Directors in the North Bay) and the North Bay Apprenticeship Coordinators Association (NBACA) and the on-going work of the Marin County WIB's Construction and Green Jobs Committee.

Project Outcomes

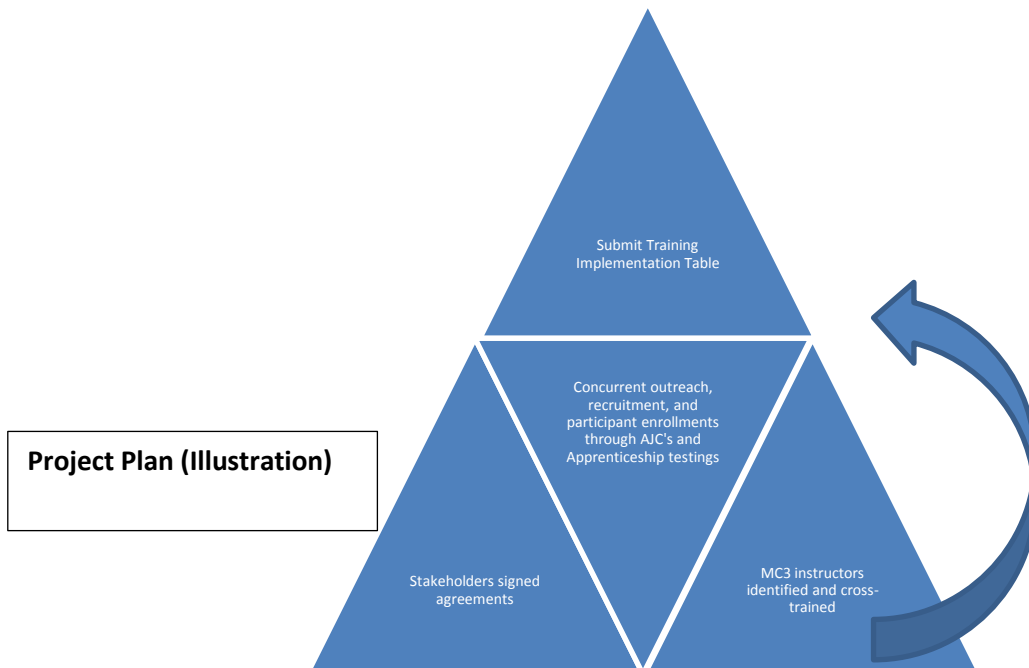
1. Build a strong regional partnership across the 5-county region, including the building trades, WIBs, Community Colleges, and the North Bay Apprenticeship Coordinators Association. The key levers are to develop effective proposals to provide information to be used in the recruitment and marketing of the apprenticeship programs to the target populations, develop and articulate clear pathways into apprenticeship programs through signed agreements with building trades' partners, and build consensus for a model pre-apprenticeship program in the North Bay where none currently exists.

2. A key strategic partner in this regional collaboration will be Marin's long standing working relationship with Sheet Metal Workers Local 104 and leverage with the San Mateo County Building and Construction Trades Council. Much of the North Bay's program will be modeled after the Trades Introduction Program in San Mateo County. This past year, the San Mateo and Santa Clara Building Trades Councils created the Construction Careers Initiative (CCI). The

Trades Introduction Program (TIP) is the San Mateo County pre-apprenticeship equivalent. Since Frank Cuneo has served on the Marin County WIB Construction and Green Jobs committee for the last several years, he has been instrumental in creating the linkages and sharing the resources from his work with TIP.

3. Recognition by local signatory apprenticeships of the completion of a TIP (or similar training model) is key to the success of the North Bay application. This is the “meat” of our activities in the convening of the stakeholders by providing information on how to apply and earn application credits, admission to an interview, or even direct entry (when possible). The convener will be the project lead, Bill Scott, CEO of the Marin County Building and Construction Trades Council of (MCBCTC)

4. Draft a Proposition 39 Training and Implementation proposal (if funding is available). Initially, the North Bay Pre-apprenticeship Program will require additional funding until the program can gain employer momentum to become self-sustaining.



Project Expertise

NBEC has an established track record of successful regional partnerships designed to identify and eliminate skill gaps in a variety of sectors, including healthcare, green jobs, energy efficiency, veteran specific job training in the healthcare sector, and workforce innovations. The regional WIBs have worked together over 15 years and received over \$15M in project grant awards during that time. The Marin County Building and Construction Trades Council has been an important partner with NBEC and a vital link to the trades, not only in Marin County but throughout the NBEC region.

Innovation & System Change

As detailed in the project plans and outcomes, the project will benefit from the existing partnerships with the San Mateo County Building Trades Council, the work of the Sheet Metal Workers Local 104, the Sonoma County Building Trades Council and the project lead in the Building Construction Trades Council of Marin, Bill Scott. All of the trade representatives from the Marin County Workforce Investment Board, as well as our community partners have actively participated in the Marin County WIB's 6 year old Construction and Green Jobs committee.

The project's intent is to develop a common framework and training curriculum that consists of elements to address emerging workforce trends in the energy-efficiency, building and construction, transportation, and other industries impacted by state policies aimed at reducing greenhouse gas emissions. The curriculum development activity will provide a pathway for participants to be prepared to competitively enter into jobs in these sectors with construction trades. The career path will contain adult education and remediation to obtain math and spatial relations competencies required in many of the building trades. The multi-craft pre-apprenticeship model to be created in the North Bay will be the first of its kind which is not only innovative but a systematic evolution of a model that has been discussed but hasn't created concrete outcomes.

Budget and Work Plan

The total project budget is \$60,000 of which \$43,500 is requested through the Prop 39 Development grant and \$16,500 will be leveraged funding of in-kind donations of staff time from partners. The six month project budget is detailed below:

MCBCTC Lead staff (24 hrs per mo @ \$50 pr. Hr.)	\$ 7,000
Building Trades contract support staff (25 hrs. per week) @ \$33 pr. hr.	\$ 20,000
Staff Travel (throughout the 5 county regions)	\$ 6,000
Office supplies/phone charges	\$ 3,000
Instructional materials/curriculum development	
Compilation of agreement documentation	\$ 5,000
Train the Trainer in MC3 curriculum	\$ 2,500
(\$575 for tuition, travel, expenses)	
Total Request	\$ 43,500



14 July 2014

Dawn Weisz
Executive Officer

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1 (888) 632-3674
mceCleanEnergy.org

Bill Scott
Marin County Building Trades Council
4174 Redwood Hwy
San Rafael, CA 94903

Dear Mr. Scott:

As part of MCE's commitment to procuring local renewable energy, MCE is eager to facilitate and encourage the use of union members from multiple trades, as well as the training and employment of residents within MCE's service territory.

The reduction of construction trade classes at the high school level has affected the ability of students to pursue skilled craft occupations and has resulted in a persistent underemployment problem. As MCE anticipates the construction of no less than six local solar projects over the next year that will collectively produce over six megawatts of electricity, this lack of skilled craftsmen is of serious concern.

A critical component of alleviating the shortage of skilled craftsmen and underemployment is the provision of quality training in construction craft occupations, which will lead to long-term, fairly compensated employment opportunities for local graduates. The best and most efficient vehicle for delivering quality training in construction industry craft occupations is through apprenticeship programs with a track record of graduating students to journeyman status.

For these reasons, MCE fully supports the development program being proposed jointly by the MCBTC and the Marin WIB and looks forward to working with other stakeholders to ensure the program's success.

Sincerely,

Dawn Weisz
Executive Officer
Marin Clean Energy

Proposed Budget-North Bay Pre-Apprenticeship Pilot Program

Line Item	Expense	Proposed Funds From
Instructor	\$ 4,400.00	MCE
Administration (outreach, coordination, placement)	\$ 2,000.00	MBCTC/MCE
Tools, Transportation (WIB)	\$ 2,000.00	WIB
OSHA 10 Safety Training	\$ 1,000.00	Trades
Forklift Training	\$ 600.00	Trades
Space Rental (tbd)	\$ 2,000.00	?? (COM/TAM Adult)
Total:	\$ 12,000.00	

Key:

MCE = Marin Clean Energy

MBCTC = Marin Building and Construction Trades Council

WIB = Workforce Investment Board (Construction Committee)

Trades = IBEW/Laborers

COM = College of Marin

TAM Adult = TAM Adult School



Renewable Energy Procurement: September 2014 Site Visits

Greg Brehm

Director of Power Resources | Marin Clean Energy

October 13, 2014



MCE Renewable Energy - New Projects

Sites Visited the Week of Sept 22, 2014

Under Contract and under construction :

- ✓ Recurrent Energy Kansas, 20 MW Solar – Jan, 2015
- ✓ EDP Rising Tree Wind, 99 MW Wind – July 2015
- ✓ EDF – Cottonwood, 24 MW Solar – March 29, 2015

Under Contract and in development

- ✓ Recurrent Mustang, 30 MW Solar, January 2018

- 20 MW Solar Photovoltaic
- Annual energy production: 49,000 MWhs
- Term: Jan 1, 2015 - Dec 31, 2017
- Kings County, 190 miles southeast of San Rafael



- More than 525 California jobs created and supported by MCE in a single solar contract
- 900,000 Union work-hours, in 80 MW total development
- Contractors include: First Solar, Wilson Construction - Electrical, Klondyke Construction- Labor, Trimark - Metering, RHL Industries - Telecom, Securitas - site security



Recurrent Energy Kansas



Will serve 8,000 average MCE residential customers



EDP Renewables – Rising Tree Wind Farm

- 100 MW Wind
- Term: July 2015 - Dec 2018
- Annual energy production:
 - 2015: 144,000 MWhs
 - 2016 - 2018: 222,000 MWh
- Kern County, 300 miles southeast of San Rafael
- Will serve 24,000 - 37,000 average MCE residential customers
- First tower base section set Sept. 23, 2014



EDP Renewables – Rising Tree Wind Farm



Generator - Nacelle



Existing project to the south



EDP Renewables – Rising Tree Wind Farm

Vestas 3.3 MW:

Water Cooled Turbine
84-90 Meter Tower
112 Meter Diameter

Contractors:

Blattner Energy
Rosendin Electric
Mountain Wind



Delivery of 112 meter turbine blade

EDP Renewables – Rising Tree Wind Farm



California Condor Monitoring Station



Bakersfield Cactus Garden

EDF Cottonwood

- 23 MW Solar Photovoltaic (PV)
- 250,000 union work hours expected
- 350 peak employment, 20% women
- Term: Mar 29, 2015 - Mar 28, 2040 (25 years)
- Annual energy production: 64,000 MWhs
- Kings County & Kern County, 200 miles southeast of San Rafael
- Will serve 10,600 average MCE residential customers
- Now installing 30,000 PV modules per day



EDF Cottonwood



Buck Institute, 1 MW Delayed



City of Corcoran, 9 of 11 MW started

12 acres per MW will be used for
thin film tracking technology



Goose Lake, 0 of 11 MW started on time

Recurrent Energy - Mustang



- 30 MW Solar Photovoltaic
- Term: Jan 2018 - Dec 2033 (15 Years)
- Annual energy production: 86,000 MWhs
- Fresno County, 145 miles southeast of San Rafael
- Will serve 14,300 average MCE residential customers

Recurrent Energy - Mustang



RE Kent

RE Mustang Site

Adjacent RE Kent Project



Current RE Mustang site conditions Sept 25, 2014



Integrated Resources Plan 2014 Update (Agenda Item #08)

Greg Brehm – Director of Power Resources | Marin Clean Energy

October 13, 2014



Purpose of Integrated Resource Plan (IRP)

- The IRP describes how MCE intends to supply its customers with electricity and related services to achieve the policy goals that have been established for the MCE Program.
- The IRP is updated annually and covers a forward looking ten-year period.
- Three primary purposes:
 1. Quantify resource needs over the planning period.
 2. Prioritize resource preferences and establish other relevant power procurement policies.
 3. Provide guidance to power procurement process undertaken by management.



Changes for 2014

- Updated customer and load forecast to account for currently enrolled customers and new territory expansions.
- Updated projections for energy efficiency savings and growth in net energy metering.
- Updated existing contracts and resource needs because of:
 - 2014 open season procurement
 - Additional Bucket 1 purchases to replace voluntary REC volumes, reduced reliance on unbundled RECs
 - Changes to contracted renewable energy projects' expected commercial operation dates
 - Added local solar project developments under MCE's Feed-in Tariff, "Sol Shares" and Chevron site



Key MCE Resource Plan Policies

- Reduce emissions of greenhouse gasses and other pollutants through increased use of renewable energy resources and reduced reliance on fossil fueled resources.
- Maintain competitive electric rates and increase control over energy costs through management of diverse resource mix.
- Benefit area's economy through investments in local infrastructure and energy programs.
- Help customers reduce energy consumption and bills through energy efficiency, distributed generation, and other demand-side programs.
- Enhance system reliability through investment in supply and demand-side resources.



Highlights of Draft IRP – Resource Targets

- MCE will utilize a portfolio of resources to maintain a renewable energy content of more than 50% during the planning period and progress toward a long term goal of increasing the renewable resource content to 100%.
- Planning for 10X increase (to 10 MW) in local renewable generation developed through MCE feed-in tariff, power purchase agreement, or possibly direct investment.
- Planning for 2.5X increase (to 47 MW) in customer-sited renewable generation under MCE's net energy metering program.
- New MCE energy efficiency programs expected to reduce energy sales by 0.1% annually.
- Demand response programs (MCE) expected to meet 5% of overall capacity needs.



Special Considerations

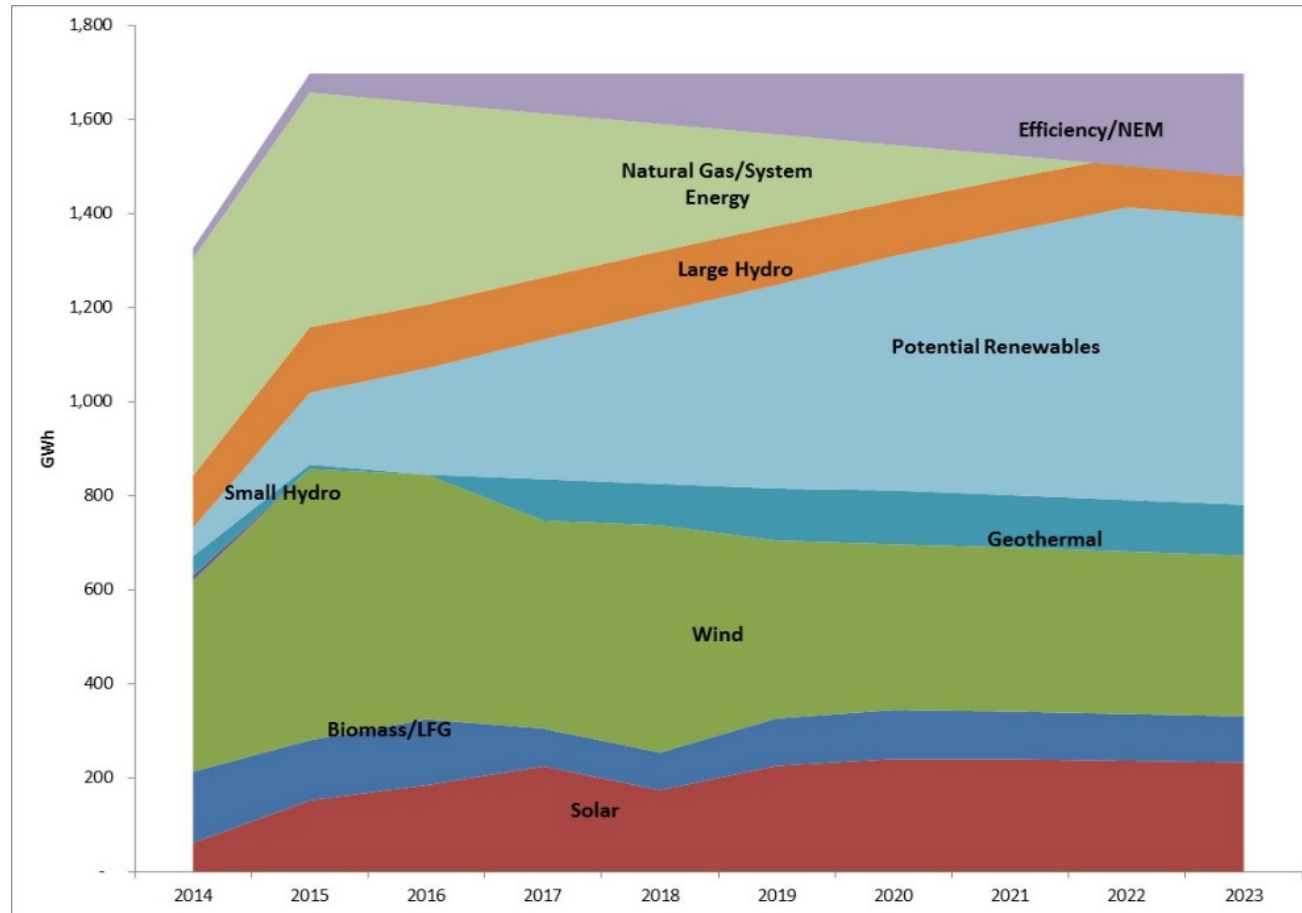
Federal Investment Tax Credit (ITC)

- The Federal ITC is scheduled to expire on December 31, 2016.
- Without the ITC, future renewable energy prices are expected to rise by as much as 30% over recent offers to MCE
- Should existing projects fail to deliver as anticipated, the cost of replacement energy may exceed the contract price.
- Staff proposes to reduce ITC risk is through the specification of Performance Security equal to one year of anticipated revenue for future PPAs - approximately three times the Performance Security amount established in prior MCE contracts.



Highlights of Draft IRP – Resource Mix

MCE Potential Resource Mix (GWh), 2014-2023



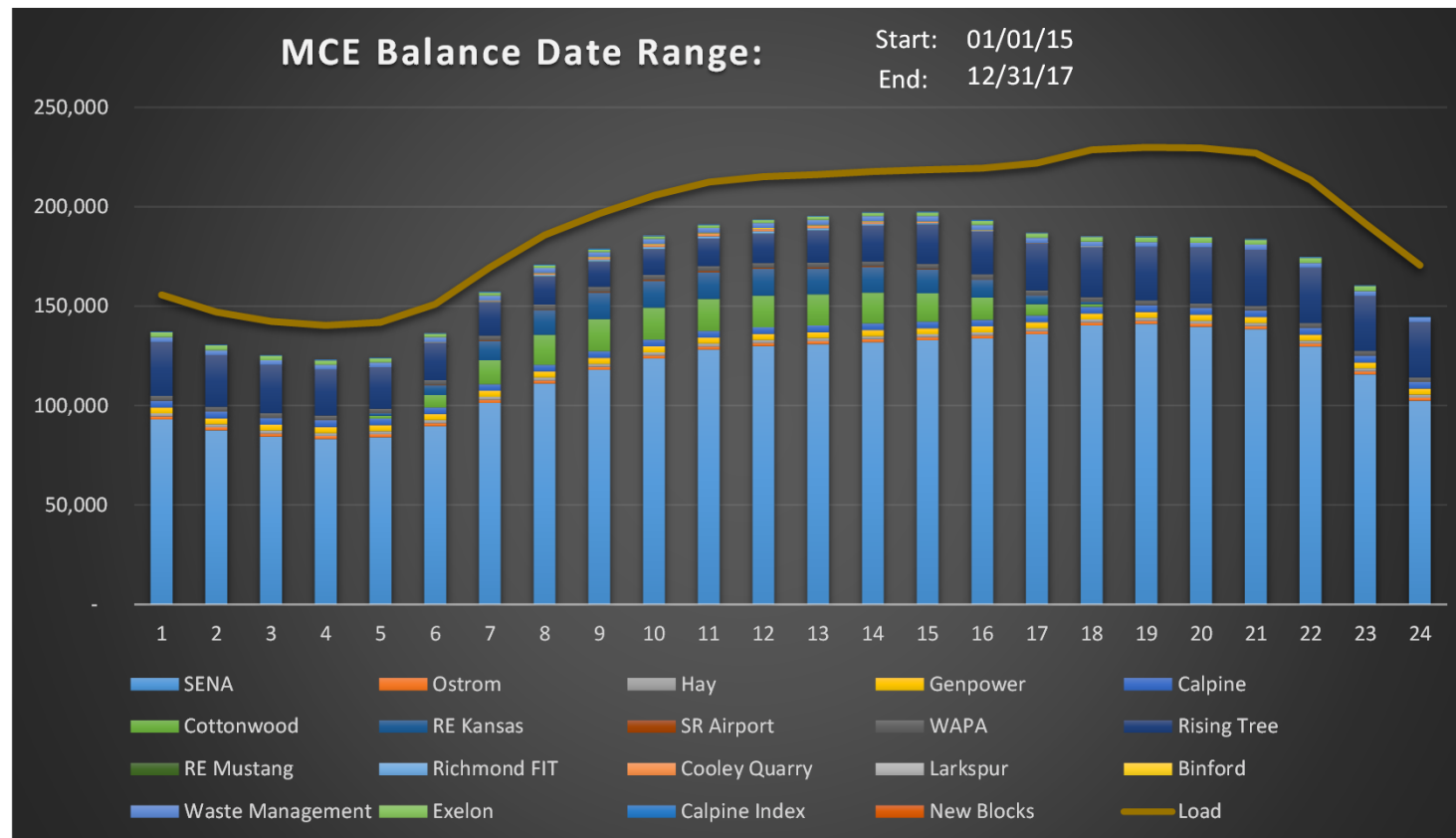
Highlights of Draft IRP – Resource Needs

- MCE currently manages 17 energy contracts with 14 energy suppliers.
- Conventional energy needs through 2017; roughly 25MWs needed for On peak and Off peak periods.
- Additional energy products will be needed as follows:
 - Longer term need beginning in 2018 (PCC1, PCC2, and PCC3).
 - Need for renewable energy certificates in 2015 and beyond to support voluntary renewable energy targets (Green-E).
 - Need for carbon neutral energy in 2015 and beyond to support voluntary GHG emissions targets.
 - Capacity purchases are needed to meet resource adequacy obligations beginning in 2016.
 - New Flexible Resource Adequacy requirements begin in 2015

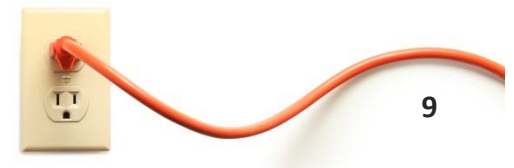


Highlights of Draft IRP – Resource Needs

2015 – 2017 MCE load and resource balance by energy contract

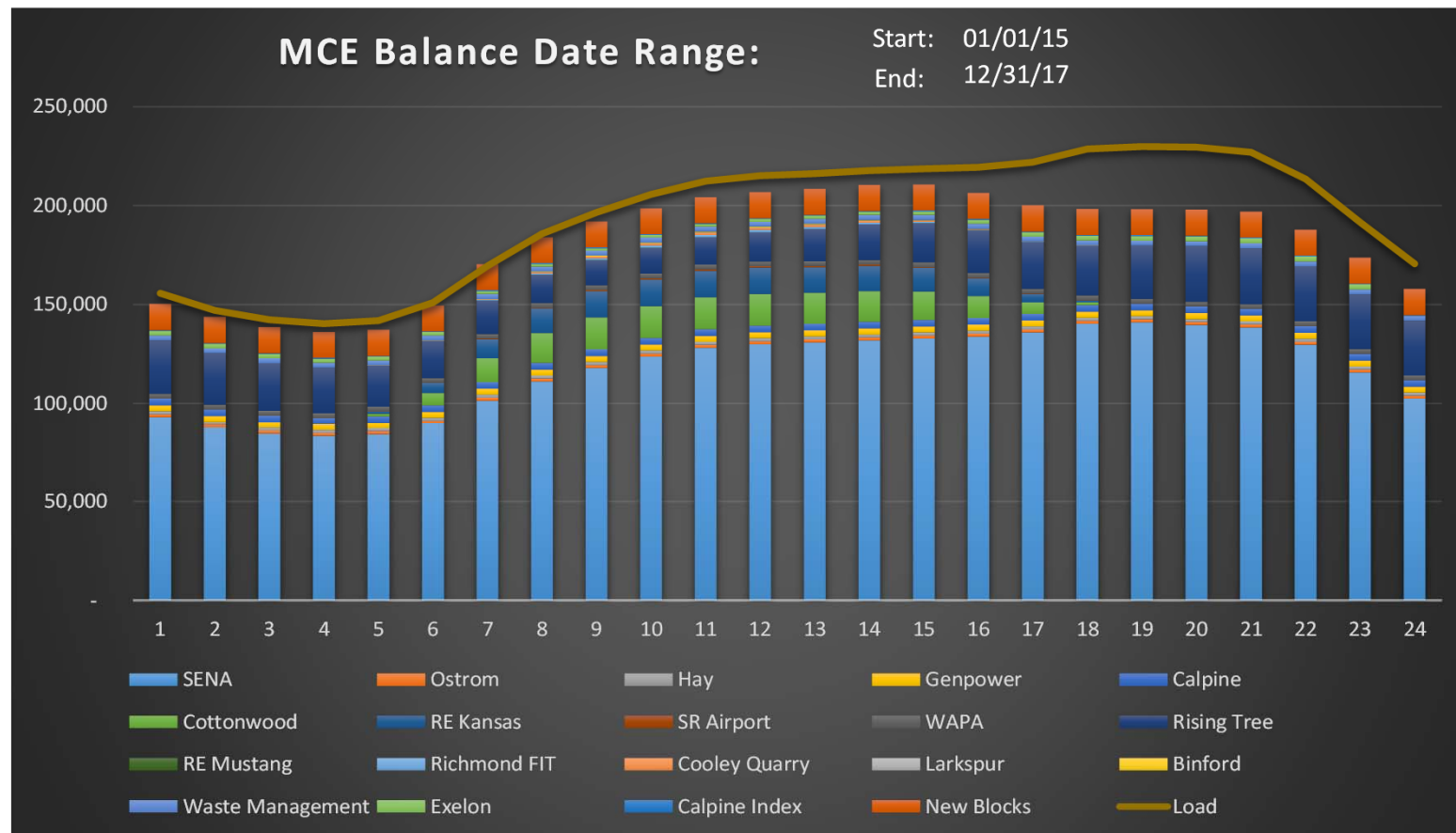


The 100MW Rising Tree wind contract is complementary to MCE's load and solar contracts



Highlights of Draft IRP – Resource Needs

2015 – 2017 MCE load and resource balance by energy contract with 25MW blocks of conventional energy



RPS Product Definitions

Renewables Portfolio Standard (RPS), Portfolio Content Category (PCC)	Key Features/ Attributes	Procurement Specifications		
		Compliance Period 1 (Jan 1, 2011 – Dec 31, 2013)	Compliance Period 2 (Jan 1, 2014 – Dec 31, 2016)	Compliance Period 3 (Jan 1, 2017 – Dec 31, 2020)
PCC 1	Generating resource must be located in California*	≥ 50% of RPS obligation	≥ 65% of RPS obligation	≥ 75% of RPS obligation
PCC 2	Firmed/shaped product; generators are typically located out-of-state*	No specified limitation; approx. 25% of RPS obligation	No specified limitation; approx. 20% of RPS obligation	No specified limitation; approx. 15% of RPS obligation
PCC 3	Unbundled certificates; no energy delivery requirement	≤ 25% of RPS obligation	≤ 15% of RPS obligation	≤ 10% of RPS obligation

*General guideline regarding PCC eligibility.



Highlights of IRP – Procurement Methods

- Bilaterally negotiated/brokered agreements – used for short to medium term purchases of standardized products in markets with price transparency; also used for unique, fleeting opportunities.
- Open Season process – annual cycle generally used for longer term procurement needs.
- Requests for proposal process – may be used for mid or long term commitments when urgent or unique needs are identified, time permits to conduct process, and RFP deemed likely to produce most competitive outcome.
- Standard Offer/Feed-In-Tariff – for small, local projects, subject to programmatic limits (long term).



Questions? Comments?





Marin Clean Energy

Integrated Resource Plan Annual Update

November 2014

Approved by MCE Board of Directors on November XX, 2014

MCE Integrated Resource Plan Annual Update

Draft

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Introduction

Marin Clean Energy (MCE), formerly known as the Marin Energy Authority provides retail electric generation services to customers within its service area comprising the political boundaries of Marin County and the City of Richmond in Contra Costa County. Beginning in 2015, MCE's service area will add unincorporated Napa County, the City of San Pablo and potentially the City of Benicia. MCE provides service to nearly eight out of ten electricity customers in the region, and MCE is the default electric generation provider for new or relocated customers within its service area. MCE strives to provide electric services to its customers at stable and competitive prices utilizing the cleanest possible sources of energy. With these objectives in mind, MCE plans for and secures commitments from a diverse portfolio of electric resources to reliably serve its customers' needs on a long-term basis. The current resource plan was adopted in November, 2013. This resource plan updates the existing plan and documents MCE's resource planning objectives for the next ten year planning period.

Purpose of Resource Plan

The resource plan has three primary purposes. These are to: 1) quantify resource needs over the planning period; 2) prioritize resource preferences and set forth other relevant energy procurement policies; and 3) provide guidance to the electricity procurement process undertaken by program management. In practical terms, the plan documents the energy procurement policy guidelines established by the MCE Board of Directors (MCE Board) to which program management adheres in its day-to-day management of the electric supply activities of MCE. Going forward, MCE's resource plan will be updated and approved by the MCE Board annually.

Highlights of the resource plan include the following:

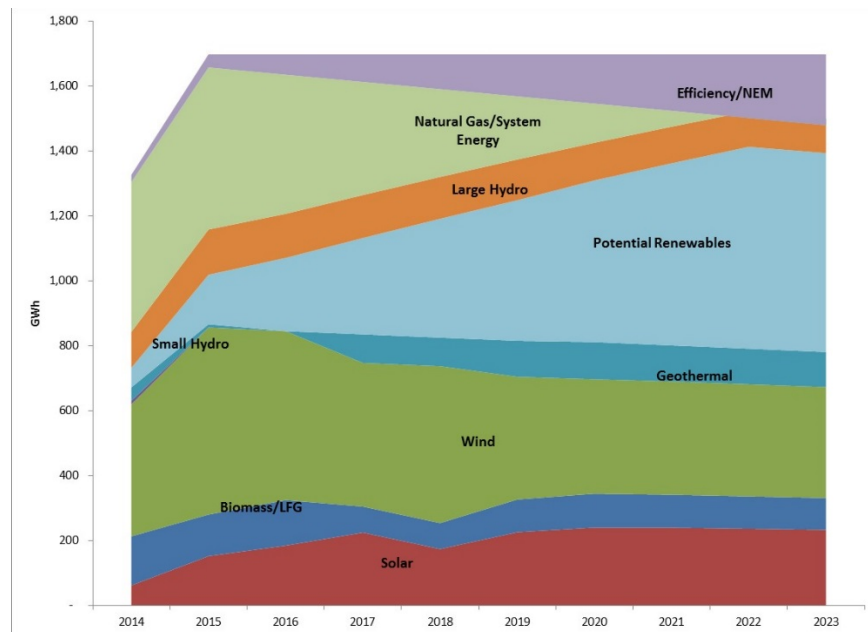
- MCE will manage a portfolio of electric resources to maintain a renewable energy content of greater than 50% during the ten-year planning period and progress toward a long term goal of increasing the renewable resource content to 100%.
- MCE currently manages a portfolio of seventeen energy contracts with fourteen different energy suppliers and anticipates managing an increasing number of energy contracts in carrying out the resource plan.
- MCE is largely resourced for the next several years, having contracted for most of its projected needs for bundled renewable energy through 2018 and capacity through 2015. MCE has a 25MW open position for non-renewable energy through 2017. However, MCE has a long term need for RPS Qualifying renewable energy beginning in 2019 (PCC1, PCC2 and PCC3); MCE also has a need for capacity purchases to meet resource adequacy obligations beginning in 2016.
- A portion of MCE's voluntary renewable energy purchases (those in excess of the mandatory regulatory obligation) are under contract through the end of 2018. Historically, MCE has purchased unbundled RPS and Green-e certified Renewable Energy Credits (RECs) for the

majority of its voluntary renewable energy purchases. Through MCE's 2014 Open Season process, MCE secured significant portions of its 2015 through 2018 REC requirements through the construction of a new California wind project. MCE will receive enough Product Content Category 1 RECs to satisfy all of MCE's RPS compliance obligations as well as some of its voluntary renewable energy targets (Green E). Furthermore, through this project, MCE will obtain the majority of its renewable energy from within California. MCE also has a need for carbon neutral energy in 2015 and beyond to support voluntary GHG emissions targets.

- MCE currently has approximately 3,004 customers generating renewable electricity under MCE's Net Energy Metering (NEM) Tariff representing 34,551 KW (34.6 MW) of local renewable generating capacity. MCE plans to increase total NEM generating capacity within the service area to 47,000 KW (47 MW) by 2021.
- MCE is planning for an additional 10,000 KW (10 MW, above and beyond the aforementioned expansion to NEM generating capacity) of distributed solar photo-voltaic (PV) generation within the service area by 2021. MCE began promoting in-area distributed generation in June of 2013 through direct investment in pre-development permitting for new projects, subject to Board approval of specific generation projects. Currently MCE has identified two development sites and is completing predevelopment due diligence. These sites could support up to 13.5 MW of Solar PV. Local feed-in tariff projects under contract total 5.7 MW.
- Energy efficiency programs are expected to offset MCE's annual energy and capacity requirements by approximately %0.1 during the current planning period. Additionally, demand response programs will offset MCE's annual capacity requirements by 5% during the current planning period. MCE is developing an Automated Demand Response pilot program for up to 200 customers.
- MCE will procure its energy needs through various methods as appropriate, including bilaterally negotiated agreements, requests for proposal processes, and the annual Open Season process.
- Specific authorities for entering into energy procurement contracts are allocated among management, the MCE Board, and subsets of the MCE Board depending upon the term of the resource commitment and whether the procurement is consistent with the adopted resource plan.

Figure 1 illustrates the projected resource mix during the period covered by this resource plan. The projected mix is illustrative; actual resource utilization will depend upon market conditions and resource availability at the time MCE engages in additional energy procurement.

Figure 1: MCE Resource Mix, 2014-2023



General Resource Planning Principles

MCE's resource planning considers three planning horizons: 1) the long-term planning horizon represents plans to serve load – i.e., the electric energy requirements of MCE customers – during the next ten years or longer; 2) the medium term planning horizon represents planning during the next five years; and 3) the short term planning horizon represents the plan for meeting load during the next twelve months. In contrast, the operating horizon represents the period of time from next hour to approximately 90 days out – during this period all or virtually all resource commitments have been made and only adjustments are necessary to address short term operating variability related to weather and other uncertainties. While long term plans will have a combination of firm resource commitments and unfilled or “open” resource needs that have been identified, resource commitments increasingly become firm and converge with the planned resource commitments as the operating horizon approaches.

MCE policy, established by MCE's founding documents and directed on an ongoing basis by the MCE Board, guides the resource plan and the ensuing resource procurement activities that are conducted in accordance with the plan. The key policies are as follows.

MCE will:

- Reduce emissions of green-house gasses and other pollutants from the electric power sector through increased use of renewable energy resources and reduced reliance on fossil-fueled resources.
- Maintain competitive electric rates and increase control over energy costs through management of a diversified resource mix.

- Benefit the area's economy through investments in local infrastructure and energy programs.
- Help customers reduce energy consumption and electric bills through investment in and administration of enhanced customer energy efficiency, cost effective distributed generation and other demand-side programs.
- Enhance system reliability through investment in supply and demand-side resources.

This plan translates these broad policy objectives into more specific plans for the use of various types of electric resources, taking into consideration MCE's projected customer needs and MCE's existing resource commitments.

Electric Sales Forecast

MCE's long term sales forecast is primarily influenced by certain structural or macro variables related to the number of customers receiving service in the MCE program. These macro variables include the potential for expansion of MCE's membership to other communities, with the expansion to the City of Richmond being the most recent example, and customer participation/opt-out rates. These macro variables are the primary driver of the load forecast and they dominate the effects of the usual load influencing micro variables related to weather, economic cycles, population growth, and changes in customer consumption patterns. The long term load forecast incorporates the impacts of the macro variables as well as seasonal electricity consumption patterns of MCE's customer base, while the other, micro variables are considered in MCE's short term operational load forecasts used for day-to-day scheduling of load and resources.

Enrolled Customers

MCE currently serves approximately 125,000 customers. An additional 25,000 customer are expected in the roll out in Napa County and the City of San Pablo. Additional membership expansion is being considered for the City of Benicia and potentially other cities in Napa, Contra Costa and Solano Counties, and such expansions may take place during the ten-year planning horizon if decided by the MCE Board¹. The resource planning effects of any additional membership would be addressed during the time that any such expansion is being considered and reflected in a future update of the resource plan.

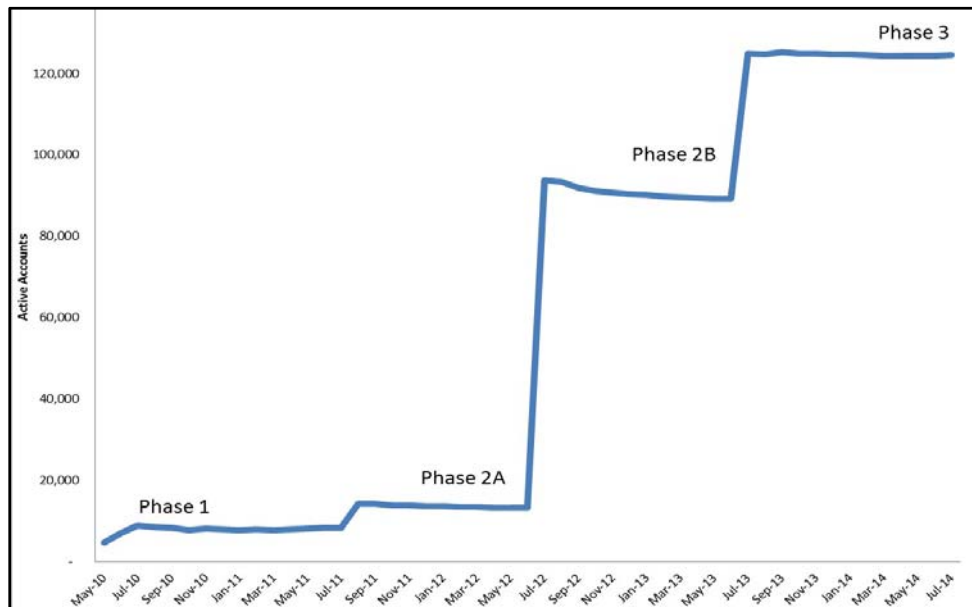
Historical customer participation rates experienced since the initial customer enrollments in May, 2010, as measured by the proportion of customers who have been offered service and who remain enrolled with MCE, have averaged approximately 77%. The vast majority of customer "opt-outs" have occurred in the period prior to enrollment and within 120 days following enrollment during which time multiple notices are provided to all customers explaining their service options and providing the mechanism by which customers can elect to remain with or return to Pacific Gas & Electric (PG&E) bundled generation service. Following the initial opt-out period, MCE's customer base shows significant stability, with new customers generally offsetting customer attrition. It is noteworthy that in the most recent expansion of

¹ Appendix A-2, which illustrates MCE's energy resource balance, incorporates potential future membership expansion with a 25% load increase starting in 2016 and each year thereafter

the MCE program, the Phase 3 expansion into the City of Richmond, the customer retention rate has been higher than for earlier phases, and is currently calculated at approximately 85%.

Figure 2 shows the recorded numbers of active customers since the Phase 1 launch in May, 2010. The customer base shows considerable stability between the phased expansions that occurred in May, 2010 (Phase 1A), July, 2010 (Phase 1B) and August, 2011 (Phase 2A). The downward trend immediately following the Phased enrollments is an indication of customer opt-outs which gradually taper off during the post enrollment period.

Figure 2: Active MCE Customers



Deep Green Program Participation

MCE offers a voluntary 100% renewable energy option for customers through its Deep Green program, and participation in the Deep Green program determines the incremental renewable energy volumes that must be procured to supply these customers. The energy requirements of Deep Green customers are supplied from MCE's portfolio of renewable energy resources and through incremental purchases of Green-e Energy certified renewable energy certificates to achieve an overall 100% renewable energy content for the Deep Green product. Currently, 2,106 customers have enrolled in the Deep Green program, equating to 1.68% of all MCE customers. The participation rate has increased slightly from 1.37% just prior to the recent Richmond enrollment. The expected Deep Green participation rate during the planning period is expected to grow to 5% as MCE continues to market this program to its customers. On a kWh basis, Deep Green participation is currently 0.64% among residential customers, and 2.03% among commercial customers.

Table 1: MCE Deep Green Participation, 2014

	Total Active Accounts	Total Deep Green	Residential Deep Green	Commercial Deep Green
Consumers	125,158	2,139	1,860	279
		1.71%	1.49%	0.22%
Retail Sales net of NEM Generation (kWh)	102,220,772	2,882,663	637,110	2,245,552
		2.82%	0.62%	2.20%
Total Retail Sales Generation (KWh)	102,930,279	2,916,185	654,690	2,261,495
		2.83%	0.64%	2.20%

Baseline Customer and Consumption Forecast

MCE's electricity forecast starts with a forecast of customers by end-use classification (residential, commercial, etc.). Class-typical monthly energy consumption, derived based on historical data, is applied to yield a monthly energy forecast by customer class. Hourly class load profiles are used to further break down the monthly energy forecast into hourly values in order to derive time-of-use and peak demand values. Certain adjustments are then made to this base forecast to account for factors not reflected in the historical data. MCE makes explicit adjustments to this forecast to account for the load impacts of its energy efficiency, net energy metering and demand response programs.

Energy Efficiency

As referenced in the MCE Implementation plan, studies have indicated that a reasonable long-term goal for energy efficiency programs in MCE's service area is to reduce overall annual energy consumption by approximately 2%. MCE's 2014 peak demand forecast is 218 MW, and annual consumption is forecast to be 1,252,000 MWh; 2% of which is 25,040 MWh. Achieving this level of savings will require development of specific programs, the requisite funding, and time to deploy the efficiency measures.

MCE has developed specific programs for 2012-2014 and has received funding through the CPUC from energy efficiency program funds collected from customers in the service area. In 2013, MCE's energy efficiency program generated an annual energy savings of 371 MWh, which was also accompanied by a 0.035 MW Summer Peak Demand reduction. Furthermore, MCE has set a 2014 annual energy savings goal of 1,133 MWh and 0.088 MW reduction in Summer Peak Demand and a 2015 annual energy savings goal of 1,360 MWh and 0.106 MW reduction in Summer Peak Demand. These programs represent MCE's initial efforts to provide energy efficiency services and will be expanded as experience is gained and additional opportunities are identified during the planning period.

Net Energy Metering Program

MCE provides among the strongest incentives in the nation to promote customer-sited distributed generation through its NEM program. The MCE NEM program pays eligible customer-generators the full retail rate normally applicable to the customer's consumption plus an additional 1 cent per kWh incentive for any surplus energy production. There are currently more than 3,004 customers subscribing to the NEM program, representing approximately 34,551 KW (34.6 MW) of local renewable generation,

30 MW of this installed solar capacity qualifies for resource adequacy because of the reduced capacity factor of solar generation during the peak demand month of June. MCE anticipates increasing NEM participation to approximately 47,000 KW (47 MW) over the next ten years. During the planning period, management will periodically evaluate MCE's NEM program to balance the achievement of MCE's long-term distributed generation goals and related impacts to MCE electric rates.

Demand Response Program

MCE does not yet administer a demand response program, although MCE customers are eligible for many of the programs administered by PG&E, and MCE receives corresponding capacity credits that are allocated by the California Public Utilities Commission (CPUC) and which reduce MCE's need to procure resource adequacy capacity. Currently, demand response programs provide 2% of MCE's resource adequacy requirements. MCE's goal for the planning period is to meet 5% of its total capacity requirements through demand response programs that will be operated directly by MCE or through utility administered programs for which MCE customers are eligible. MCE requested participation in a CPUC administered demand response pilot program in August of 2013. However, due to the limitations and cost burdens associated with the current demand response market construct, MCE has placed this specific pilot program on hold until MCE's advocacy efforts help institute a change that is fair and equitable to MCE's ratepayers. MCE continues to research demand response alternatives and is working with third-party program vendors to develop an effective pilot program that will benefit MCE customers.

Resources

This section discusses MCE's resource needs during the planning period taking into account the projected energy requirements of MCE's customers and the existing contractual resource commitments that MCE has secured to date. The MCE supply portfolio consists of a variety of generation resource types that are designed to be responsive to MCE's expressed policies as well as relevant regulatory requirements governing MCE's operations.

Existing Resource Commitments

MCE has entered into seventeen separate power purchase commitments for conventional and renewable energy, unbundled renewable energy certificates (RECs), and resource adequacy capacity. The existing resource commitments are described below.

Shell Energy North America (SENA), energy, capacity, renewable energy, scheduling services

The SENA agreement and associated confirmations (3 confirmations) provides for SENA to supply scheduling coordinator services for MCE and specified volumes of energy, capacity, and renewable energy. The confirmations extend through 2017 for energy and scheduling services, 2015 for capacity and 2016 for renewable energy. The SENA agreement initially covered all of MCE's resource requirements and will continue to do so until energy deliveries from other MCE contracts begin. SENA supplied volumes will be reduced as energy from other MCE power purchase agreements come online.

Genpower LLC, bundled renewable energy

The Genpower agreement extends for a twenty-year term from commercial operation date of February 13, 2013. The existing 2.4 MW landfill gas to energy project located in Lincoln, California was expanded, adding 2.4 MW of additional generation capacity. MCE is currently accepting delivery of energy production and renewable attributes from both engines at an average capacity of 3.55 MW. No capacity attributes are associated with the facility. Annual Energy deliveries are estimated at 27,000 MWh.

G2 Energy LLC Landfill Gas to Energy, bundled renewable energy

MCE has two contracts with G2 Energy LLC. Both agreements extend for an eighteen-year term from their commercial operation date. MCE has contracted for a new 1.6 MW landfill gas to energy project located in Solano County, California; commercial operation date of July 2nd, 2013. MCE's second agreement with G2 Energy is for an additional 1.6 MW of generation being added to an existing 1.6 MW landfill gas to energy project located in Yuba County, California; commercial operation date of September 11th, 2013. MCE will schedule and take delivery of energy production from both engines and receive the associated renewable attributes. No capacity attributes are associated with either of the G2 Facilities. Energy deliveries are projected to average approximately 23,000 MWh per year during the term.

Cottonwood Solar LLC, bundled renewable energy, capacity

The Cottonwood agreement extends for a twenty-five year term from commercial operation of a new 24 MW PV project located in Kern and Kings County, CA and a new 1 MW project located within Marin County. MCE will schedule and take delivery of energy production from these facilities and receive the associated renewable and capacity attributes. Energy deliveries are projected to average 63,650 MWh per year during the term. The expected online date is February, 2015.

RE Kansas LLC, bundled renewable energy, capacity

The RE Kansas agreement, originally a two year short term power purchase agreement (PPA) is expecting an early commercial operation date, adding an additional year of renewable energy production from a new 20 MW PV project located in Kings County, California. MCE will schedule and take delivery of energy production from the facility and receive the associated renewable and capacity attributes. Energy deliveries are projected to average 49,000 MWh per year during the term. The expected online date is January, 2015.

US Western Area Power Administration, Large Hydro

Under the agreement with Western, MCE will receive a specified allocation of hydro-electric energy produced by the federal Central Valley Project. Deliveries will commence in January, 2015 and continue for a ten year term. Energy deliveries are projected to average 25,000 MWh per year during the term; however, due to the current drought, 2015 energy deliveries are expected to be 12,500 MWh.

Calpine Energy Services, bundled renewable energy, capacity

Under the agreement with Calpine, MCE will receive a specified allocation of Geothermal-electric energy produced by the Northern California Geysers Project. 3 MWs of energy and capacity will be delivered January through December of 2014 with 10 MWs of energy and capacity commencing in January of 2017

and continuing for a ten year term. Energy deliveries are projected to average 41,000 MWh for 2014, 10,000 MWh for 2015, and 87,600 MWh per year during the 2017 to 2026 term.

Exelon Generation Company, bundled renewable energy

Under the agreement with Exelon, MCE will receive a firm and shaped allocation of Western Electric Coordinating Council (WECC) Wind RECs and bundled electric energy. The production comes from two Washington state generators; White Creek Wind and Nine Canyon Wind. 25 MWs of energy will be delivered January through December of both 2014 and 2015. Energy deliveries are to be 60,000 MWh for 2014 and 50,000 MWh for 2015.

EDP Renewables LLC, bundled renewable energy

The EDP agreement is a four year short term PPA expecting a commercial operation date of July 2015. The newly constructed 100 MW California wind project is located in Kern County, California. MCE will schedule and take delivery of energy production from the facility and receive the associated renewable attributes. Energy deliveries are projected to average 144,000 MWh per year for 2015, and 222,000 MWh per year through 2018

RE Mustang LLC, bundled renewable energy, capacity

The RE Kansas Mustang, is a 15 year long term PPA that is expecting a commercial operation date of December 2015. MCE will begin receiving renewable energy production from the new 30 MW PV project located in Fresno County, California in January of 2017. MCE will schedule and take delivery of energy production from the facility and receive the associated renewable and capacity attributes. Energy deliveries are projected to average 86,000 MWh per year during the term.

Waste Management – Redwood Landfill, bundled renewable energy, capacity

The Redwood Landfill agreement extends for a twenty-year term from and expected commercial operation date of November, 2015. The new 4 MW landfill gas-to-energy project is located in Novato, California and will be a state of the art low emission facility. MCE will accept delivery of energy production, renewable attributes, and RA capacity attributes associated with the facility. Annual energy deliveries are estimated at 30,000 MWh.

Unbundled Renewable Energy Certificate Resources

OneEnergy, Inc, renewable energy certificates

The OneEnergy agreements (two master PPAs) and associated confirmations (three confirmations) provide for delivery of RPS qualifying and Green-e Energy certified renewable energy certificates during 2014 and 2015 from one or more wind facilities located within the WECC region. Green-e Energy eligible and RPS Eligible volumes are 150,000 MWh per year for both 2014 and 2015.

Puget Sound Energy, Inc, renewable energy certificates

The Puget Sound Energy agreement (one confirmation), provides for delivery of RPS qualifying and Green-e Energy certified renewable energy certificates during 2014 from a wind facility located within the WECC region. Green-e Energy eligible and RPS Eligible volumes are 195,000 MWh for 2014.

Feed-In Tariff Projects

San Rafael Airport Feed-In Tariff Project, renewable energy, capacity

The San Rafael Airport Feed-In-Tariff (FIT) agreement extends for a twenty-year term from commercial operation date of October 29th, 2012. The new 972kW PV project is located in San Rafael, California. Energy deliveries offset MCE load and are in line with projected average generation of 1,800 MWh per year during the term.

Cooley Quarry Feed-In Tariff Project, renewable energy, capacity

The Cooley Quarry FIT agreement extends for a twenty-year term with an expected commercial operation date of November 29th, 2014. The project includes a 990 kW Sol Shares PV project, and a 500 kW FIT PV project and is located in Novato, California. Energy deliveries offset MCE load and are projected to average 3,000 MWh per year during the term.

Richmond Feed-In Tariff Projects, renewable energy, capacity

Two FIT projects are under development in Richmond, CA. Both 998 kW agreements extend for a twenty-year term with an expected commercial operation date of June 30th, 2015. The projects energy deliveries offset MCE load and are projected to average 3,600 MWh per year during the term.

Larkspur Feed-In Tariff Projects, renewable energy, capacity

The 286 kW roof mounted FIT project is located in Larkspur, CA. The agreement extends for a twenty-year term with an expected commercial operation date of November 30th, 2015. The projects energy deliveries offset MCE load and are projected to average 500 MWh per year during the term.

Binford Storage Feed-In Tariff Projects, renewable energy, capacity

The building integrated PV project is under development in Novato, CA. The 990 kW agreement extends for a twenty-year term with an expected commercial operation date of Sept 30th, 2015. The projects energy deliveries offset MCE load and are projected to average 1,800 MWh per year during the term.

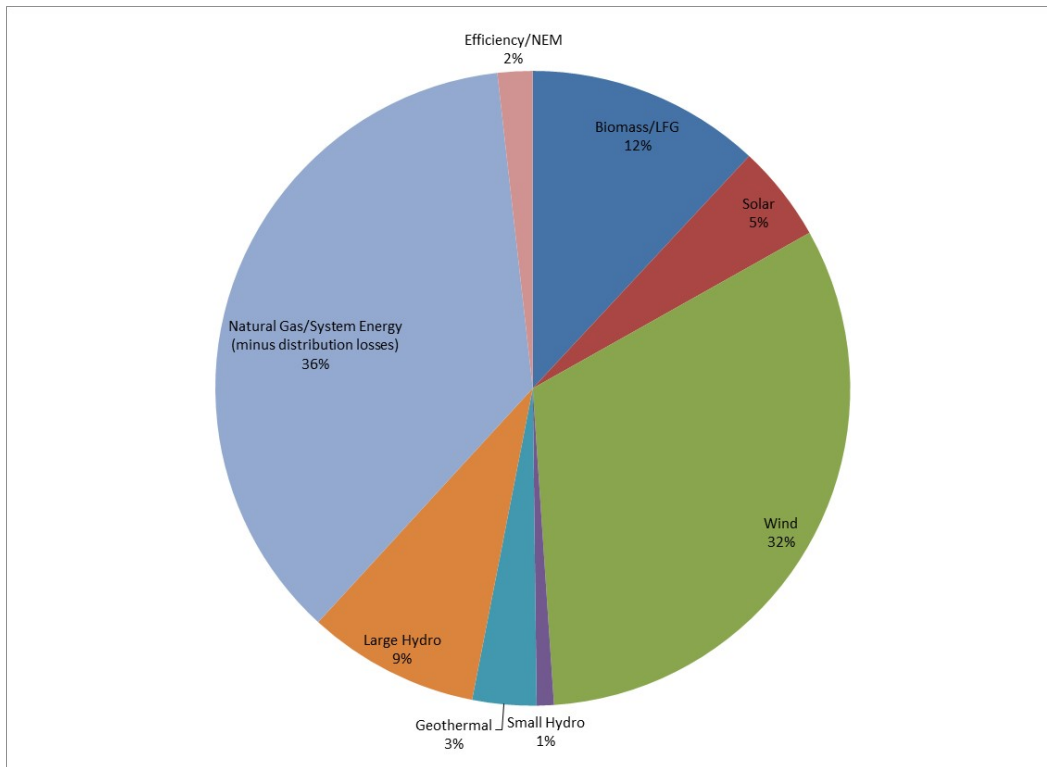
Giant Road Feed-In Tariff Project, renewable energy, capacity

The roof mounted PV project will be included on a newly constructed building under development in Richmond, CA. The 999 kW agreement extends for a twenty-year term with an expected commercial operation date of May 15, 2015. The projects energy deliveries offset MCE load and are projected to average 1,800 MWh per year during the term.

Current Resource Mix

MCE's current resource mix includes the highest proportion of renewable energy (51%) of any known utility in California. Figure 3 shows the current mix of resources attributable to the MCE Program.

Figure 3: MCE 2014 Resource Mix [estimated]



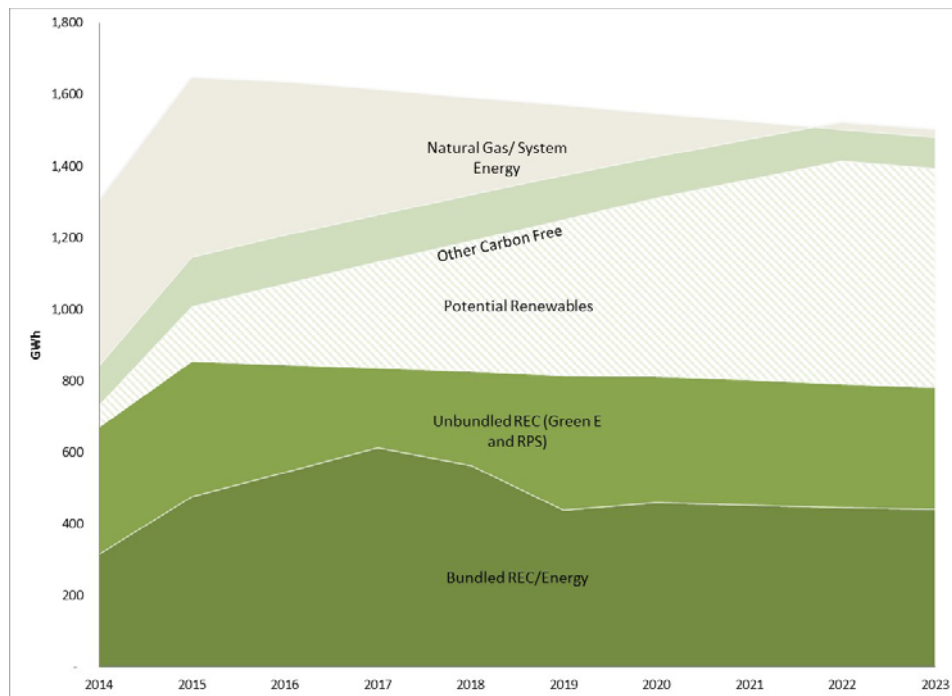
Resource Needs

MCE will procure additional resources to meet its resource targets. This section sets forth MCE’s planned resource volumes and quantifies the net resource need or “open position” that remains after accounting for production from MCE’s existing resource portfolio. MCE has established resource targets for the supply portfolio’s overall renewable energy content as well as subcategories of renewable energy procurement, carbon neutral renewable resources, capacity resources, and other system resources.

Renewable Resources

MCE has committed to providing all of its customers with energy that meets a minimum 50% overall renewable energy content; incremental renewable energy supply will also be procured to ensure that the energy requirements of all customers participating in the Deep Green program will be served with 100% renewable energy. MCE’s renewable energy requirements are met with a combination of RPS-eligible contracts and Green-e Energy certified REC purchases. As Figure 4 illustrates, the proportion supplied by bundled renewable energy will increase during the planning period and displace purchases of unbundled RECs, while maintaining an overall 50% renewable energy content. Additional bundled renewable energy sources (Potential Renewables), contracted in 2014, will contribute towards meeting MCE’s long term goal of 100% renewable energy supply.

Figure 4: MCE Renewable and Non-renewable Energy Volumes, 2014-2023



RPS Requirements

MCE's power content exceeds the state's RPS requirements and will continue to do so during the planning period. The RPS requirements can be met with a variety of renewable resource technology types and procurement methods. The RPS requirements ramp up from 20% to 33% by 2020. Eligible resources currently include the following:

- Biodiesel
- Biogas
- Biomass
- Conduit hydroelectric
- Digester gas
- Fuel cells using renewable fuels
- Geothermal
- Hydroelectric incremental generation from efficiency improvements
- Landfill gas
- Municipal solid waste
- Ocean wave, ocean thermal, and tidal current
- Photovoltaic
- Small hydroelectric (30 megawatts or less)
- Solar thermal electric
- Wind

RPS compliance can be met with procurement from renewable resources located within or deliverable to the state ("Bucket 1"), and with certain quantity limitations, procurement of shaped and firmed renewable energy ("Bucket 2") and unbundled RECs from RPS qualifying resources ("Bucket 3").

MCE has a committed supply of RPS qualifying renewable resources to meet a 27% RPS standard, well in excess of the currently applicable RPS requirement of 20% and equivalent to the RPS standard that will be in effect in 2017. MCE will increase its RPS qualifying content to at least 33% by 2015, five years ahead of its initial target. Furthermore, MCE will obtain an overall renewable energy content of at least 55% by 2020. MCE intends to continue exceeding the environmental performance standards mandated by state regulations with respect to renewable energy and greenhouse gas (GHG) emissions.

RPS Open Positions

MCE has focused its procurement efforts on long term PPAs with new RPS qualifying generation facilities located within the state. These are the highest value, Bucket 1 resources. In accordance with state regulations, a minimum of 65% of RPS procurement used for compliance must meet the established requirements for Bucket 1, which for most practical purposes means use of bundled energy from California sited renewable power projects. MCE engages in shorter term procurement for the more readily available Bucket 2 (PCC2) and Bucket 3 (PCC3) resource purchases. As shown in Table 1, MCE has a need for RPS renewable energy and renewable energy certificates in 2019 and beyond to support RPS compliance.

Table 2: MCE RPS Compliance Energy Balance, 2014-2023

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Retail Sales (GWh)	1,273	1,568	1,680	1,675	1,670	1,666	1,661	1,656	1,652	1,647
RPS %	22%	23%	25%	27%	29%	31%	33%	33%	33%	33%
RPS Energy Required (GWh)	276	365	420	452	484	516	548	547	545	543
RPS Energy Contracted (GWh)	349	516	547	615	564	348	353	358	358	358
Net Short/(Long)	(72)	(151)	(127)	(163)	(80)	169	195	188	187	185

Voluntary Renewable Open Positions

Voluntary renewable energy purchases are in excess of the RPS requirements. Voluntary renewable energy purchases represent the amount of procured renewable energy that is above the RPS and used to meet the program's overall renewable energy content (> 50%) in providing the Light Green and Deep Green products to MCE customers. To date these requirements were generally met with short term purchases of unbundled Green-e Energy certified RECs. MCE has contracted for sufficient volumes of bundled renewable energy for 2015 and beyond to support a significant portion² of its voluntary renewable energy targets (Green E). The remaining open positions are shown in Table 3.

Table 3: MCE Voluntary Renewable Energy Balance, 2014-2023

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Energy Required (GWh)	286	354	381	382	383	383	324	325	325	326
Energy Contracted (GWh)	125	107	-	-	-	-	-	-	-	-
Bundled Energy Contracted (GWh)	(33)	62	60	129	80	54	22	26	29	33
Net Short/(Long)	195	186	322	253	303	329	302	299	296	293

² Estimated to account for an average of 25% of MCE's voluntary renewable energy targets (Green E) per year between 2015 and 2018

Carbon Neutral Resources

MCE policy targets the carbon neutral energy content of the MCE generation supply portfolio to be less than or equal to the carbon neutral energy content of the PG&E generation supply portfolio. MCE utilizes the Climate Registry definition of carbon neutral resources. MCE has a need for carbon neutral energy in 2015 and beyond to support voluntary GHG emissions targets.

Table 4: MCE Carbon Neutral Energy Balance, 2014-2023

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Retail Load (Net of EE/DG)	1,273	1,568	1,680	1,675	1,670	1,666	1,661	1,656	1,652	1,647
Carbon Free Target	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
Carbon Free Targeted Volumes	764	941	1,008	1,005	1,002	999	997	994	991	988
CF Under Contract	584	721	572	640	589	373	378	383	383	383
Future Generic Renewables	194	186	322	253	303	491	487	476	470	464
Open Position, Carbon Free (14)	34	114	112	110	136	131	134	137	141	

Capacity Resources

MCE meets the state's resource adequacy standards by procuring qualifying capacity necessary to meet MCE's overall peak demand plus a 15% reserve margin and by ensuring that the mandated proportion of such capacity resources are procured from local reliability areas defined by the California Independent System Operator (CAISO). MCE has a need for capacity purchases to meet resource adequacy obligations beginning in 2016. In addition, MCE has long term capacity rights under several of its PPAs with renewable generators that provide a portion of MCE's post 2014 local resource adequacy needs.

Table 5: MCE Resource Adequacy Capacity Balance, 2014-2023 (MW)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Load	231	292	293	294	295	297	298	299	300	302
Peak Demand	(7)	(11)	(16)	(21)	(25)	(30)	(35)	(39)	(44)	(49)
Net DG and Efficiency										
Net Peak Demand										
RA Requirements	27	34	34	34	34	34	34	34	34	34
Greater Bay Area	43	54	53	52	51	50	49	48	47	46
Other PG&E Area	151	189	187	185	183	181	179	177	175	173
System										
RA Contracted	27	34	-	-	-	-	-	-	-	-
Greater Bay Area	45	85	35	45	32	32	32	32	32	32
Other PG&E Area	150	127	-	-	-	-	-	-	-	-
System										
Net Short/(Long)	0	0	34	34	34	34	34	34	34	34
Greater Bay Area	(2)	(31)	19	8	20	19	18	17	16	15
Other PG&E Area	1	62	187	185	183	181	179	177	175	173
System										

System Energy

The remaining energy supply, after accounting for renewable and carbon neutral energy supplies, can be met with unspecified system energy purchases or specified purchases of conventional (typically natural gas) generation. MCE policy prohibits unit-specific purchases from coal or nuclear generation facilities. MCE supplies its remaining load through a combination of short to medium-term fixed priced power

purchases and short term purchases from the CAISO markets. MCE has contracts in place to supply approximately 80% to 90% of its load at fixed prices through the end of 2017. The remaining energy is met through CAISO market purchases and other variable priced supply contracts. Significant system resource procurement needs exist for 2018 and beyond, when the SENA energy confirmation is scheduled to terminate.

Table 6: MCE System Energy Balance, 2014-2023 (GWh)

Load	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Retail Sales	1,289	1,595	1,721	1,730	1,738	1,747	1,756	1,764	1,773	1,782
DG and Efficiency	(16)	(27)	(41)	(54)	(68)	(81)	(95)	(108)	(122)	(135)
Distribution Losses	76	94	101	101	100	100	100	99	99	99
Total Load Requirement	1,349	1,662	1,781	1,776	1,771	1,766	1,761	1,756	1,751	1,746
Less Renewables/Carbon Free										
Existing and Planned Renewables, Bundled	311	473	547	615	564	460	488	485	483	481
Existing and Planned Renewables, Unbundled	356	336	322	253	303	378	353	349	345	342
Existing and Planned Other Carbon Free	96	132	139	137	135	161	156	159	162	166
Total Existing and Planned Carbon Free Energy	764	941	1,008	1,005	1,002	999	997	994	991	988
Total System/Null Energy Requirements										
Null Energy Associated with Unbundled RECs	356	336	322	253	303	378	353	349	345	342
Remaining System Energy Requirement	586	721	773	771	768	766	764	762	760	758
Less System/Null Energy Contracted	867	887	946	920	-	-	-	-	-	-
System/Null Energy Net Short/(Long)	75	170	149	103	1,071	1,144	1,117	1,111	1,105	1,099

New Resource Requirements

The integration of intermittent renewable energy resources into the California grid in order to meet the state's 33% renewable energy target has presented new energy scheduling challenges for the CAISO. Historical load patterns and peak consumption hours have shifted, requiring shorter duration and faster increases and decreases in generation and load dispatch. This will require two new resource types to be introduced in the MCE resource plan in coming years; flexible capacity and energy storage.

Flexible Capacity

The CAISO, in collaboration with the CPUC and other local regulatory authorities, must ensure that the energy supply has sufficient flexibility, including load following capabilities, to satisfy system variability needs. Flexible capacity capabilities of resources such as distributed generation, demand response, and storage should ultimately count towards a load-serving entity's (LSE) flexible capacity procurement obligation. Each LSE must demonstrate procurement of 90 percent of its flexible capacity requirement on the annual resource adequacy filing and 100 percent procurement of the requirement on the monthly resource adequacy filing. Compliance with this requirement will begin in 2015, and MCE has procured its 2015 flexible capacity requirements.

Table 7: MCE Flexible Capacity Targets, 2015

Results of Energy Commission Review and Adjustment to the 2015 Year-Ahead Load Forecast for MCE											
Monthly Flexible Capacity Targets (MW)											
Jan - 15	Feb - 15	Mar - 15	Apr - 15	May - 15	Jun - 15	Jul - 15	Aug - 15	Sep - 15	Oct -15	Nov - 15	Dec - 15
51	76	58	47	41	53	34	33	42	60	77	79

Energy Storage

The California Energy Storage Bill, AB 2514, was signed into law in September of 2010, and as a result, the CPUC established energy storage targets for investor owned utilities, community choice aggregators (CCAs), and LSEs in September 2013. The CPUC decision established an energy storage procurement target for CCAs and electric service providers equal to 1 percent of their forecast 2020 peak load by 2020. The decision will require MCE to install 3 MW of energy storage no later than 2024 based upon the current load forecast. Beginning on January 1st, 2016, and every two years thereafter, MCE must file an advice letter demonstrating compliance with this requirement, progress towards meeting this target, and a description of the methodologies for insuring projects are cost-effective.

Procurement

MCE will procure its net open positions using a combination of PPAs of various terms (short, medium, long), demand-side programs, and potentially MCE owned generation projects. This section describes the types of resources MCE may procure and discusses various considerations that may influence MCE's procurement efforts.

MCE is continuing a transition from the initial full requirements contract that was used to launch MCE, under which all supplies of energy, capacity and renewable energy were provided through a single agreement with a single counterparty. Subsequent to that initial contract, MCE has put into place a robust renewable energy buying program that now supplies the majority of the MCE renewable energy supplies from a variety of renewable energy providers. MCE is similarly developing an independent buying program for non-renewable energy and capacity. MCE intends to soon initiate the non-renewable resource buying program with purchases of resource adequacy capacity to begin filling its 2015 open positions. A non-renewable energy buying program will also be put into place during the next few years to begin filling the 2018 open energy positions.

MCE Generation Development

MCE does not currently own any generation assets. MCE has historically utilized long term PPAs (typically 20-25 years) to obtain rights to renewable energy supplies at stable costs for its customers. MCE considers long term PPAs to offer similar benefits to asset ownership in regards to price certainty and supply security; however MCE does not have an explicit bias towards either PPAs or asset ownership. MCE examines opportunities for asset ownership on a case-by-case basis, considering such factors as risk allocation, asset location, technology, and, most critically, supply of electricity at the least cost to MCE ratepayers.

Current federal tax policy generally favors private versus public ownership of renewable assets due to the tax credits that are uniquely available to the private sector. These tax credit policies are set to expire at the end of 2016 and if they are not extended, renewable energy prices may see a 30% increase. MCE's experience has been that PPAs for production by privately owned renewable generation facilities have typically been the least cost option for MCE. MCE has secured buyout option provisions in some of its renewable PPAs, which provide a path to MCE asset ownership after a defined period of time when the tax benefits have been exhausted by the private developer. MCE will typically seek buyout option

provisions in its renewable PPAs, although not all projects are suitable for acquisition, and not all PPAs will contain such provisions.

Assessing a generation project's operational risk becomes more important for assets owned by MCE because MCE could be at risk for production shortfalls and for cost over-runs, which are risks typically absorbed by the developer under a PPA structure. With these risks in mind, MCE is most likely to own small, local PV projects as these projects are technologically proven, have relatively low operational and maintenance risks, and provide benefits to the local economy. MCE is targeting development of 10 MW of new PV within its service territory during the next ten years.³ MCE may invest directly in these projects as necessary to ensure development of certain project opportunities that will promote the achievement of MCE's goals and objectives. MCE may consider ownership of other generation projects and will examine such opportunities on a case-by-case basis. Direct generation investment becomes an increasingly viable option during the planning period as MCE gains additional operational experience and more robust access to credit markets. As part of this approach, MCE may also consider joint ventures and turnkey development approaches to ensure appropriate allocation of project risks.

Chevron Products Company – Local Solar Development

In September of 2014, MCE entered into an option agreement to lease 60 acres from Chevron Products Company at its Richmond oil refinery for the development of 2 to 12 MWs of photovoltaic solar generation. The initial evaluation of this brownfield development site by MCE staff yielded no significant development, permitting, or interconnection concerns. As a result, MCE is in the process of completing a site development plan, and expected the development to begin in late 2015. MCE's development of the Project will benefit the public by allowing MCE to provide electricity from local renewable resources to customers in alignment with MCE's role as a California Joint Powers Authority. MCE's status as a California Joint Powers Authority and the public benefit that will result from these Agreements and MCE's involvement in the Project are key factors in CPC's decision to lease the property to MCE on the terms of this Agreement.

Renewable Resource Power Purchases

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

MCE continually manages its forward load obligations and supply commitments with the objective of balancing cost stability and cost minimization, while leaving some flexibility to take advantage of market opportunities or technological improvements that may arise. MCE monitors its open position separately for renewable resources (by compliance category), conventional resources, and on a total portfolio basis. MCE maintains portfolio coverage targets of up to 100% in the near-term (0 to 5 years)

³ The 10 MW local PV target is in addition to the 14 MW of distributed generation installed under the NEM program

and leaves a greater portion open in the mid to long term, consistent with generally accepted industry practice.

Generally, the renewable portion of the portfolio is met with longer term contracts, providing cost stability for the supply portfolio. MCE's guidelines for long term, bundled renewable energy purchases are shown in Table 5.

Table 8: MCE Renewable Energy Contracting Guidelines

Time Horizon	Contracting Guideline (Contracts/Total RE Need)
Current Year	90% to 100%
Years 2 – 3	80% to 100%
Years 4 – 5	60% to 100%
Beyond Year 5	50% to 80%

MCE's supply preference is for a mix of renewable energy technologies that will deliver energy in a pattern that is generally consistent with MCE's load shape. Preferred purchase volumes from baseload (e.g., biomass, landfill gas, renewable fuel cells) and peaking renewable technologies (e.g., solar PV or CSP) is in rough proportion to the load profile (75% baseload/25% peaking), subject to adjustments for market conditions and technology price differentials that exist at the time of purchase. Recent market data suggests that peaking resources are likely to comprise a larger proportion of the renewable supply portfolio due to the recent rapid declines in prices for solar PV generation projects and the abundance of such projects in development. The actual renewable portfolio during the planning period will likely be more heavily weighted toward peaking energy production due to the prevalence of competitively priced solar projects. MCE may also engage in purchases from as-available renewable generation (e.g., wind) to the extent that energy prices reflect a lower value due to their intermittency.

MCE has no explicit policy preference for any specific qualifying renewable energy technology, apart from the pricing and production profile considerations described above.

In regards to generation project location, MCE places greater value on locally-sited renewable energy projects, particularly those located within the MCE service area. Of next highest preference are projects sited in the North Path 15 region followed by projects in the South Path 15 region and finally out-of-state resources.

Feed In Tariff

MCE's current Feed-In Tariff (FIT) program was established as a 2 MW pilot program. The program was expanded to 10 MW in aggregate capacity, with 5.7 MW currently under contract. MCE anticipates conducting a review of the FIT program once the cap is reached along with other refinements that may be made. This expansion will support achievement of MCE's local renewable generation development objectives. MCE's first FIT project, the San Rafael Airport FIT came online in October of 2012, and is producing 10% more renewable energy than originally estimated.

MCE established the Sol Shares program in 2014, which is a new community based solar program that diverts select FIT projects and enables subscribers to sign up for 100% local solar generation in addition

to MCE's Light Green 50% renewable and 100% Deep Green renewable programs. The Sol Shares program is not yet fully subscribed but is expected to be on line in early 2015.

Carbon Neutral Resource Power Purchases

MCE anticipates that its carbon neutral power content standard will be met through MCE's renewable procurement policies, supplemented as necessary with short term (< 1 year) purchases of carbon neutral energy sources such as large hydro-electric energy, unbundled renewable energy certificates, or verifiable environmental credit offset products. As previously noted, MCE will not engage in unit-specific purchases of nuclear power to meet its carbon neutral content policy.

System Resources and Specified Power Purchases

MCE may engage in purchases of unspecified system energy or unit specific purchases from natural gas-fueled generation. Energy products may include peak, off-peak, baseload, and shaped energy. MCE may purchase energy and/or capacity at fixed prices, indexed prices or through tolling agreements. Under a tolling agreement, MCE would obtain the right to electricity produced by a natural gas generation facility, and MCE would deliver the natural gas to the facility for conversion into electrical energy. Purchases of system energy will typically be for short and medium terms (< 5 years). Unit-specific and tolling agreements may be for short, medium and long terms. Natural gas purchases associated with tolling agreements will typically be for short to medium terms.

With respect to MCE's total supply and load obligations, MCE will manage exposure to market price risk by executing forward electric supply commitments for its projected energy sales obligations. MCE considers a variety of factors including the desire to maintain cost stability for MCE customers, the need to maintain competitive rates relative to PG&E and other energy service providers, and cost minimization for MCE customers. MCE's budgeting and ratesetting processes benefit from maximizing cost certainty within the budgetary fiscal year and avoiding significant year-to-year changes caused by energy market volatility. However, it is appropriate to maintain flexibility for incorporation of new, but as yet unplanned, resources or load reducing programs and to maintain limited exposure to market pricing in order to maintain relative cost parity with competing energy service alternatives offered by the incumbent utility. In light of these considerations, the following market price contracting guidelines shall be maintained during operation of the MCE program.

Table 9: MCE Market Price Contracting Guidelines

Time Horizon	Contracting Guideline (Contracts/Total Energy Need)
Current Year	80% to 105%
Year 2	70% to 100%
Year 3	60% to 95%
Year 4 and Beyond	Up to 70%

As MCE continues to contract with additional counterparties for supply of system energy and capacity in anticipation of the termination of the SENA agreement, the contracting guidelines in Table 9 help to mitigate forward price risk. The contracting guidelines also serve as an important hedging strategy as

MCE continues to expand its membership over the next several years. Execution of master power purchase and sale agreements with multiple, credit-worthy counterparties in the near term will enable energy purchases through execution of transaction-specific confirmations at the appropriate time.

Capacity Resource Purchases

MCE may engage in purchases or sales of resource adequacy capacity from generation resources that qualify to meet resource adequacy requirements in accordance with CPUC and CAISO rules. Terms may range from one month up to ten years. Capacity is also often bundled with energy and RECs under MCE's renewable energy PPAs.

Procurement Methods and Authorities

MCE may use a variety of procurement methods for energy and capacity products. Authorized methods include bilaterally negotiated agreements, competitive solicitations (request for proposals or "RFP"), the Open Season process, and standard offer approaches, such as MCE's Feed-In Tariff.

Energy procurement authority varies depending upon the nature of the energy product being procured and the financial commitment the purchase entails. The appropriate procurement method and procurement authority are generally defined by the term of the energy product purchase, consistency with an approved resource plan, and whether capital financing is required.

Procurement Methods

For long term purchase commitments, MCE will typically use competitive solicitations which may take the form of an RFP, the Open Season or a similar process where a comparative analysis of proposals is made at a single point in time. An RFP may be used where a specific resource need has been identified, some degree of urgency exists in fulfilling the identified need, sufficient time exists to conduct an RFP, and management believes that an RFP would yield the most competitive outcome. For less urgent procurement needs, the annual Open Season process will typically be used. MCE annually conducts an Open Season where it accepts proposals for renewable power purchase opportunities. MCE evaluates the proposals against each other and in the context of other market information available to MCE and may elect to negotiate PPAs with any number of respondents.

Bilaterally negotiated agreements in response to unsolicited proposals may be used for unique opportunities that are fleeting in nature such that timelines associated with an RFP or the Open Season process would prevent MCE from engaging in beneficial procurement opportunities.

Short and medium term power purchases will typically be negotiated on a bilateral basis or via independent energy brokers, particularly in markets with sufficient market price transparency to ensure competitive procurement outcomes. These markets include 1) system energy at a defined CAISO trading hub for peak, off-peak, or baseload products; 2) unbundled RECs; and 3) short term resource adequacy capacity. This process allows for maximum operational flexibility to manage supply and demand imbalances in an efficient manner.

Procurement Authorities

The MCE Board establishes procurement policies and objectives through adoption of the resource plan. The MCE Executive Officer is authorized to execute certain contracts for energy products that are consistent with the approved resource plan, while other resource commitments require MCE Board pre-approval prior to execution.

For shorter term power purchases, it is appropriate for management to have discretion in contracting, consistent with its responsibilities and expertise in efficiently operating the MCE program. Time is often of the essence in such transactions, and these transactions are unlikely to raise policy considerations that require MCE Board input. For long-term commitments, it is appropriate for the MCE Board to exercise a greater degree of oversight. The various energy procurement authorities are as follows:

Short-term contracts

PPAs (energy, capacity, RECs) with terms of 12 months or less may be entered into on MCE's behalf by the Executive Director. The Executive Director will report all such contracts to the MCE Board on a monthly basis.

Medium-term contracts

PPAs (energy, capacity, RECs) with terms of greater than 12 months and less than or equal to 5 years and which are made pursuant to a MCE Board approved resource plan may be entered into on MCE's behalf by the Executive Director in conjunction with the MCE Board Chair. A committee of the MCE Board will be consulted prior to execution of any medium-term contracts. The Executive Director will report all such contracts to the MCE Board on a monthly basis.

Long-term contracts

PPAs (energy, capacity, RECs) with terms of greater than five years shall require Board approval prior to execution.

Capital Projects and Debt

Contracts associated with MCE ownership of generation assets or the assumption of debt by MCE in support of generation projects or PPAs require MCE Board pre-approval.

Other Energy Procurement

Any procurement of energy products that is inconsistent with or that is not addressed in the adopted resource plan requires MCE Board pre-approval.

Appendix A-1: Load and Resource Tables

Marin Clean Energy Resource Balance										
August, 2014										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Energy Requirements (GWh)										
Retail Load	1289	1595	1721	1730	1738	1747	1756	1764	1773	1782
New Energy Efficiency and Distributed Generation	(16)	(27)	(41)	(54)	(68)	(81)	(95)	(108)	(122)	(135)
Retail Load (Net of EE/DG)	1,273	1,568	1,680	1,675	1,670	1,666	1,661	1,656	1,652	1,647
Distribution Line Losses and Unaccounted For Energy	76	94	101	101	100	100	100	99	99	99
Total Energy Requirements	1,349	1,662	1,781	1,776	1,771	1,766	1,761	1,756	1,751	1,746
Renewable Energy Content (%)										
Light Green	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
RPS Qualifying	29%	29%	29%	29%	29%	29%	33%	33%	33%	33%
Deep Green Participation	3%	3%	3%	4%	4%	4%	5%	5%	5%	6%
Overall MCE Renewable Energy Content (RPS and Voluntary)	52%	52%	52%	52%	52%	52%	53%	53%	53%	53%
Renewable Energy Requirements(GWh)										
PCC 0 (SENA P1)	39	3	-	-	-	-	-	-	-	-
PCC 1 (Bundled, In-State)	154	236	273	339	363	387	411	410	409	408
PCC 2 (Bundled, Firmed and Shaped)	140	162	151	101	73	44	82	82	82	82
PCC 3 (REC Only)	36	54	63	45	48	52	55	55	55	54
Subtotal, RPS Renewable Energy Requirements	369	455	487	486	484	483	548	547	545	543
Voluntary Renewable Energy Certificate Requirements(GWh)										
Light Green Volume	267	329	353	352	351	350	282	282	281	280
Deep Green Incremental Volume	19	25	29	30	32	33	42	43	45	46
Subtotal, Voluntary RECs	286	354	381	382	383	383	324	325	325	326
Conventional Energy Requirements (includes energy w/ unbundled RECs)	1,016	1,262	1,357	1,335	1,335	1,334	1,267	1,264	1,260	1,257
Renewable Resources Under Contract (GWh)										
Product Content Category 0	39	3	-	-	-	-	-	-	-	-
Product Content Category 1	154	356	496	615	564	348	353	358	358	358
Product Content Category 2	120	115	51	-	-	-	-	-	-	-
Product Content Category 3	36	43	-	-	-	-	-	-	-	-
Subtotal, RPS Renewable Resources Under Contract	349	516	547	615	564	348	353	358	358	358
Voluntary RECs Under Contract	125	107	-	-	-	-	-	-	-	-
Open Position, RPS Renewables (GWh)										
Product Content Category 1	1	(120)	(223)	(276)	(201)	40	58	52	51	49
Product Content Category 2	20	47	100	101	73	44	82	82	82	82
Product Content Category 3	(0)	11	63	45	48	52	55	55	55	54
Subtotal, Open Position, Renewables	21	(62)	(60)	(129)	(80)	135	195	188	187	185
Open Position, Voluntary RECs	161	247	381	382	383	383	324	325	325	326
Conventional Resources Under Contract (GWh)	977	984	971	945	25	25	25	25	25	25
Open Position, Conventional Energy (GWh)	39	278	386	390	1,310	1,309	1,242	1,239	1,235	1,232
Total Energy Under Contract (GWh)	1,290	1,457	1,518	1,560	589	373	378	383	383	383
Less Variable Price Contracts (GWh)	(75)	(60)	-	-	-	-	-	-	-	-
Net Open, All Physical Energy (GWh)	135	265	263	216	1,181	1,393	1,383	1,372	1,367	1,363
Total Market Price Contract Coverage (%)	90%	84%	85%	88%	33%	21%	21%	22%	22%	22%

Appendix A-2: Future Load Growth Scenario

Marin Clean Energy Resource Balance										
August, 2014										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Energy Requirements (GWh)										
Retail Load	1289	1595	2151	2162	2173	2184	2195	2206	2217	2228
New Energy Efficiency and Distributed Generation	(16)	(27)	(41)	(54)	(68)	(81)	(95)	(108)	(122)	(135)
Retail Load (Net of EE/DG)	1,273	1,568	2,110	2,108	2,105	2,102	2,100	2,097	2,095	2,092
Distribution Line Losses and Unaccounted For Energy	76	94	101	101	100	100	100	99	99	99
Total Energy Requirements	1,349	1,662	2,211	2,208	2,205	2,202	2,199	2,197	2,194	2,191
Renewable Energy Content (%)	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
RPS Qualifying	29%	29%	29%	29%	29%	29%	33%	33%	33%	33%
PCC 1 Minimum Limits	65%	65%	65%	75%	75%	75%	75%	75%	75%	75%
PCC 2 Maximum Limits	35%	35%	35%	25%	25%	25%	25%	25%	25%	25%
PCC 3 Maximum Limits	15%	15%	15%	10%	10%	10%	10%	10%	10%	10%
Deep Green Participation	3%	3%	3%	4%	4%	4%	5%	5%	5%	6%
Overall MCE Renewable Energy Content (RPS and Voluntary)	52%	52%	52%	52%	52%	52%	53%	53%	53%	53%
Renewable Energy Requirements(GWh)										
PCC 0 (SENA P1)	39	3	-	-	-	-	-	-	-	-
PCC 1 (Bundled, In-State)	154	236	343	427	458	489	520	519	518	518
PCC 2 (Bundled, Firmed and Shaped)	140	162	190	128	92	56	104	104	104	104
PCC 3 (REC Only)	36	54	79	57	61	65	69	69	69	69
Subtotal, RPS Renewable Energy Requirements	369	455	612	611	610	610	693	692	691	691
Voluntary Renewable Energy Certificate Requirements(GWh)										
Light Green Volume	267	329	443	443	442	442	357	357	356	356
Deep Green Incremental Volume	19	25	36	38	40	42	52	55	57	59
Subtotal, Voluntary RECs	286	354	479	481	482	484	409	411	413	414
Conventional Energy Requirements (includes energy w/ unbundled RECs)	1,016	1,262	1,678	1,654	1,656	1,658	1,576	1,574	1,572	1,570
Renewable Resources Under Contract (GWh)										
Product Content Category 0	39	3	-	-	-	-	-	-	-	-
Product Content Category 1	154	356	496	615	564	348	353	358	358	358
Product Content Category 2	120	115	51	-	-	-	-	-	-	-
Product Content Category 3	36	43	-	-	-	-	-	-	-	-
Subtotal, RPS Renewable Resources Under Contract	349	516	547	615	564	348	353	358	358	358
Voluntary RECs Under Contract	125	107	-	-	-	-	-	-	-	-
Open Position, RPS Renewables (GWh)										
Product Content Category 1	1	(120)	(153)	(188)	(107)	141	167	161	160	160
Product Content Category 2	20	47	139	128	92	56	104	104	104	104
Product Content Category 3	(0)	11	79	57	61	65	69	69	69	69
Subtotal, Open Position, Renewables	21	(62)	65	(4)	46	262	340	334	333	332
Open Position, Voluntary RECs	161	247	479	481	482	484	409	411	413	414
Conventional Resources Under Contract (GWh)	977	984	971	945	25	25	25	25	25	25
Open Position, Conventional Energy (GWh)	39	278	707	709	1,631	1,633	1,551	1,549	1,547	1,545
Total Energy Under Contract (GWh)	1,290	1,457	1,518	1,560	589	373	378	383	383	383
Less Variable Price Contracts (GWh)	-75	-60	0	0	0	0	0	0	0	0
Net Open, All Physical Energy (GWh)	135	265	693	648	1,616	1,830	1,822	1,813	1,811	1,808
Total Market Price Contract Coverage (%)	90%	84%	69%	71%	27%	17%	17%	17%	17%	17%



October 13, 2014

TO: Marin Clean Energy Technical Committee

FROM: Greg Brehm, Director of Power Resources

RE: Local Brownfield Solar Project (Agenda Item #09)

ATTACHMENTS: A. Solar Project Development Timeline

Dear Technical Committee Members:

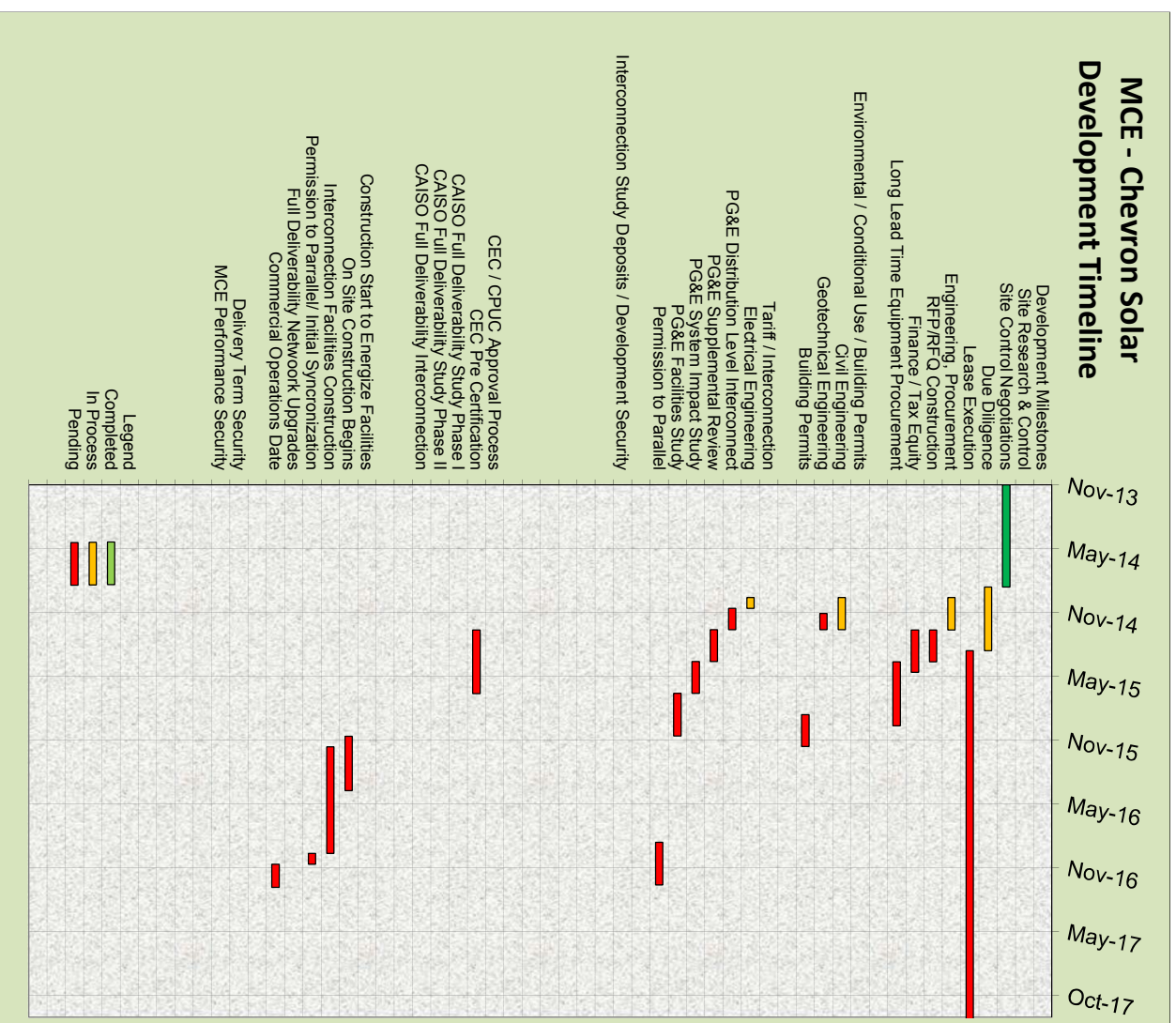
Overview:

In September, MCE executed an option to lease a 60 acre brownfield site at Chevron Products Company (CPC) Richmond Refinery. The initial evaluation of this site by staff yielded no significant development, permitting, or interconnection concerns. The Land Option grants MCE a license to enter, cross, and use the property to investigate the feasibility of developing and operating a photovoltaic solar energy-generation project on the three parcels (the "Project") and an exclusive option and right to enter into a long-term solar energy facility site lease for the property. Prior to commencing our due diligence, MCE will need to provide a development plan to CPC and the regulatory agencies responsible for overseeing the maintenance of the closed land fill upon which the project will be sited.



The following outline describes the major milestones and decision points in the development process as well as a preliminary estimated budget.

MCE - Chevron Solar Development Timeline



Outline Project Development Plan

Initial milestones to move the project forward in pre-development include:

1. Site survey and mapping – Flood risk and wetlands impacts
2. Lease area delineation and Plat maps for recording
3. Geotechnical engineering, soil compaction, health and safety issues related to existing contamination and potential release, suitability borrow site material

Decision to move forward based upon results of initial studies

4. Preliminary site plan development – Site fill requirements and grading plan
5. Equipment specification
 - a. U.S. manufactured modules vs Imports
 - b. Tracker vs fixed array
 - c. Thin film vs Crystalline PV
 - d. Define development budget
6. Electrical engineering
7. Interconnection application
 - a. CAISO transmission level, or
 - b. PG&E distribution level

Decision to move forward based upon initial interconnection studies & cost estimates

8. Structural engineering
9. Kiosk/visitor center design
10. Storm Water Prevention Plan (SWPP)

Development Milestones

11. Environmental – Use permits
12. Interconnection studies – supplemental review
13. Interconnection agreement execution
14. Interconnection deposits
15. Financing plan/ Tax Equity partner
16. RFQ/ RFP for
 - a. Full EPC (Engineering, Procurement, and Construction)
 - b. Engineering and Procurement by MCE and Construction only RFQ/RFP
17. Notice to Proceed

Estimated Pre-development Budget

Civil Engineering	\$ 95,000
Electrical Engineering	\$ 25,000
Interconnection applications/ deposits	\$ 50,000 PG&E - \$150,000 CAISO
Environmental Review	\$ 80,000
Interconnection	<u>\$1,500,000</u>
	\$1,850,000
Building Permits	\$300,000
Equipment & Construction	\$24,000,000

Summary:

The CPC Land Option and Land Lease Agreements provide MCE with an excellent local project development site consistent with its local development goals based on the following considerations:

- The project size and expected energy production would support the future renewable energy requirements of MCE customers.
 - The project is expected to be an MCE owned project.
 - Energy from the project is expected to be competitively priced because of tax equity partnerships and or “utility prepay” financing.
-

Marin Clean Energy Applicant Analysis for the City of El Cerrito

October 7, 2014

SUMMARY

MCE's currently effective policy regarding new membership requires the completion of a quantitative analysis as part of the preliminary evaluative process. The primary focus of the quantitative analysis is to determine the anticipated net rate impacts that would affect MCE's existing customer base following the addition of the prospective new community – in particular, the quantitative analysis must demonstrate that the addition of the prospective new community will result in a projected net rate reduction for MCE's existing customer base; this is a threshold requirement that must be met before proceeding with further membership activities. In addition, the quantitative analysis addresses the projected environmental impacts that would result from offering CCA service to the prospective new community. More specifically, the analysis prospectively determines whether or not the new community will accelerate greenhouse gas (GHG) reductions (beyond those reductions already achieved by MCE's existing membership) while increasing the amount of renewable energy being used within California's energy market.

MCE has been in discussion with the city of El Cerrito periodically since September of 2013. In July of 2014, MCE received a formal letter from the city of El Cerrito requesting consideration as a member of MCE. The electric accounts to be considered as part of this membership request include all accounts located within the city of El Cerrito. On September 4, 2013, the MCE Board of Directors authorized completion of a quantitative membership analysis related to El Cerrito's membership request. This analysis has been completed and the results are discussed below in this summary report.

In general, the quantitative analysis indicated that rate benefits would likely accrue to existing MCE customers following the addition of prospective CCA accounts located within the city of El Cerrito. The additional customer base within El Cerrito would likely result in an approximate 1% rate reduction for MCE customers, including all existing and prospective accounts. The analysis also indicated that including El Cerrito in MCE's membership would increase the amount of renewable energy being used in California's energy market by approximately 16 thousand MWh per year while reducing GHG emissions by an estimated 5 million pounds of carbon dioxide equivalent per year.¹

ANALYSIS

MCE conducted an analysis of the potential new electric customers to estimate the revenues and costs associated with extending MCE service to El Cerrito. The analysis incorporated historical monthly electric usage data provided by PG&E for all current electric customers located within the city of El

¹ GHG emission reduction estimates are based on MCE's actual 2012 emission factor of 373 lbs CO₂e/MWh and PG&E's reported 2012 emission factor of 445 lbs CO₂e/MWh, as released in June 2014: <http://www.pgecurrents.com/2014/02/06/new-numbers-confirm-pge%E2%80%99s-energy-among-the-cleanest-in-nation/>. The projected GHG savings of 72 lbs CO₂e/MWh (based on the difference between MCE's emission factor and PG&E's emission factor) was multiplied by the projected increase in MCE's annual sales volume resulting from the addition of CCA customers located within El Cerrito, a volume approximating 64,000 MWh/year. Note that these projections are subject to change.

Cerrito. The data indicate the potential for over 11,500 new MCE customers with a potential increase in annual electricity sales approximating 80,000 MWh per year. The aggregate peak demand of these customers is estimated at 14 MW.²

Table 1: 2013 El Cerrito Electricity Data

Classification	Accounts	Annual Energy (MWh)	Monthly Per Account (KWh)
Residential	10,778	45,460	351
Small Commercial	654	11,203	1,428
Medium Commercial	60	9,422	13,086
Large Commercial & Industrial	29	13,644	39,207
Agricultural and Pumping	0	0	0
Street Lighting	61	820	1,121
Total	11,582	80,550	580
Peak Demand (MW)	14		

² These figures are for all electric customers of PG&E within the City of El Cerrito. These figures are unadjusted for expected customer participation rates.

As compared to the current MCE customer base shown in Table 2 below, El Cerrito includes proportionately more residential and fewer commercial and agricultural accounts. Those residential accounts make up more than half of the energy usage in El Cerrito. Power usage per customer in all classes is also lower across El Cerrito than in MCE's current communities.

Table2: 2013 MCE Electricity Data (Including Napa and San Pablo)

Classification	Accounts	Annual Energy (MWh)	Monthly Per Account (KWh)
Residential	126,665	730,136	480
Small Commercial	14,126	243,692	1,438
Medium Commercial	1,158	214,681	15,455
Large Commercial	452	259,144	47,771
Industrial	21	134,704	543,253
Agricultural and Pumping	1,466	19,286	1,096
Street Lighting	1,058	15,700	1,237
Total	144,944	1,617,343	930
Peak Demand (MW)			276

In regards to seasonal consumption patterns, El Cerrito electric usage peaks during the winter months consistent with the current MCE load profile. Comparison of Figure 1 and Figure 2 below shows a very similar seasonal consumption pattern between El Cerrito and the existing MCE program.

Figure 1: El Cerrito Hourly Load Profile (KW)

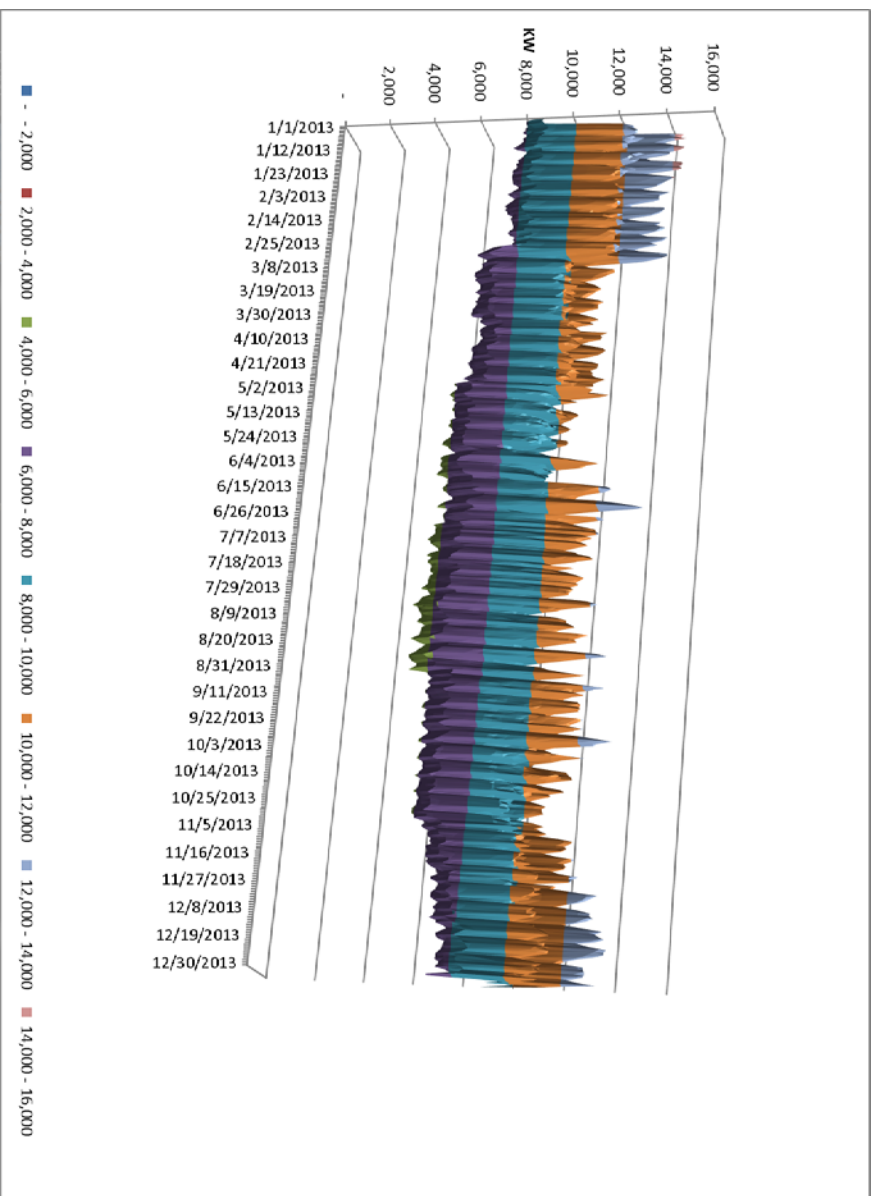
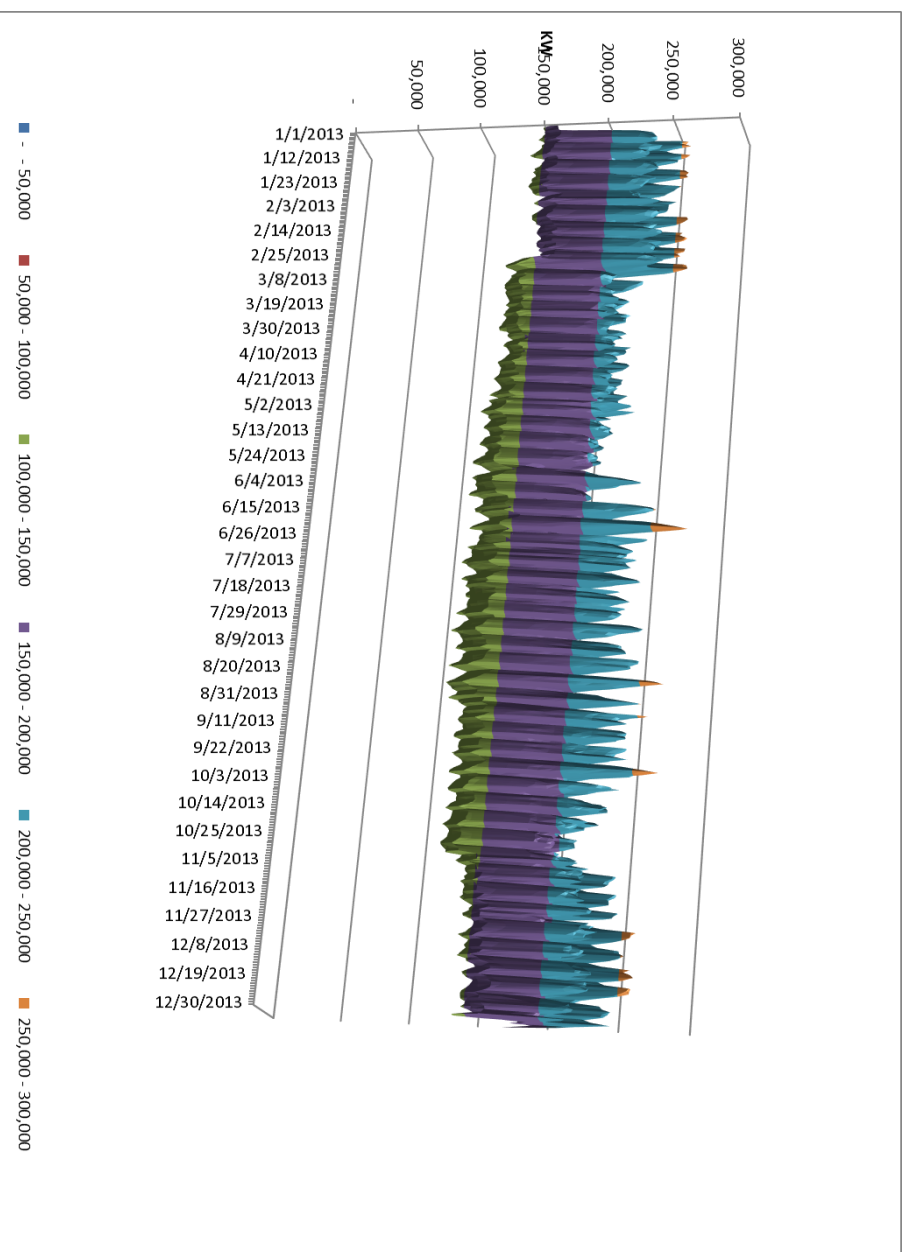


Figure 2: MCE Hourly Load Profile (kW)



RATE IMPACTS

For purposes of the rate impact analysis, it was assumed that service would be initiated to El Cerrito customers in May, 2015 and that 80% of customers who would be offered CCA service would elect to participate in the MCE program. This would equate to an increase in annual MCE electricity sales of 64,440 MWh or approximately 4%. The rate impact was examined beginning with the 2015/2016 fiscal year, with the new service accounts switched to MCE service during the month of May (May 1st through May 31th, depending on each customer's scheduled meter reading schedule).³ It is important to note that any rate/financial impacts were based on wholesale electricity pricing at the time the quantitative analysis was completed. Such pricing is subject to change. Actual rate/financial impacts will be based on wholesale electricity pricing that is offered to MCE at the time of power supply contract execution.

Incremental revenues and costs were quantified for the additional El Cerrito customers, and the revenue surplus (based on the difference between projected revenues and costs directly related to the addition of El Cerrito customers) was also calculated for the year. The surplus is assumed to offset a share of MCE's fixed costs and can be used to reduce overall MCE rates. The incremental cost analysis accounts for ongoing costs related to additional power supplies, customer billing, customer service support (call

³ During the first year, the increase in annual sales volume is slightly lower, estimated at 59,153 MWh, due to the gradual transfer of accounts to MCE service during the first month.

center), and PG&E service fees associated with the additional customers. One-time costs associated with the expansion of MCE to El Cerrito are not included in these figures and are discussed below. Table 3 presents the estimated rate impact for the 2015/2016 fiscal year.

Table 3: FY2015/2016 MCE Rate Impact from El Cerrito

Volume (MWh)	59,153
Revenue	\$ 4,754,861
Costs	
Power Supply Cost	\$ 3,473,502
Billing and Other Costs	\$ 222,734
Total Cost	\$ 3,696,236
Rate Benefit	\$ 1,058,624
MCE Rate Impact	1%

The rate impact analysis indicates that the addition of El Cerrito customers to MCE's total customer base would provide benefits to MCE ratepayers; it is estimated that expanding MCE service to El Cerrito would allow for MCE rates to be 1% lower than without such customers.

Additional costs related to the expansion would be incurred prior to initiation of service to the new customers. These costs would be incurred for regulatory, resource planning and procurement activities that would be necessary to incorporate the new member community and its customers into MCE as well as for communication and outreach to the new customers. The projected implementation costs related to an El Cerrito expansion are expected to be less than the \$250,000 expended in preparation for the expansion to Richmond. This appears to be a reasonable assumption because existing staff (previously added to support the Richmond expansion) and technical resources can be leveraged to support the El Cerrito expansion; the number of prospective customer accounts within El Cerrito is also less than a third of the prospective customer base that was transitioned to MCE service during the Richmond expansion. It should also be noted that the regulatory, resource planning and procurement costs would not be entirely attributable to El Cerrito if there are other new members brought into MCE at the same time. To the extent that other municipalities are contemporaneously added, such activities could be performed jointly rather than at separate times for each new member.

RENEWABLE ENERGY IMPACTS

Renewable energy requirements were calculated for El Cerrito to ensure compliance with the statewide Renewables Portfolio Standard (RPS) as well as the more aggressive MCE renewable energy content standards adopted by MCE. The total renewable energy requirement associated with prospective expansion to El Cerrito would be approximately 32 thousand MWh annually. This renewable energy volume is equivalent to the energy produced by 4 MW of geothermal capacity (or a similar baseload renewable generating technology using a fuel source such as biomass or landfill gas) or approximately 12 MW to 18 MW of solar generating capacity, depending upon location and technology. Including El Cerrito's electric customers in MCE service will increase the amount of renewable energy being used in

California's energy market by approximately 16 thousand MWh annually based on the increased renewable energy procurement targets voluntarily adopted by MCE's governing Board relative to California's then-current RPS mandate (which must be followed by PG&E).

GHG IMPACTS

With regard to projected GHG emission reductions that would result from the expansion of MCE service to El Cerrito, estimates were derived by comparing the most current, validated emission statistics related to the MCE and PG&E electric supply portfolios. With regard to these statistics, PG&E and MCE both recently reported their respective emission statistics for the 2012 calendar year. Due to typical timelines affecting the availability of such information, PG&E's current statistics (focused on the 2012 calendar year) will generally reference data related to utility operations occurring 12 to 24 months prior to the current calendar year. This waiting period is necessary to facilitate the compilation of final electric energy statistics (e.g., customer energy use and renewable energy deliveries) and to allow sufficient time for data computation, review and third-party audit before releasing such information to the public. As noted by PG&E, its 2012 emission factor was determined to be 445 lbs CO₂/MWh. By comparison, MCE's aggregate portfolio emission factor for the 2012 calendar year was determined to be 373 lbs CO₂e/MWh, a difference of 19%.

MCE's 2012 emission factor was derived by using publicly available emission statistics determined by the California Air Resources Board (CARB) for certain unspecified electricity purchases included within the MCE supply portfolio as well as assumed zero carbon emission rates for various renewable energy purchases and deliveries from non-polluting power sources, such as hydroelectric generators. With regard to electricity purchases from unspecified sources, or "system power," as reported on a California retail electricity seller's annual Power Content Label, CARB has assigned an emissions rate of 943.58 lbs CO₂e/MWh. This emission rate can be referenced in section 95111(b)(1) of CARB's February 2014 update to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions: <http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/mrr-2013-clean.pdf>. PG&E appears to have applied a similar factor when calculating emissions associated with unspecified generating sources.

In 2012, MCE's supply portfolio was heavily weighted towards non-carbon emitting resources. In fact, over 60% of MCE's energy supply was attributable to various renewable energy and hydroelectric purchases, which do not emit GHGs (MCE's 2013 and 2014 procurement percentages reflect similar ratios). When determining MCE's aggregate portfolio emission factor, the aforementioned CARB statistic of 943.58 lbs CO₂e/MWh was applied to MCE's system energy purchases, which totaled 225,593 MWh during the 2012 calendar year. All other non-emitting resources were assigned an emission factor of zero. As such, MCE's portfolio emissions for the 2012 calendar year totaled approximately 213 million pounds. This emission total was divided by MCE's aggregate sales volume of 570,144 MWhs, resulting in an MCE portfolio emissions rate of 373 lbs/MWh, for the 2012 calendar year. The following table provides additional detail regarding these emissions computations for MCE's 2012 supply portfolio.

Table 4: MCE 2012 Greenhouse Gas Emissions

2012 Calendar Year	MWh Purchased/Sold	% Total	Emission Rate (lbs CO ₂ e/MWh)	Total Emissions (lbs)
Total Renewable Energy	304,551	53.4%	0	0
RPS – Eligible	166,522	29.2%	0	0
Non-RPS Eligible Renewable	138,029	24.2%	0	0
Zero Carbon	40,000	7.0%	0	0
System Power	225,593	39.6%	944	212,864,133
Totals	570,144	100%	373	212,864,133

To estimate the projected GHG emissions reductions that would likely result from the addition of prospective CCA customers located within the city of El Cerrito, MCE calculated the difference between its own emission factor (373 lbs CO₂e/MWh) and the related metric reported by PG&E (445 lbs CO₂/MWh): 72 lbs CO₂/MWh. This difference was multiplied by the projected increase in annual electricity sales that would result from the addition of El Cerrito's CCA customers (64,440 MWh), resulting in a projected GHG emissions savings related to the transition of El Cerrito's customers to MCE's cleaner electricity supply. The projected emissions savings/reduction related to this service transition (from PG&E to MCE) was determined to be approximately 5 million pounds of carbon dioxide equivalent per year. It is noteworthy that the future emission factors reported by MCE and PG&E will likely differ from the statistics applied in this analysis – this is due to a variety of factors, including planned/unplanned changes in renewable energy procurement (including planned increases in California's RPS procurement requirements), variations in hydroelectric power production (which may change substantially from year to year based on prevailing regional hydrological conditions) and changes/adjustments in the general procurement policies of each service provider as well as many other factors. Also note that MCE has committed to assembling a power supply portfolio that not only exceeds the renewable energy content offered by PG&E but also provides customers with a "cleaner" energy alternative, as measured by a comparison of the portfolio GHG emission rate (or emission factor) published by each organization. As such, MCE plans to continue procuring electricity from non-GHG emitting resources in sufficient quantities to maintain an emission rate that is continually lower than PG&E's.



MCE Membership Expansion

Program Impact Analysis: City of El Cerrito

Marin Clean Energy | October 13, 2014



MCE's Current Customer Base

Key Statistics (2015 – projected with Napa/San Pablo)

- **Customer base \approx 145,000**
- **Projected annual energy sales \approx 1,600,000 MWh**
- **Projected peak demand \approx 275 MW**
- **Projected RPS-eligible procurement: 27%+**
- **Projected total renewable procurement: 50%+**
- **Projected carbon free procurement: 60%+**
- **Projected portfolio emission rate: \approx 370 lbs CO₂e/MWh**

Prospective Addition of El Cerrito

Summary

- July, 2014: MCE received letter expressing membership interest from El Cerrito
- September 3, 2014: MCE Governing Board authorized completion of a quantitative membership analysis
- October 7, 2014: quantitative analysis completed by MCE
- Analytical findings are favorable:
 - **≈1% rate reduction for all MCE customers (existing and prospective) based on current market conditions**
 - **16,000 MWh annual increase in statewide renewable energy consumption**
 - **5 million pound annual GHG reduction**

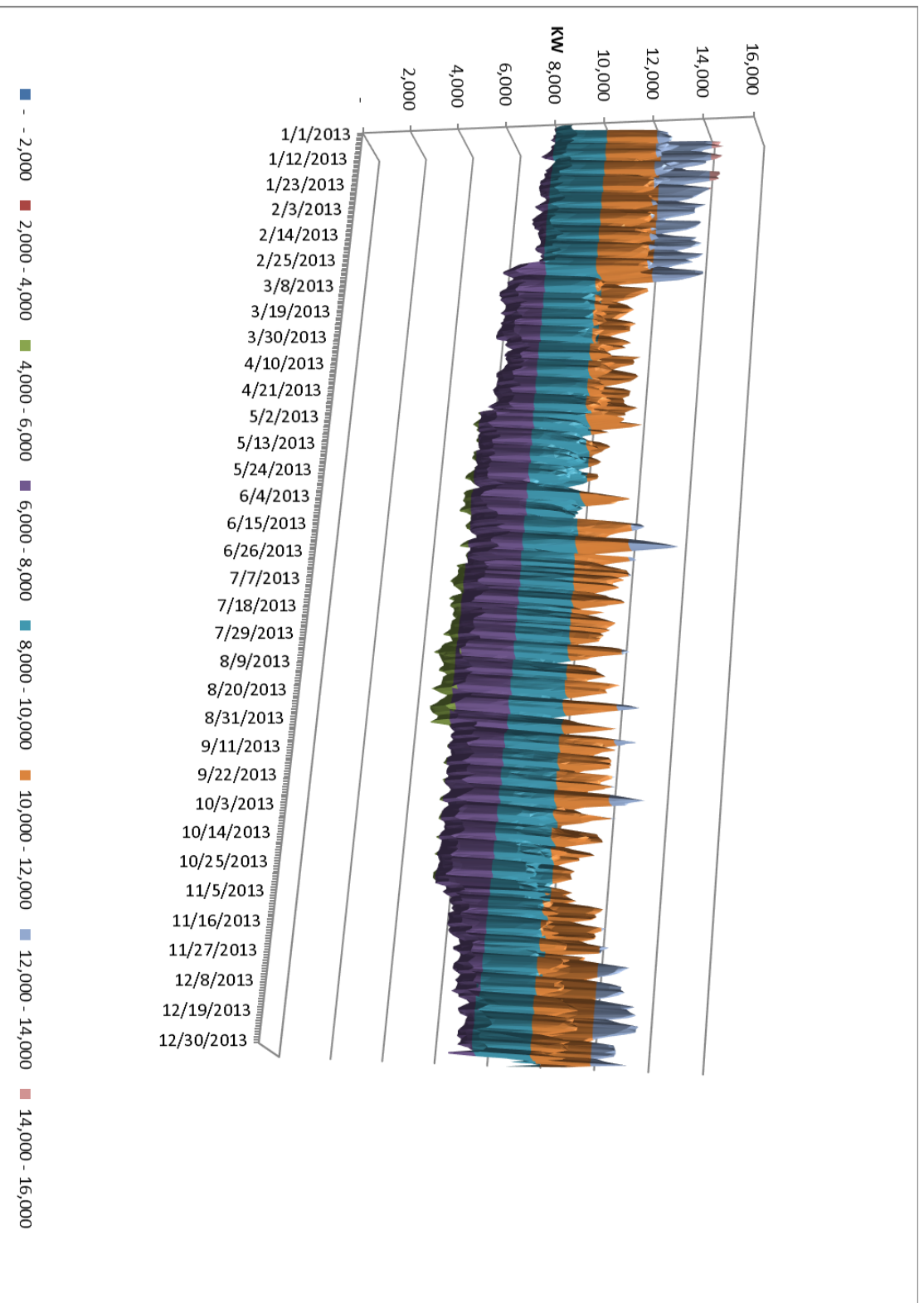
El Cerrito Customer Base

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Large Commercial and Industrial	29	13,644	39,207
Street Lighting	61	820	1,121
Total	11,582	80,550	580
Peak Demand (MW)			14

Key Benicia Statistics

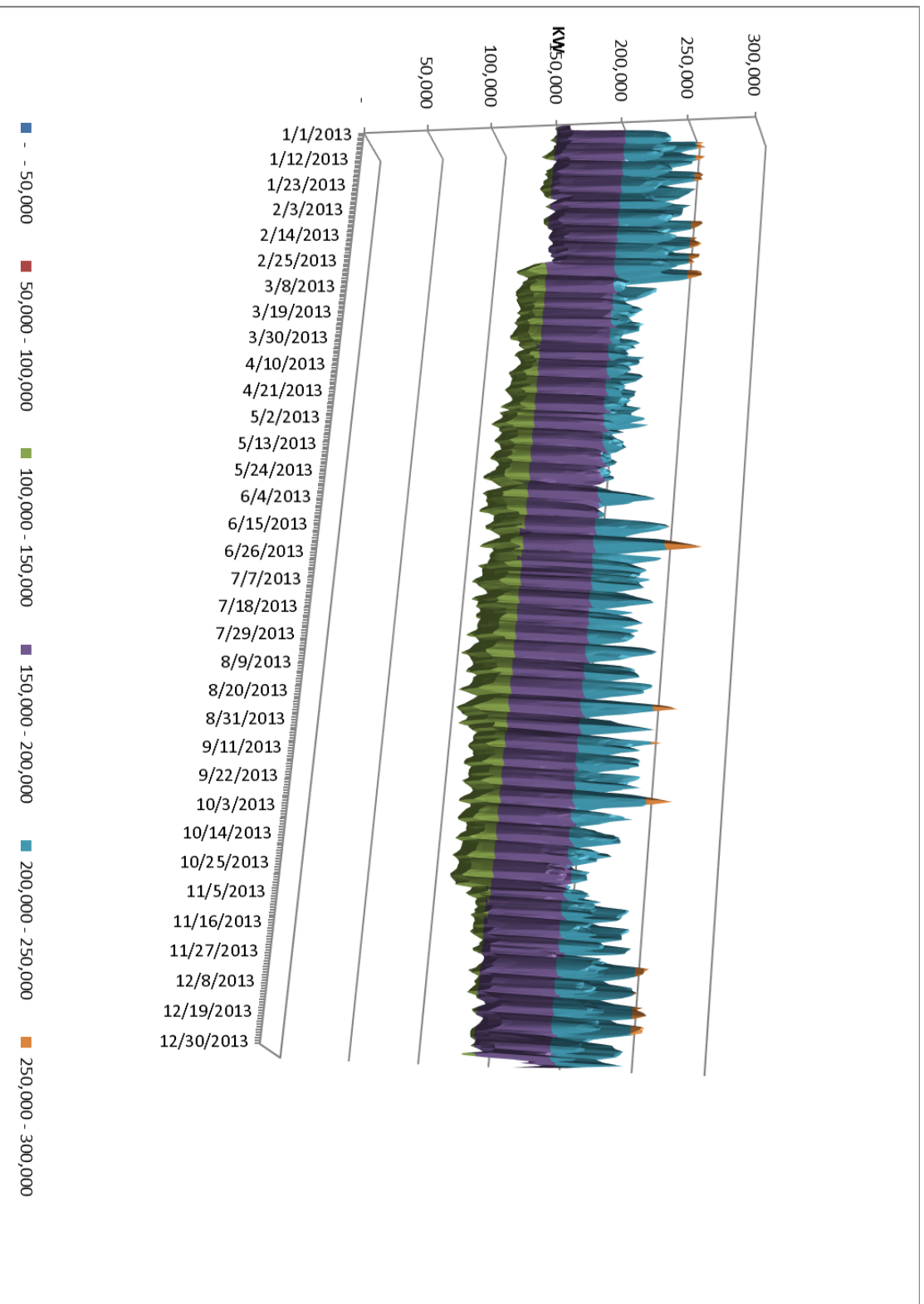
- Approx. 11,500 potential new customers
- **Potential retails sales increase of $\approx 80,000$ MWh/year**
- Aggregate peak demand increase ≈ 14 MW
- Customer mix more weighted toward residential uses than current MCE customer base
- Per account energy use for all sectors comparatively low in El Cerrito
- Average monthly usage (across all accounts) is 38% lower than that of MCE's current customer base: 580 kWh/month vs. 930 kWh/month

EI Cerrito Hourly Load Profile



MCE Hourly Load Profile

Agenda Item #10-Att.: MCE Mbrshp Expansion: Impact Analysis - El Cerrito



Key Assumptions & Projected Outcomes

- Service assumed to commence in May 2015
- Assumed 80% participation rate (bundled + direct access)
- Participatory rate translates to a retail sales increase of **≈59,000 MWh, or approximately 4%**
- Incremental revenue/cost analysis accounts for: additional power supply, customer billing, call center support, PG&E service fees
- Revenue surplus was assumed to offset a share of MCE's fixed costs... which would reduce MCE's overall rates
- Overall rate reduction approximating 1%
- Rate impacts reflect current market conditions – may need updating if City decision is not timely.

Cost & Revenue Summary

Volume (MWh)	59,153
Revenue	\$4,754,861
Costs	
Power Supply Cost	\$3,473,502
Billing and Other Costs	\$222,734
Total Cost	\$3,696,236
Rate Benefit	\$1,058,624
MCE Rate Impact	1%

MCE Multi-Family Energy Efficiency 2016 Proposed Program Design

MCE proposes a customer-oriented Multifamily Energy Efficiency Program that integrates diverse program offerings under one umbrella. The program is designed to maximize investments in a property, reducing greenhouse gas emissions, energy use, and water use. The proposed program will also emphasize an increase in customer satisfaction with the energy upgrade experience, and ultimately drive towards market transformation and declining incentives.

The MCE program would:

- Provide participants with a single point of contact (SPOC) who would serve as a facilitator and participant advocate, helping to guide the property owner through the process from initial contact to project completion;
- Develop an integrated assessment process streamlining multiple program offerings into one customer report;
- Deploy sophisticated customer management software allowing for an ongoing relationship between the property and the program; and
- Develop success metrics based on customer satisfaction and market saturation, helping drive towards a time when public interventions are no longer necessary to support energy efficiency.

The benefits of a SPOC program are:

- **Uniform and Bundled Presentation of Opportunities.** Projects may be more attractive to customers and easier to accomplish when all savings opportunities are bundled together and follow a clear, uniform presentation.
- **Personalized Attention and Follow-Through.** A SPOC delivery model can provide more personalized attention and more follow through to reduce customer confusion and increase project completion rate.
- **Project Phasing.** MCE can remain in contact with participating properties over time and encourage property owners to implement projects in phases.

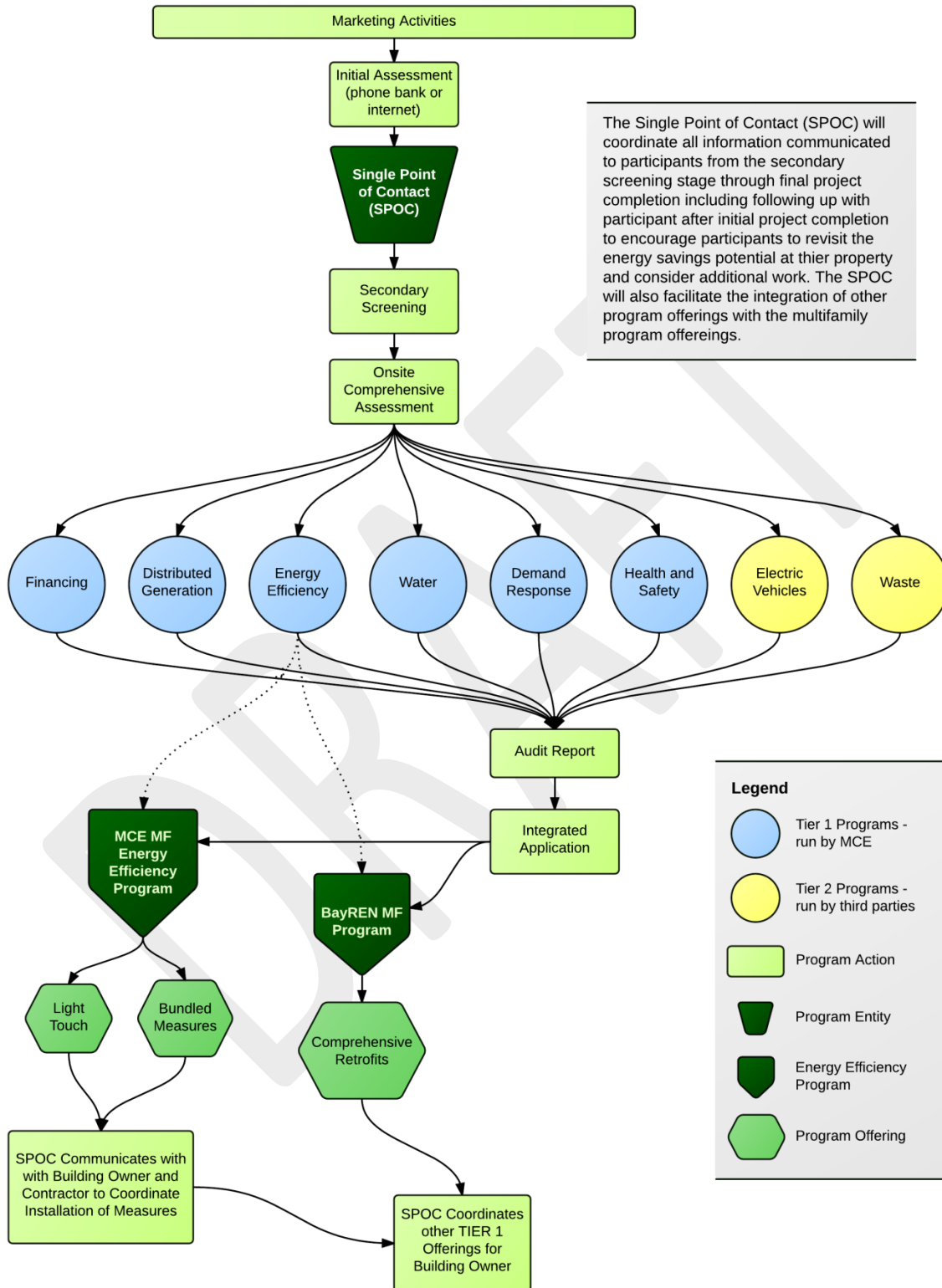
Defining Success

Success of the program will be measured through:

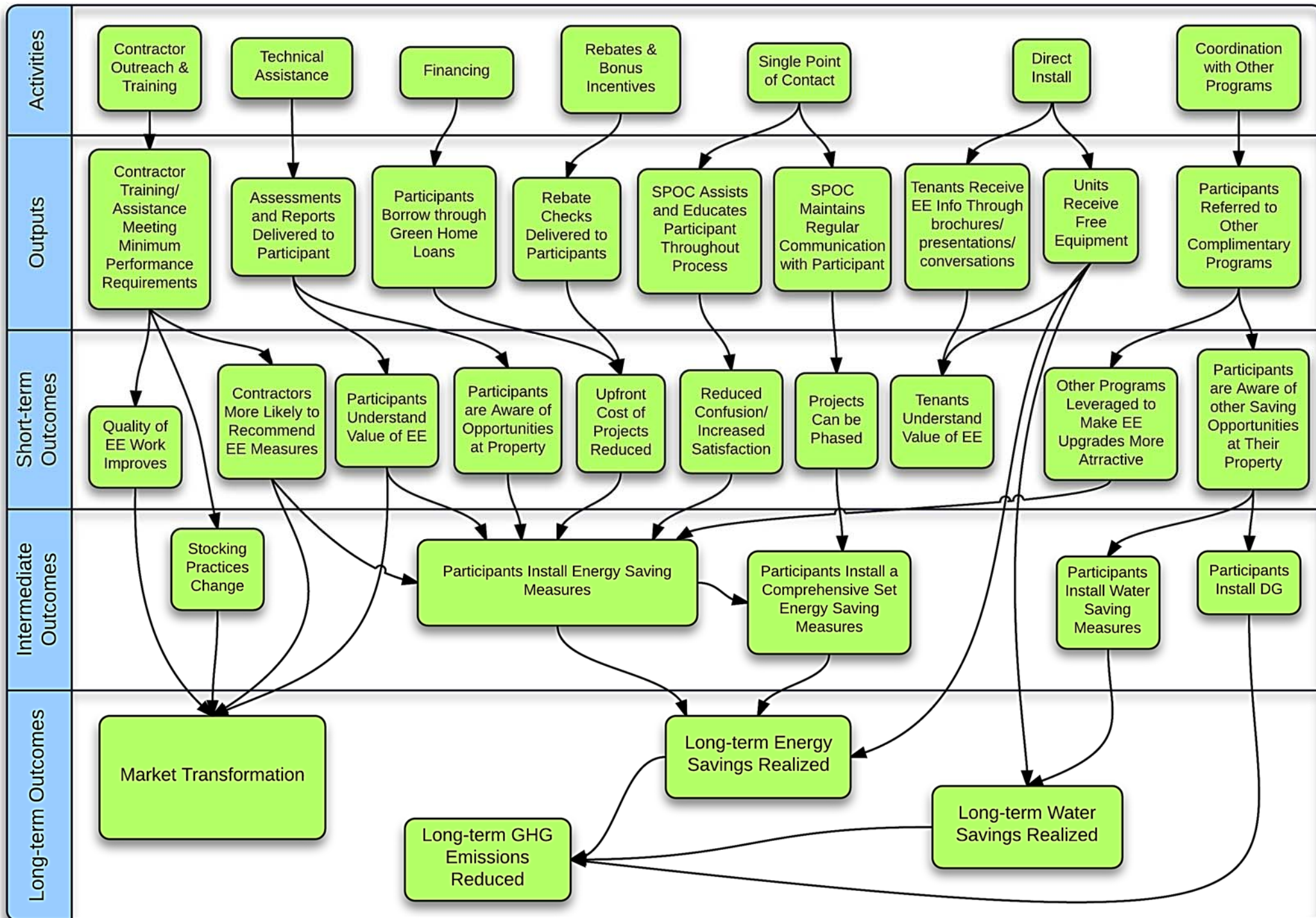
1. Energy Saving Targets
2. Program Performance Metrics
3. Market Transformation Indicators

The program will leverage advanced metering technology, customer satisfaction surveys, and program performance metrics to create an instantaneous feedback loop for monitoring success and addressing program issues. Incentive levels will be tied to market transformation indicators, ensuring declining public interventions over time.

Proposed MCE Multifamily Program Structure



MCE Multifamily Program Logic Model



MCE Single Family Energy Efficiency 2016 Proposed Program Design

MCE proposes a Single Family Energy Efficiency Program that is designed to reduce greenhouse gas emissions through energy and water use reductions. The program offers one-off rebates to customers who have financial or structural barriers that prevent them from participating in the Home Upgrade Program, and incentives and technical assistance for customers who want to upgrade to Zero Net Energy. The program also aims to help the highest energy users reduce their consumption with energy management tools.

The MCE program would:

- Offer financing and rebates to help overcome the upfront cost barrier;
- Provides the highest consuming customers with information about how they use energy and advice for how to reduce their consumption; and
- Provide participants with a single point of contact (SPOC) who would serve as a facilitator and participant advocate, helping to guide the homeowner through the process from initial contact to project completion;

To market the program, MCE will:

- Engage the highest consuming customers through messaging on the Home Utility Report.
- Work with local government in each city or town to promote the program.
- Work with schools and other family-based organizations to promote the Home Assessment and Energy Action Plan offerings.
- Deploy sophisticated customer management software allowing for an ongoing relationship between the participant and the program.

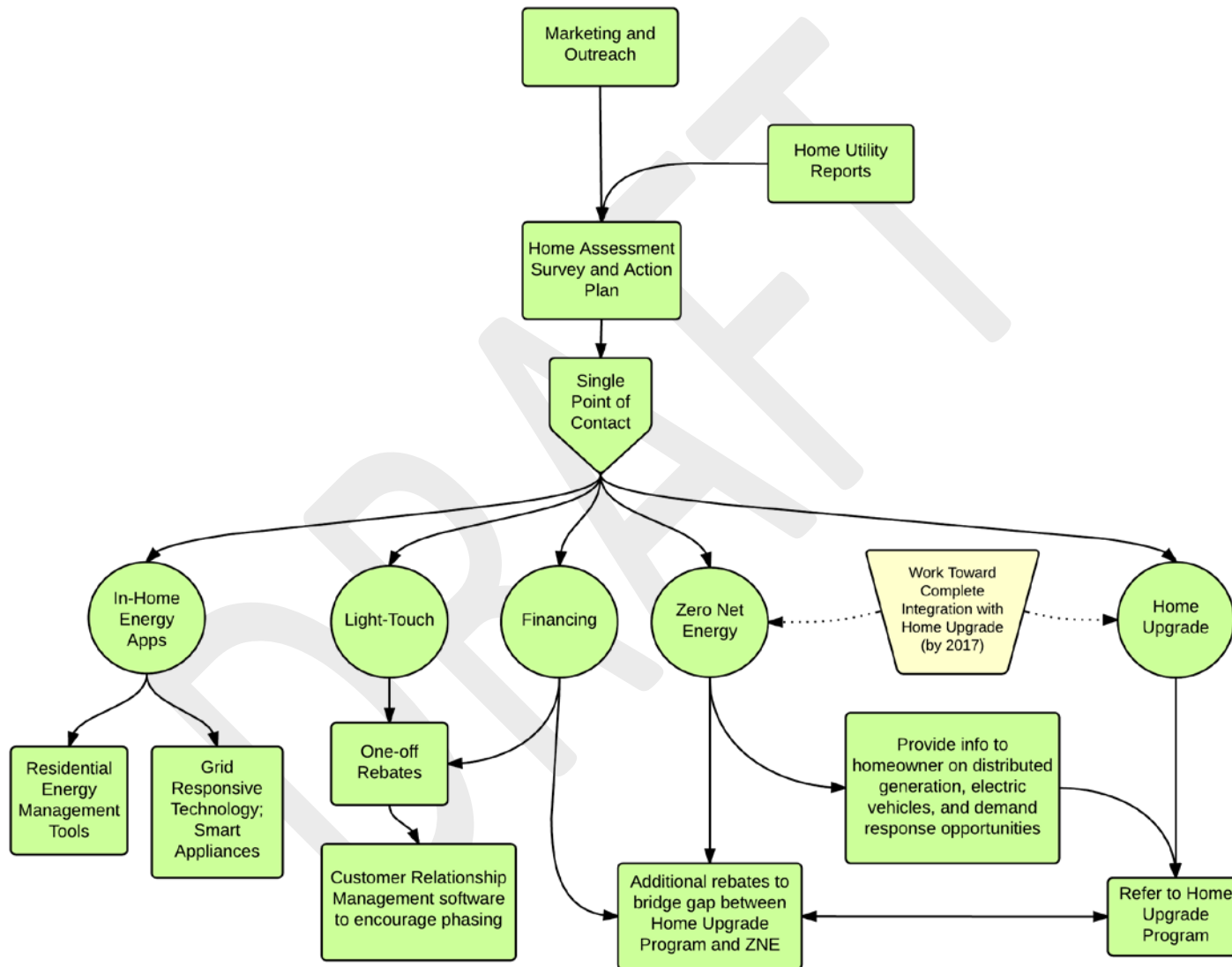
Defining Success

Success of the program will be measured through:

1. Energy Saving Targets
2. Program Performance Metrics
3. Market Transformation Indicators
4. Participant Satisfaction

The program will leverage advanced metering technology, customer satisfaction surveys, and program performance metrics to create an instantaneous feedback loop for monitoring success and addressing program issues. Rebates will be tied to market transformation indicators in order to reduce public interventions over time.

Proposed MCE Single Family Program Structure



Agenda Item #11-Att. D: MCE 2016 Program Design Timeline

MCE 2016 & Beyond Energy Efficiency Program Design Timeline				
ID	Task Name	Start	Finish	Resource Names
1	Project Start	Thu 5/1/14	Thu 5/1/14	
2	Proceeding Dummy Dates	Mon 9/15/14	Tue 7/7/15	Beth,Beckie,Shalini,Meaghan,Martha,Alice,Rafi,Dawn
3	Rules and Scoping Memo on 2016 Portfolio Planning	Mon 9/15/14	Mon 9/15/14	
4	Draft Programmatic Guidance on 2016 Portfolios	Mon 10/6/14	Mon 10/6/14	
5	Final Decision Providing Guidance on 2016 Portfolios	Tue 12/16/14	Tue 12/16/14	
6	2016 PIP Due	Tue 3/17/15	Tue 3/17/15	
7	Final Decision Approving EE Programs	Tue 7/7/15	Tue 7/7/15	
8	Research	Thu 5/1/14	Wed 8/13/14	
9	Expert Workshop	Thu 5/1/14	Thu 5/29/14	Beckie,Meaghan,Allison,Ashley,Emily,Shalini,Dawn,Jody
10	Richmond Workshop	Mon 6/23/14	Mon 6/23/14	Beckie,Meaghan,Allison,Ashley,Jody
11	Marin Workshop	Thu 7/24/14	Thu 7/24/14	Beckie,Allison,Meaghan,Emily,Greg,Pierce,Shalini,Ashley,Jody
12	Napa Workshop	Wed 7/30/14	Wed 7/30/14	Beckie,Meaghan,Allison,Emily,Ben
13	Novato Workshop	Mon 8/4/14	Thu 8/7/14	Beckie,Meaghan,Allison,Emily,Ashley,Alice
14	West Marin	Wed 8/13/14	Wed 8/13/14	Beckie,Ashley,Allison,Emily,Meaghan
15	Analysis	Wed 8/13/14	Mon 9/15/14	
16	Breakout Session Data	Wed 8/13/14	Fri 8/15/14	Alice
17	EE Survey Data (online/paper)	Fri 8/15/14	Tue 8/19/14	Alice
18	Workshop Feedback	Tue 8/19/14	Mon 9/15/14	Alice
19	Updated Program Matrix	Mon 8/18/14	Fri 9/12/14	Meaghan,Rafi
20	Initial Program Design	Tue 8/26/14	Mon 11/3/14	
21	Multifamily	Tue 8/26/14	Thu 9/4/14	
22	Design Description	Tue 8/26/14	Tue 9/2/14	Beckie,Meaghan,Alice
23	Logic Model	Tue 9/2/14	Thu 9/4/14	Alice
24	Single Family/Residential	Mon 9/15/14	Fri 10/10/14	Meaghan,Alice,Beckie
25	Design Description	Mon 9/15/14	Tue 9/30/14	Beckie,Meaghan,Alice
26	Logic Model	Thu 10/9/14	Fri 10/10/14	Alice
27	Commercial/Industrial	Fri 9/26/14	Wed 10/15/14	
28	Design Description	Fri 9/26/14	Fri 10/10/14	Beckie,Meaghan,Alice
29	Logic Model	Mon 10/13/14	Wed 10/15/14	Alice
30	Financing	Fri 10/3/14	Wed 10/22/14	
31	Design Description	Fri 10/3/14	Fri 10/17/14	Beckie,Meaghan,Alice
32	Logic Models	Tue 10/21/14	Wed 10/22/14	Alice
33	Agriculture	Wed 10/22/14	Wed 10/29/14	
34	Design Description	Wed 10/22/14	Fri 10/24/14	Beckie,Meaghan,Alice
35	Logic Models	Mon 10/27/14	Wed 10/29/14	Alice
36	Codes and Standards	Wed 10/8/14	Mon 11/3/14	Alice
37	Codes and Standards Initial Concepts	Wed 10/8/14	Thu 10/16/14	Alice
38	Codes and Standards Strategy Document	Fri 10/24/14	Mon 11/3/14	Alice
39	Workforce Development	Wed 10/8/14	Mon 11/3/14	Meaghan
40	Workforce Development Initial Concepts	Wed 10/8/14	Thu 10/16/14	Meaghan
41	Workforce Development Strategy Document	Fri 10/24/14	Mon 11/3/14	Meaghan
42	Kickoff Meeting with Consultant	Mon 11/3/14	Mon 11/3/14	

Agenda Item #11-Att. D: MCE 2016 Program Design Timeline

MCE 2016 & Beyond Energy Efficiency Program Design Timeline				
ID	Task Name	Start	Finish	Resource Names
43	Written Comments on Program Design and Logic Models	Mon 11/3/14	Fri 11/7/14	Consultant TBD
44	Board Review	Thu 11/6/14	Thu 11/6/14	Beckie
45	Public Comment Period	Mon 11/17/14	Fri 12/19/14	
46	Letters of Support	Mon 11/17/14	Wed 12/24/14	Alex
47	Draft Measure List and Savings Estimates	Fri 11/21/14	Fri 11/21/14	Consultant TBD
48	Review Measure List and Savings Estimates	Fri 11/21/14	Thu 11/27/14	Beckie,Meaghan,Alice
49	Final Measure List and Savings Estimates	Mon 12/1/14	Mon 12/1/14	Consultant TBD
50	Draft Budgets	Fri 11/21/14	Thu 11/27/14	Beckie,Meaghan,Alice
51	Draft E3 Calculators	Thu 11/27/14	Thu 11/27/14	Consultant TBD
52	Review E3 Calculators	Thu 11/27/14	Mon 12/1/14	Beckie,Meaghan,Alice
53	Final E3 Calculators	Mon 12/1/14	Mon 12/8/14	Consultant TBD
54	Board Review	Thu 12/4/14	Thu 12/4/14	Beckie
55	Final Budget	Mon 12/8/14	Wed 12/10/14	Beckie,Meaghan,Alice
56	Draft EM&V Plan	Mon 12/15/14	Mon 12/15/14	Consultant TBD
57	Review EM&V Plan	Mon 12/15/14	Fri 12/19/14	Beckie,Meaghan,Alice
58	Final EM&V Plan	Fri 12/19/14	Thu 1/1/15	Consultant TBD
59	Technical Writer to Develop PIP	Thu 1/1/15	Fri 1/30/15	Consultant TBD
60	Program Design Review (Internal)	Thu 1/1/15	Mon 1/12/15	
61	EE Team Review	Thu 1/1/15	Mon 1/12/15	Beckie,Alice,Meaghan
62	Regulatory Team Review	Thu 1/1/15	Mon 1/12/15	Beth,Shalini,Martha
63	Dawn Review	Thu 1/1/15	Mon 1/12/15	Dawn
64	Board Approval	Thu 2/5/15	Thu 2/5/15	Beckie
65	PIP Submittal	Thu 2/5/15	Fri 2/6/15	Regulatory

Page 2

Informal Bid Solicitation: MCE Energy Efficiency Program Consultant

MCE seeks a consultant to help design the next phase of energy efficiency portfolios within the MCE service territory. MCE seeks a full suite of services to support our 2016 energy efficiency program applications, including technical support, input on program design, and measure identification for each of our proposed programs.

Introduction

Marin Clean Energy (MCE), California's first Community Choice Aggregator, has developed a robust Energy Efficiency (EE) program including offerings in the single family, multi-family and small commercial sectors, with financing available helping to optimize uptake in each program. MCE is well underway with planning for the implementation of the next phase of energy efficiency programs. As the California Public Utilities Commission (CPUC) moves to a longer term rolling portfolio cycle, MCE is considering programs that are more expansive in terms of goals, objectives and expectations, and pursue innovative use of emerging SmartMeter and associated data technologies. See Table 1 for a list of our new and existing programs. Please note that the list of new programs may change. MCE will provide a final list of programs prior to finalizing the contract.

Table 1. New and Existing MCE Programs

Program	Existing Program	New Program	Proposed Program Expansion in 2016
Multi-Family Program	X		X
Small Commercial Program	X		X
Single Family Program	X		X
Financing Program	X		
Industrial Program		X	
Agriculture Program		X	

Objectives

The objective of this work is to develop the following documents for each of MCE's programs to support the 2016 Program Application:

- List of measures to be incented and list of workpapers to be developed
- Cost effectiveness documentation (E3 Calculator)
- Evaluation, monitoring and verification plan

Qualifications

The consultant should be familiar with CPUC regulatory policies and tools, including the DEER database, the E3 calculator, and the workpaper process. MCE also seeks a consultant with the ability to think creatively about designing long term, integrated demand side management solutions with declining incentives tied to market transformation indicators.

Budget

We expect that the budget for this scope of work would be in the range of \$35,000-45,000; however we are open to proposals that include options that exceed this amount provided that budget assumptions are well documented.

Schedule

While the bulk of this work is anticipated before the end of 2014 with limited support into 2015, there is the expectation that the consultant will remain available to respond to questions from MCE, the CPUC, or another regulatory body on materials developed under this scope of work.

Please respond by no later than COB Friday, October 17th, with the following information:

- A budget or range of budget showing services offered and associated costs, broken down by task and/or deliverable
- A schedule
- Resumes of key team members
- References for your organization on similar work in the past
- A statement on whether or not the MCE boiler plate contract language (see attachment 1) will work for your organization.

Please direct questions related to this opportunity to Sarah Estes-Smith, at sestes-smith@mcecleanenergy.org or (415) 464-6028.

Attachment A: Proposed Scope of Work

The scope of work is comprised of the following tasks and each should be detailed in the proposed budget.

Task One: Program Design Support

- 1a. Review proposed program design provided by MCE and provide written input on design and delivery of program.
- 1b. Review MCE's program logic models and provide written comments.

Deliverables:

- Kick-off meeting with MCE staff to discuss program design
- Written comments on program design and logic models

Task Two: Program Savings Impacts

- 2a. Review MCE proposed measure list.
- 2b. Recommend new measures for inclusion and identify workpaper needs.
- 2c. Develop annual savings estimates for each program based on the measures proposed and the specifics of MCE's service area.

Deliverables:

- Final measure list
- List of workpapers to be developed
- Savings estimates, including clearly defined assumptions and supporting documentation, for each program

Task Three: Cost-Effectiveness Calculations

- 3a. Recommend incentive levels.
- 3b. Prepare E3 calculators for each program and the portfolio overall.
- 3c. Make suggestions to refine program design as necessary to achieve a portfolio wide TRC of 1.25.

Deliverables:

- Draft and final E3 calculators

Task Four: Evaluation, Monitoring, and Verification Plan Development

- 4a. Develop EM&V plan for evaluating program impacts to provide a continuous feedback loop. The plan should identify data to be collected on an ongoing basis, a strategy for gathering these data and an analysis plan.
- 4b. Recommend Market Transformation Indicators (MTIs) and a strategy to collect baseline data for each indicator.

Deliverables:

- EM&V plan (intended to be included in PIP) including list of MTIs

Attachment A: Proposed Scope of Work

Task Five: Ongoing Support as Needed

5a. Consultant to remain available to respond to questions by MCE, CPUC, CEC or another relevant body on items developed under this scope of work. Please reserve 10% of total budget for ongoing support.

Deliverables:

- TBD

Table 2. Deliverables and Due Dates

Deliverable	Due Date
Task One	
Kick-off meeting with MCE staff to discuss program design	November 3, 2014
Written comments on program design and logic models	November 14, 2014
Task Two	
Final measure list and list of workpapers	December 1, 2014
Program savings estimates	December 1, 2014
Task Three	
Final E3 Calculators	December 12, 2014
Task Four	
EM&V plan including list of MTIs	January 1, 2015
Task Five	
Ongoing support	Ongoing