



2016 MCE Energy Efficiency Annual Report

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Introduction

Marin Clean Energy (MCE), a local government agency, was formed in December 2008 as the first community choice aggregator in the State of California and began serving customers with retail electricity service in 2010. MCE currently serves approximately 250,000 customers. MCE's service area includes all of Marin and Napa Counties and the cities of Richmond, Benicia, El Cerrito, San Pablo, Walnut Creek, and Lafayette. As a local public agency, MCE is governed by a 17-member Board of Directors representing each of the member communities that it serves.

MCE's mission is to promote the development of energy efficiency programs to address climate change by reducing energy related greenhouse gas emissions and securing energy supply, price stability, energy efficiencies and local economic and workforce benefits.

In support of this mission, MCE applied for funding from the California Public Utilities Commission (CPUC) to launch a portfolio of energy efficiency programs for the 2013-2014 program cycle pursuant to California Public Utilities Code section 381.1 (a)-(d). Under direction from the CPUC, MCE's programs were designed to serve gaps in programs administered by investor owned utilities (IOUs) and hard-to-reach market sectors.¹

MCE's programs were approved in Decision 12-11-015 for 2013-2014 and subsequently approved for 2015-2025 by D. 14-10-046. MCE's energy efficiency budgets increase by 30% to accounts for the increase in our service area by D.16-05-004.

MCE's energy efficiency programs are available to all ratepayers within MCE's service area, regardless of their retail electricity provider.

¹ Decision (D.) 12-11-015 at p. 45-46.

Portfolio Overview

In 2016, MCE administered the following four programs:

- Multifamily
- Small Commercial
- Single Family
- Financing

Multifamily

Program Description

MCE's Multifamily Energy Savings Program provides technical assistance, rebates, a free direct install service for light touch efficiency measures,² and access to other resource conservation programs. The program does not offer a prescriptive measure list; instead MCE works with properties to assess their unique needs and present them with the best energy savings opportunities. The program is available to both affordable and market rate properties with 4 or more units³ located within MCE's service area. A property is not required to be an MCE customer in order to be eligible for participation.

In 2016, the program was implemented in partnership with the Association for Energy Affordability (AEA), Marin City Community Development Corporation (MCCDC), and Rising Sun Energy Center (Rising Sun).

MCE piloted the Single Point of Contact (SPOC) model in the Multifamily Energy Savings Program in 2016. A highly-trained SPOC provides program participants with a uniform and integrated presentation of opportunities across demand side management strategies. The SPOC provides personalized attention, follow-through, and assistance identifying solutions that meet the customers' needs, budget, and levels of readiness for change (thereby minimizing the barriers that often plague projects during the initial phases). Finally, the SPOC plays a critical role in promoting project phasing and presenting financing options.

The Multifamily Program's incentive structure was reformed in 2015 to a point-based system. The point-based system is structured so measures that achieve greater savings or directly impact tenants have the highest point value. Points are converted to a per-unit rebate amount and the total rebate is calculated by multiplying that dollar amount by the total number of treated units. MCE continued to implement this incentive structure in 2016. The point system simplifies communication to program participants and allows property owners to more easily estimate the amount of the program rebate before committing to a project.

² The direct install service is not a standalone service, but is offered to participants in the program.

³ The program will consider 2+ units on a case-by-case basis.

MCE coordinates closely with the Bay Area Regional Energy Network (BayREN) and Pacific Gas & Electric Company (PG&E) to ensure that there is no double counting of savings and to share best practices.

Strategies Employed in 2016

During 2016, MCE deployed the following strategies in its multifamily offerings:

- Partnered with Rising Sun Energy Center to offer a stand-alone Direct Install program (including workforce development and resident education) in MCE's new communities to develop a pipeline of new properties.
- Increased frequency of communications to participants to reduce project conversion time (move properties through the pipeline and get them into rebate reservation sooner).
- Developed Single Point of Contact model by replicating the partnership with Marin Municipal Water District (MMWD).
- Implemented a new software tool for consistent data tracking and reporting.

Program Performance and Major Achievements

- Provided technical assistance to 9,263 units.⁴
- Disbursed \$98,948 in rebates.
- MCE was able to enroll 24⁵ multifamily projects in rebate reservation in 2016; 13 of those projects were completed in 2016 and 12 projects will complete in 2017 or early 2018.
- MCE's Multifamily Energy Efficiency program continued serving low income communities in 2016 with 654 of the 9,263 units touched by the program being low-income.
- Installed free light emitting diodes (LEDs), low-flow showerheads, and faucet aerators in 437 units and scheduled installations in 509 units for 2017.
- Fostered a successful relationship with local water agencies saved residents 1,357,591 gallons of water
- Coordinated workforce development training for workforce entrants or re-entrants:⁶
 - Hosted a customer service training for 23 MCCDC clients,
 - Contracted with Rising Sun for a standalone direct install program that trained and employed 6 local youth, provided 1,369 hours of local on-the-job training, and
 - Trained 12 MCCDC clients for positions on the direct install team, and provided 530 local on-the-job training hours.

⁴ While this is a high number of units compared to past program years MCE engaged a large community with 18 HOAs with over 6,000 units. The property completed common area measures in 2016. MCE will be conducting outreach to all of the HOA boards in 2017 in order to access the residents for in-unit measures.

⁵ Including projects committed in 2016 but with anticipated completion in 2017.

⁶ Workforce re-entrants are trainees with some construction experience, but who are new to energy efficiency and renewable energy.

Program Changes and Improvements for 2017

MCE is planning to implement the following program improvements in 2017:

- Target marketing and outreach presentations to Home Owner Association (HOA) boards, affordable housing developers, property management companies, and property owners.
- Expand the SPOC model to include EV technical assistance and rebates, storm water pollution, prevention, storage, and demand response partnerships.
- Partner with the Green and Healthy Homes Initiative in Marin (GHHI Marin) to coordinate rebates and services to address health and safety and aging-in-place issues at properties in Marin.
- Partner with the City of Richmond's Energize Richmond program to provide additional rebates for properties completing upgrade projects in Richmond.
- Leverage additional resources from the Low-income Families and Tenants (LIFT) pilot program to better serve low-income tenants.

Small Commercial

Program Description

MCE partners with the Marin Energy Watch, the East Bay Energy Watch, and SmartLights (a program of the Community Energy Services Corporation) to implement an energy efficiency program for small commercial customers throughout its service area. Coordination between small commercial direct install energy efficiency program providers in the region reduces customer confusion and program funding overlap.

The small commercial program offers free energy assessments and rebates on lighting, heating, ventilation, and air conditioning (HVAC), refrigeration, food service, and building envelope upgrades. In addition, the program offers customers pre-negotiated contractor discounts on certain measures, project management assistance and post-project quality assurance.

The program is marketed through contractor referrals, door-to-door outreach campaigns, call campaigns, and partnerships with local business groups.

In 2016, PG&E implemented several changes to its small business direct install program. MCE agreed to align its policies and procedures to reduce customer and contractor confusion, and to streamline the billing process for implementers. The changes include:

- Realignment of incentives such that the incentives provided via all channels in PG&E's portfolio match.
- Deemed measures can no longer be included as part of a calculated project.
- Businesses that fulfill two (2) of the Hard-to-Reach (HTR) criteria are eligible for a HTR incentive kicker.

Strategies Employed in 2016

MCE's small commercial program employed the following strategies in 2016:

- Communicated program success stories through case studies of projects to promote program offerings.
- Partnership with Marin Builders Association to help raise visibility with contractors, as contractor program referrals provide the highest conversion rate.
- Close coordination with Marin Energy Watch Partnership and East Bay Energy Watch programs
- Promoted technologies with water-energy savings.
- MCE customer account representatives referred high energy intensity businesses that would be ideal candidates for participation in the program.
- Adjusted implementers' performance incentive to encourage project completion and greater gas savings.

Program Performance and Major Achievements in 2016:

- Completed energy audits at 312 businesses.⁷
- Completed upgrades at 141 small businesses.
- Paid \$85,772 in rebates.

Program Changes and Improvements for 2017

MCE is planning the following program improvements in 2017:

- Strengthen partnerships with cities and counties, especially in new communities.
- Develop business segment-specific case studies and creative marketing collateral.
- Increase training of contractor network to refer projects to the program at key trigger points such as at equipment failure or tenant turnover.
- Leverage partnerships with organizations such as local chambers of commerce to build on the value of trusted messengers.
- Revamp performance incentive for comprehensive measures to encourage contractors and program implementer to target projects with multiple measures (for example, lighting plus HVAC and refrigeration).

⁷ The number of audits includes all those conducted in Marin, Richmond, El Cerrito and San Pablo by the SmartLights program, not just those funded by MCE. As projects are attributed to either the PG&E portfolio or the MCE portfolio at the time of completion, audits reported are those performed under both contracts.

Single Family

Program Description

2016 was a year of transition for MCE's Single Family Program. In June, MCE ended the My Energy Tool offering after determining that it was duplicative with offerings on a statewide level. The second half of the year was spent laying the groundwork for a smart thermostat pilot program.

My Energy Tool

From 2013 to mid-2016, MCE partnered with Planet Ecosystems, Inc. (PEI) to offer an online energy tool ("My Energy Tool"). My Energy Tool helped single-family residential customers to better understand their energy reduction options by generating energy action plans based on their specified objective (e.g., saving money, improving comfort or reducing greenhouse gasses [GHGs]), home characteristics and energy usage. In addition to providing customers with estimated lifetime savings (in dollars and GHGs) for personalized energy saving measures, My Energy Tool connected customers interested in pursuing projects with local qualified contractors, financing options and rebates.

At the time MCE developed the tool, it was an innovative offering that did not exist among the Program Administrators in California. Since then, a common vendor was retained under contract to the statewide Marketing, Education, and Outreach consultant to develop a similar tool available to all ratepayers in California at no additional cost to MCE. This tool rendered MCE's program duplicative and MCE ended the partnership in June of 2016.

Cool California Challenge

MCE partnered with the statewide Marketing, Education and Outreach program to facilitate the participation of cities in our service area in the Cool California Challenge for the 2015-2016 season. The Cool California challenge was a six month long competition among participating cities in the state to incentivize residents to take simple steps to reduce their carbon footprint and better manage energy use. Participating households logged their energy usage and earned points depending on the energy savings within their home, through reduction of vehicle miles driven, as well as points for inviting friends to the Challenge and sharing energy saving tips. The participating cities each received a portion of \$150,000 in prize money based on their total points. The money earned will help fund local sustainability projects.

Customers in participating MCE cities were able to use My Energy Tool as the interface to take part in the Challenge. The collaboration drove additional participants to My Energy Tool and gave MCE customers the option to link their account number to their Cool California Challenge registrations and have points they receive for reducing usage tally automatically.

Seasonal Savings Pilot

In the second half of 2016, MCE focused on getting a Seasonal Savings Pilot Program off the ground. The objective of the Nest Seasonal Savings Pilot is to investigate the potential cost-effective savings in

utilizing smart thermostat technology to remotely modify set points on HVAC equipment. The Pilot launched in January 2017.

Strategies Employed in 2016

In 2016, MCE's single family energy efficiency program used the following strategies:

- Collaborated with the statewide Cool California Challenge to drive traffic to MCE's MyEnergyTool.
- Developed a pilot program to test the impacts of remote thermostat adjustments.

Program Performance and Major Achievements in 2016

- 161 new customers generated Action Plans, which brought the total number of Action Plans created since program launch to 2,144.
- Added 861 new registered users to the My Energy Tool website bringing the total number of users to 3,493.

Program Changes and Improvements for 2017

Some program improvements that are planned for 2017 include:

- Launching the Seasonal Savings Pilot Program.
- Developing a mobile app-based behavior campaign.

Financing

Program Description

MCE's Financing Program offers loans that can be repaid on the customers' energy bill. MCE also serves as the liaison for the Property Assessed Clean Energy (PACE) Open Marketplace in Marin County.

MCE's on-bill repayment (OBR) program is a public/private partnership between commercial banks and MCE to provide a source of funding to non-residential property owners to complete energy efficiency projects on their properties. Third party loans are supported by a credit enhancement known as a loan loss reserve. The loan loss reserve is available to compensate the bank in the event of a loss subject to program limits. MCE provides its partner lending institution with a loan loss reserve of \$547,500 or up to 20% of total program loans.

Loans are available to fund energy efficiency projects that are completed either through the MCE commercial or multifamily rebate programs. Until Q3 2015, MCE offered a single family OBR program. Although that program has closed, MCE and its partner lending institution continue to serve one outstanding single family OBR loan.⁸

⁸ MCE AL-11-E.

Table 1. Multifamily / Commercial Loan Characteristics

Bank Partner	River City Bank
Length of Loan	2-10 years
Interest Rate	5%
Minimum – Maximum Project Size	\$10,000-\$265,000*
Loan Loss Reserve	20%
Security	UCC-1 Fixture Filing

*Larger loans may be considered on a case by case basis.

In addition to offering an OBR program for multifamily and commercial customers, MCE also serves as a liaison for the PACE Open Marketplace in Marin County. PACE financing targets energy efficiency, renewable energy, and water upgrades to residential and commercial buildings. Property owners can finance up to 100% of the project, for up to 30 years, as a tax assessment on their property tax bill. The assessment obligation may be assumed by the new owner upon property sale, and under most leases, can be shared with tenants. In its role as a liaison, MCE assists with lead generation, marketing, data collection, and consumer protection activities.

Strategies Employed in 2016

In 2016, MCE’s financing program employed the following strategies:

- Utilized tables displaying a summary of the financing options available through MCE included with all applicable energy assessment reports provided to customers (Attachment B).
- Continued to work with the County of Marin to offer an open market PACE model to increase the financing options available to residential and non-residential customers. This involved participating in significant PACE expansion and consumer protection activities.

Program Performance and Major Achievements in 2016

- OBR participation continues to be slow. Informal feedback indicates the minimum loan size could be a barrier for commercial customers, and many multifamily property owners have pre-existing preferred financing mechanisms.
- PACE participation is growing, with over \$5 million financed in Marin County through December 2016 (roughly \$3 million energy efficiency, \$2 million renewable energy, and over \$200,000 in water conservation).

Program Improvements for 2017

Program improvements that are planned for 2017 include:

- Increase alignment between financing and incentive program offerings.
- Conduct outreach activities to increase awareness about the program.

Energy Savings

MCE's 2016 portfolio savings are shown below (Table 2).

Table 2. Gross Electricity and Natural Gas Savings and Demand Reduction

Annual Results	Installed Savings
TOTAL 2016 Energy Savings (GWh) - Annual	0.73
TOTAL 2016 Energy Savings (GWh) – Lifecycle	6.17
TOTAL 2016 Natural Gas Savings (MMth) – Annual	0.01
TOTAL 2016 Natural Gas Savings (MMth) – Lifecycle	0.15
TOTAL 2016 Peak Demand savings (MW)	0.12

Savings by Program and End Use

MCE's savings by program are presented in Table 3 below.

Table 3. Gross Savings by Program

Annual Results	2016 Annual Savings		
	Electric (MWh)	Demand (MW)	Gas (therm)
Multifamily	283.10	0.027	9,564
Commercial	447.97	0.091	-647
Total	731.01	0.118	8,917

More than half of the portfolio's electric savings come from the Commercial Program which installed a high number of lighting and refrigeration measures (Table 4). While the Commercial Program achieved some gas savings mainly through food service equipment, most of the portfolio's gas savings come from the Multifamily Program which installed a high number of water heating related measures.

Table 4. Annual Net Savings by End-Use

2016	GWH	% of Total	MW	% of Total	MMth	% of Total
Residential	0.283	38.72%	0.027	23.10%	0.010	107.25%
Appliances	0.008	2.76%	0.001	4.75%	0.000	0.88%

HVAC	0.000	0.01%	(0.000)	0.00%	0.000	0.83%
Lighting	0.145	51.05%	0.010	35.32%	(0.002)	-19.90%
Water Heating	0.123	43.32%	0.016	59.94%	0.007	77.32%
Other	0.008	2.86%	(0.000)	0.00%	0.004	40.88%
Nonresidential	0.448	61.28%	0.091	76.90%	(0.001)	-7.25%
Lighting	0.370	82.53%	0.077	85.40%	(0.002)	-367.49%
Refrigeration	0.078	17.47%	0.013	14.60%	(0.000)	-43.72%
Water Heating	0.000	0.00%	0.000	0.00%	0.002	311.21%
MCE Annual Portfolio Savings	0.73	100%	0.12	100%	0.009	100%

The Multifamily Program did not meet its savings goals in 2016, due in part to the long lead time for multifamily projects. However, when comparing MCE's 2016 savings targets, actual savings and committed⁹ savings (Table 5) the total savings from completed and committed projects exceeds electric savings goals. On average it takes 18 months for a multifamily property to complete an energy efficiency upgrade project. In 2016, 24 properties were put into rebate reservation and 12 of those properties will not finish installation until 2017. One strategy MCE employs to mitigate the uncertainty around long project timing is to implement a phased approach in which a single project is split into smaller sequential projects each with its own completion date, inspection, and rebate payment.

The multifamily program was limited in its ability to install gas savings measures due to the relatively small amount of gas funding it has compared to electric funding.

Table 5. Multifamily Program Incentive Commitments

	2016 Targets ¹⁰	2016 Actual	% of Target (Actual)	2016 Commitments	2016 Actual + Committed	% of Target (Actual + Committed)
Electric savings (kWh)	375,792	283,478	75%	404,893	688,371	183%
Gas savings (therms)	26,046	9,904	38%	2,271	12,175	47%

⁹ MCE committed savings for projects that signed rebated reservation forms in 2016 but aren't expected to complete until 2017.

¹⁰ MCE-AL 16-E Appendix B

Environmental Impacts

The avoided emissions data in Table 6 is calculated using the Cost Effectiveness Tool, developed by the Energy Division of the CPUC.

Table 6. Gross Environmental Impacts

Annual Results	Annual tons of CO2 avoided	Lifecycle tons of CO2 avoided	Annual lbs of NOx avoided	Lifecycle lbs of NOx avoided
2016 Total	420	3,947	90	745

Expenditures

MCE's portfolio expenditures are presented in Table 7.

Table 7. Expenditures

Summary of Portfolio Expenditures	2016 Operational Program Budget	Cumulative Annual Expenditures, 2016	Percent of Portfolio Budget	Percent of Total Annual Expenditures
Administrative Costs	\$104,268	\$103,195	6.57%	8.54%
Incentives	\$519,868	\$185,681	32.77%	15.37%
Marketing/ Advertising/ Outreach Costs	\$72,759	\$16,931	4.59%	1.40%
Direct Implementation Costs	\$889,452	\$859,478	56.07%	71.14%
Total Portfolio Expenditures	\$1,586,347	\$1,208,213	100%	100%

Cost Effectiveness

The cost effectiveness of MCE’s programs is outlined in the table below. The Total Resource Cost (TRC) Test weighs the program’s net benefits against the cost to the program administrator and its customers. The Program Administrator Cost (PAC) Test measures the benefits and costs to the Program Administrator.

The Multifamily Program’s cost effectiveness, while low, is comparable to previous years’ values and to other Program Administrator’s multifamily programs.¹¹ The Commercial Program’s cost effectiveness is lower than in previous years and that can be attributed to DEER database updates, the deemed-must-go-deemed policy, and changes made to the incentive levels to align the program with PG&E program changes as discussed in the Small Commercial section of this report.

Table 8. Cost Effectiveness

Annual Results	TRC Ratio	PAC Ratio
Multifamily	0.24	0.59
Commercial	0.48	0.52
2016 MCE Total (Resource Only)	0.30	0.56
2016 MCE Total	0.27	0.48

¹¹ Itron. “2013-14 Regional Energy Networks and Community Choice Aggregator Programs Impact Assessment” January 2016

Attachment A: Financing Report



Customer On Bill Repayment Report

[Redacted]
[Redacted]
[Redacted]

Site Contact:
[Redacted]
[Redacted]
[Redacted]
[Redacted]
[Redacted]

Site Information	
Survey Date:	6/7/2013
Report Date:	6/18/2013

Project Summary

Total Estimated Cost:	\$62,438
Total Estimated Rebate:	\$6,964
Total Estimated Final Cost:	<u>\$55,474</u>
Estimated Savings:	\$3,885 per year
Loan Principle:	\$55,474
Loan Term:	5 years
Loan Interest Rate*	5.00%
Estimated Monthly Payment:	\$1,048.76
Estimated Interest Paid Over Loan:	\$7,438.23
Estimated Total Cost Over Loan Period	\$62,912

The loan size, length and terms presented are estimates based on a typical On Bill Repayment Loan ("OBR Loan"). Project costs are estimates based on local pricing; savings are estimates and are not guaranteed. The specific terms of an OBR Loan for your project will vary. The OBR Loan program is available to MCE Account holders who are also the legal title holders for commercial and multi-family properties with 5 or more units. Please note that a \$250 non-refundable fee will be assessed by River City Bank to process your OBR Loan request. For more information, refer to <http://mceCleanEnergy.com/ee>

*Rates may be subject to change

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