2017 MCE Energy Efficiency Annual Report

Marin Clean Energy
1125 Tamalpais Ave
San Rafael, CA 94901

energysavings@mcecleanenergy.org

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 customer accounts. 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 28-member Board of Directors representing each of the member communities that it serves. In 2018, MCE is expanding its service territory to include the cities of Concord, Danville, Martinez, Moraga, Oakley, Pinole, Pittsburg, and San Ramon, as well as Unincorporated Contra Costa County. It is estimated after enrollment MCE will have over 450,000 customer accounts.

MCE's mission is to address climate change by reducing energy related greenhouse gas emissions through renewable energy supply and energy efficiency at stable and competitive rates for customers while providing local and economic workforce benefits.

In support of this mission, MCE elected to apply 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 (e)-(f). 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.

MCE applied to administer energy efficiency funds administered by the CPUC pursuant to Public Utilities Code Section 381.1(a)-(d). In D. 14-10-046, the CPUC approved MCE's programs for 2015-2025. MCE's energy efficiency budgets increased by 30% to account for the increase in its 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 2017, 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 four or more units[3] located within MCE's service area. A property is not required to be an MCE customer in order to be eligible for participation.

In 2017, the program was implemented in partnership with the Association for Energy Affordability (AEA), which served as the implementation lead and technical assistance provider, and Marin City Community Development Corporation (MCCDC), which provided direct install services.

MCE's Multifamily Energy Savings Program continued the Single Point of Contact (SPOC) model in 2017. A highly-trained SPOC provided program participants with a uniform and integrated presentation of opportunities across demand side management strategies. The SPOC provided participants with personalized attention, follow-through, and assistance, identifying solutions that met their needs, budget, and levels of readiness for change (thereby minimizing the barriers that often plague projects during the initial phases).

The Multifamily Program's incentive structure was reformed in 2015 to a point-based system. The point-based system is designed so that measures that achieve greater savings or directly impact residents 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 2017.

MCE continued coordinating closely with the Bay Area Regional Energy Network (BayREN) and Pacific Gas & Electric Company (PG&E) through regular meetings, check-in calls, and emails. These practices aimed to avoid customer confusion, ensure that there is no double counting of savings, and to share best practices.

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[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 launched its Low-Income Families and Tenants (LIFT) Pilot Program in October 2017. The goal of the LIFT Pilot Program is to better serve income-qualified multifamily properties that are not currently benefiting from other low-income energy efficiency programs. The Pilot provides comprehensive services to low-income owners and residents and supports fuel switching from gas to electric heat pumps for cleaner and safer energy use. The Pilot also aims to blend incentives with MCE's Multifamily Program, offering rebates that cover a significant portion of total project costs, no-cost energy assessments, energy and water-saving measures for resident units, and technical assistance to solicit contractor bids and develop a comprehensive scope of work.

Strategies Employed in 2017

During 2017, MCE deployed the following strategies in its multifamily offering:

- Increased frequency of communications to participants to reduce project conversion time (move properties through the pipeline and get them into rebate reservation sooner);
- Implemented upgrades to the software tool used to manage the Multifamily Program in order to automate data tracking, reporting and accommodate the needs of the new LIFT Pilot Program;
- Held marketing and outreach presentations and meetings with Home Owner Association (HOA) boards, affordable housing developers, property management companies, property owners and local organizations;
- Employed the Single Point of Contact model by:
    - Partnered with Marin Municipal Water District (MMWD) to install water saving devices and connecting with property owners;
    - Expanded the range of referral services to include EV and solar technical assistance and rebates;
    - Partnered with the City of Richmond's "Energize Richmond" Campaign to provide additional incentives to Richmond property owners in order to cover out of pocket costs for completing energy efficiency upgrades;
    - Continued the partnership with Green and Healthy Homes Initiative in Marin (GHHI Marin) to coordinate rebates and services to address health, safety and aging-in-place issues at properties in Marin;
    - Launched the LIFT Pilot Program to leverage incentives provided by the Multifamily Program and further assist income qualified residents in MCE's service area.

Program Performance and Major Achievements in 2017

MCE accomplished the following program achievements in 2017:

- Provided technical assistance to 8,657 units;[4]
- Disbursed $123,288 in rebates;

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[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 2017.

- Enrolled 17[5] multifamily projects in rebate reservation in 2017. 10 of those projects were completed in 2017 and 7 projects will complete in 2018 or early 2019;
- Provided services to 760 low-income units of the total 8,657 units touched by the program;
- Installed free light emitting diodes (LEDs), low-flow showerheads, and faucet aerators in 117 units;
- Fostered a successful relationship with local water agencies, saving residents 522,297 gallons of water;
- Supported local workforce development initiatives through working with MCCDC's clients to staff MCE's direct install team and provided 297 local on-the-job training hours;
- Hired and trained a local high school student intern to support the program's marketing and outreach efforts;
- Supported local green jobs by funding 1,133 local work hours through implementation contracts;
- Disbursed an additional $960 in rebates through the partnership with Energize Richmond and reserved another $92,594 for projects completing in 2018;
- Through the LIFT pilot program, MCE engaged with 3 new properties (156 units total) to sign rebate reservations in 2018.

Program Changes and Improvements for 2018

MCE is planning to implement the following program improvements in 2018:

- Targeted marketing and outreach presentations to City and County staff in MCE's service area, affordable housing developers, Climate Action committees and other local partners;
- Expand the SPOC model as needed resources are identified by program participants;
- Collect data and best practices throughout the implementation of the LIFT pilot program to better serve income qualified costumers;
- Evaluate and update MCE's current incentive structure to simplify communication to program participants and allow property owners to more easily estimate the amount of the program rebate.

Small Commercial

Program Description

MCE's Small Commercial Direct Install Program offers free energy assessments, bulk pricing for material purchasing, and cash rebates for lighting, heating, ventilation, and air conditioning (HVAC), refrigeration, food service, and building envelope upgrades. In addition, the program offers project management assistance and post-project quality assurance.

[5] Including projects committed in 2017 but with anticipated completion in 2018.

MCE administers this program through a partnership with Marin Energy Watch, East Bay Energy Watch, and Napa County Energy Watch. Coordination between program partners reduces confusion among contractors and customers and eliminates program funding overlap.

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

In 2017, several changes to the program were made to reduce customer and contractor confusion, and to streamline the billing process for implementers. The changes include:

- Measure sunsets, additions, and incentive rate reductions for various technologies;
- Changed incentive amounts to align with incentives provided by other PG&E programs;
- Deemed measures can no longer be included as part of a calculated incentive;
- Businesses that fulfill two of the Hard-to-Reach (HTR) criteria are eligible for a HTR incentive kicker.

Strategies Employed in 2017

MCE's small commercial program employed the following strategies in 2017:

- Close coordination with location Energy Watch Programs (Marin Energy Watch Partnership, East Bay Energy Watch, Napa County Energy Watch) to deliver a streamlined customer offer;
- Communicated program success stories through newsletters and social media to promote program offerings;
- Partnership with Marin Builders Association to help raise visibility with contractors, as contractor program referrals provide the highest conversion rate;
- 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;
- Contract amendments to increase program budget due to strong participation.

Program Performance and Major Achievements in 2017

MCE accomplished the following program achievements in 2017:

- Completed energy audits at 845 businesses; [6]
- Completed energy efficiency retrofits at 231 customer facilities;
- Disbursed $284,970 in rebates;

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[6] The number of audits includes all those conducted under the co-funded Energy Watch Partnership Programs in Napa County, Marin County, and the shared East Bay cities of Richmond, El Cerrito, Walnut Creek, Lafayette and San Pablo. 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.

- Supported local green jobs by funding 1,800 local work hours through implementation contracts.

Program Changes and Improvements for 2018

MCE is planning the following program improvements in 2018:

- Strengthen partnerships with cities and counties, especially in new communities, through targeted marketing campaigns, customer outreach, and close coordination with local government staff, the MCE Public Affairs team, BayREN, and other utility program offers;
- Work to reduce program implementation costs and improve overall cost effectiveness through a pay-for-performance program model;
- Scale incentives to encourage contractors and program implementers to pursue underserved measures, data-supported savings analyses, as well as comprehensive projects that install multiple measures (for example, lighting plus HVAC and refrigeration).

Single Family

Program Description

In January 2017, MCE launched the Seasonal Savings Pilot Program. The objective of the Seasonal Savings Pilot is to measure the cost-effective savings in utilizing smart thermostat technology to remotely modify set points on Heating, Ventilation, and Air Conditioning (HVAC) equipment.

Seasonal Savings Pilot

The Seasonal Savings Pilot employs a software algorithm that offers customers an opportunity to make their heating or cooling schedules more efficient through a series of very small adjustments to the scheduled temperatures over a three-week period. The algorithm results in more energy efficient heating or cooling schedules for the length of the heating or cooling season. Customers are offered to join the program through their thermostat and its mobile app and must opt-in to participate.

In order to best measure the savings impacts of the pilot program, the program was divided into a winter heating season which ran from January 26, 2017 through April 30, 2017; and a summer cooling season which ran from June 26, 2017 through October 31, 2017.

Seasonal Savings Winter 2017

The program makes changes to customers heating schedules, which leads to more efficient heating set points, and a reduction in heating system runtime hours. A total of 7,291 thermostats were identified in MCE service area. The target population was randomly split into 2,035 thermostats in the control group, and 5,256 in the target treatment group; 80% of the target treatment group, qualified[7] to participate,

[7] Customers qualified for the program if the thermostat was online and running a heating schedule.

and 78% of the qualified thermostats had the customer opt to participate. In total, 3,261 thermostats participated in the Seasonal Savings Winter event.

Based on an analysis of set points and run times, gas heated homes that opted to participate are estimated to have saved 15 hours of furnace runtime, which resulted in an average savings of 7.1 therms and 5.7 kWh. In aggregate, the program saved 22,885 therms, and 20,685 kWh.

Seasonal Savings Summer 2017

A total of 4,635 thermostats that controlled central air conditioners were identified in the MCE service area. The target population was randomly split into 1,435 thermostats to the control group, and 3,200 to the treatment group; 57% of the target treatment group, qualified[8] to participate, and 68% of the qualified thermostats had the customer opt to participate. In total, 1,224 thermostats participated in the Seasonal Savings Summer event. The moderate cooling climate led to much lower qualification and opt-in rates than previously experienced in the heating season.

Based on an analysis of the cooling set points and run times, the program achieved and estimated 2.7% savings, translating to 6.9 fewer hours of runtime, or 24 kWh per opt-in customer. The aggregated savings totaled 29,533 kWh.

While the percent savings and participation rate were lower in the summer season than the winter season due to the relatively mild summer weather in MCE's service area, MCE will be expanding the program into our new communities in Contra Costa County in 2018. MCE may see higher summer savings in those new communities due to the difference in climate. MCE will reevaluate the success of the summer season pilot after a second year of implementation in the expanded service area.

Strategies Employed in 2017

In 2017, MCE's Single Family Energy Efficiency Program used the following strategies:

- Launched a pilot program to test the impacts of remote thermostat adjustments

Program Performance and Major Achievements in 2017

MCE accomplished the following program achievements in 2017:

- 3,261 customers enrolled in the Seasonal Savings Winter 2016/17, resulting in 24,073 therms savings;
- 1,224 customers enrolled in the Seasonal Savings Summer 2017, resulting in 29,533 kWh savings.

Program Changes and Improvements for 2018

MCE is planning the following program improvement in 2018:

- Expanding the pilot program to the new MCE service area.

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[8] Customers qualified for the program if the thermostat was online and running a heating schedule.

Financing

Program Description

MCE serves as a liaison for the Property Assessed Clean Energy (PACE) Open Marketplace in Marin County. PACE provides a financing option for 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.

In 2017, MCE launched a project that aims to analyze the performance of PACE projects in Marin County. Leveraging PACE project data collected from PACE providers alongside meter data, MCE is working with Open Energy Efficiency (Open EE) to assess the performance of PACE projects relative to site-specific baselines. The results of these analyses will help the County and MCE relay informed perspectives on both the potential and limitations of PACE within the County.

In previous years, MCE offered a Financing Program that provided loans to be repaid on the customers' energy bill. The on-bill repayment (OBR) program was a public/private partnership between commercial banks and MCE but was retired in early 2017 due to low uptake of the offer. MCE continues to support outstanding loans that were offered through the OBR program.

Strategies Employed in 2017

In 2017, MCE's financing program employed the following strategies:

- Retired the OBR program due to low uptake and to utilize funds to increase incentives in the Multifamily and Small Commercial Energy Savings Programs;
- 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;
- Participated in significant PACE expansion and consumer protection activities.

Program Performance and Major Achievements in 2017

MCE accomplished the following program achievements in 2017:

- Launched a PACE assessment project in collaboration with the County of Marin and Open EE, to better understand PACE project impacts and the potential use-case for meter data in analyzing project performance;
- Maintained the Single Family OBR loan from 2013.

Program Changes and Improvements for 2018:

MCE is planning the following program improvement in 2018:

- Completion of PACE analysis in cooperation with the County of Marin and Open EE

Energy Savings

MCE's 2017 portfolio savings are presented in Table 1.

Table 1. Gross Electricity and Natural Gas Savings and Demand Reduction

Annual Results	Installed Savings
TOTAL 2017 Energy Savings (GWh) - Annual	1.65
TOTAL 2017 Energy Savings (GWh) – Lifecycle	16.10
TOTAL 2017 Natural Gas Savings (MMth) – Annual	0.03
TOTAL 2017 Natural Gas Savings (MMth) – Lifecycle	0.13
TOTAL 2017 Peak Demand savings (MW) - Annual	0.30

Savings by Program and End Use

MCE's savings by program are presented in Table 2.

Table 2. Gross Savings by Program

Annual Results	2017 Annual Savings		
	Electric (MWh)	Demand (MW)	Gas (therm)
Multifamily	153.31	0.02	8,347.24
Commercial	1,453.08	0.27	838.47
Single Family	47.84	0.01	25,263.00
Total	**1,654.24**	**0.30**	**34,448.72**

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 3). Most of the portfolio's gas savings come from the Multifamily Program, which installed a high number of HVAC and water heating related measures.

Table 3. Annual Net Savings by End-Use

2017	GWH	% of Total	MW	% of Total	MMTh	% of Total
Residential	**0.20**	**12.16%**	**0.023**	**7.69%**	**0.03**	**97.57%**

Appliances	0.01	2.88%	0.001	3.59%	0.000	0.44%
HVAC	0.05	23.78%	0.005	21.00%	0.03	75.16%
Lighting	0.11	53.50%	0.004	18.48%	(0.00)	-1.68%
Refrigeration	0.01	2.63%	0.001	3.57%	(0.00)	-0.48%
Water Heating	0.01	5.02%	0.011	49.41%	0.01	21.81%
Other	0.02	12.19%	0.001	3.95%	0.00	4.75%
Nonresidential	**1.45**	**87.84%**	**0.274**	**92.31%**	**0.00**	**2.43%**
HVAC	0.14	9.81%	0.025	8.96%	0.01	953.32%
Lighting	1.03	70.71%	0.200	73.03%	(0.01)	-605.15%
Refrigeration	0.26	17.63%	0.039	14.24%	(0.00)	-248.17%
Other	0.03	1.85%	0.010	3.77%	-	-
MCE Annual Portfolio Savings	**1.65**	**100%**	**0.30**	**100%**	**0.03**	**100%**

The Multifamily Program did not meet its savings goals in 2017, due in part to the long lead time for multifamily projects. However, when comparing MCE's 2017 savings targets, actual savings and committed[9] savings (Table 4), the total savings from completed and committed projects exceeds gas savings goals. On average it takes 18 months for a multifamily property to complete an energy efficiency upgrade project. In 2017, 17 properties were put into rebate reservation and 7 of those properties will not finish installation until 2018 or 2019. 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.

[9] MCE committed savings for projects that signed rebated reservation forms in 2017 but aren't expected to complete until 2018.

Table 4. Multifamily Program Incentive Commitments

	2017 Targets[10]	2017 Actual	% of Target (Actual)	2017 Commitments	2017 Actual + Committed	% of Target (Actual + Committed)
Electric savings (kWh)	415,868	153,314	37%	188,906	342,220	82%
Gas savings (therms)	33,957	8,347	25%	25,736	34,083	100%

Environmental Impacts

The avoided emissions data in Table 5 is calculated using the Cost Effectiveness Tool, developed by the Energy Division of the CPUC.

Table 5. Gross Environmental Impacts

Annual Results	Annual tons of CO2 avoided	Lifecycle tons of CO2 avoided	Annual tons of NOx avoided	Lifecycle tons of NOx avoided
2017 Total	1,013	8,906	197	1,974

Expenditures

MCE's portfolio expenditures are presented in Table 6.

Table 6. 2017 Budget Expenditures

Summary of Portfolio Expenditures	2017 Operational Program Budget[11]	Percent of Portfolio Budget	Cumulative Annual Expenditures, 2017	Percent of Total Annual Expenditures
Administrative	$162,774	6.97%	$114,625	8.31%
Direct Implementation	$1,144,959	49.06%	$859,321	62.28%
Incentives	$952,493	40.81%	$384,722	27.88%
Marketing/ Education/ Outreach	$73,621	3.15%	$21,109	1.53%
Total Portfolio	**$2,333,847**	**100.00%**	**$1,379,777**	**100.00%**

[10] MCE-AL 18-E Appendix B

[11] Includes additional funds from AL 24-E and AL 26-E

In addition to the 2017 program budget expenditures above, there was an additional $23,536 spent in incentives that used 2016 Committed Funds. These funds were distributed to 5 properties in the form of rebates through MCE's Multifamily Program. Table 7 shows budget expenditures that include these 2016 Committed Funds.

Table 7. 2017 Budget Expenditures with 2016 Committed Funds

Summary of Portfolio Expenditures	2017 Operational Program Budget	Percent of Portfolio Budget	Cumulative Annual Expenditures, 2017	Percent of Total Annual Expenditures
Administrative	$162,774	6.97%	$114,625	8.17%
Direct Implementation	$1,144,959	49.06%	$859,321	61.24%
Incentives	$952,493	40.81%	$408,258	29.09%
Marketing/ Education/ Outreach	$73,621	3.15%	$21,109	1.50%
Total Portfolio	**$2,333,847**	**100.00%**	**$1,403,313**	**100.00%**

MCE will be committing $173,859 in electric funds and $220,116 in gas funds for properties that signed MCE's Rebate Reservation form in 2017. In addition, MCE is committing $87,804 in electric funds and $13,464 in gas funds for contracts entered into in 2017. MCE will be committing an additional $14,915 in electric funds and $3,262 in gas funds that will be used for Evaluation, Measurement and Verification (EM&V) purposes.

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.[12]

Table 8. Cost Effectiveness

Annual Results	TRC Ratio	PAC Ratio
Multifamily	0.26	0.55
Commercial	1.17	1.33
Single Family	0.34	0.34
2017 MCE Total (Resource Only)	**0.65**	**0.97**
2017 MCE Total	**0.65**	**0.96**

[12] Itron. "2013-14 Regional Energy Networks and Community Choice Aggregator Programs Impact Assessment" January 2016

2016 Savings and Expense Update

In closing out its 2017 expenses, MCE identified a $5,434 gas savings project that was mistakenly claimed and reported as an electric expense in 2016 when it should have been claimed in 2017 and paid for out of 2017 gas funds. MCE will be returning the expense mistakenly reported in 2016 through the Annual Unspent Funds Advice Letter process and has included the expense in the 2017 totals provided in this report. MCE is stating this discrepancy for transparency and providing updated expenditures and savings from 2016 in the tables below. All numbers that have been updated, due to the error correction, are marked in blue.

Table 1 (2016 Revision). 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	0.13
TOTAL 2016 Peak Demand savings (MW)	0.12

Table 2 (2016 Revision). Gross Savings by Program

Annual Results	2016 Annual Savings		
	Electric (MWh)	Demand (MW)	Gas (therm)
Multifamily	283.10	0.027	8,976
Commercial	447.97	0.091	-647
Total	**731.01**	**0.118**	**8,329**

Table 3 (2016 Revision). 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**	**107.77%**
Appliances	0.008	2.76%	0.001	4.75%	0.000	0.93%
HVAC	0.000	0.01%	(0.000)	0.00%	0.000	0.88%
Lighting	0.145	51.05%	0.010	35.32%	(0.002)	-21.20%
Water Heating	0.123	43.32%	0.016	59.94%	0.007	82.38%
Other	0.008	2.86%	(0.000)	0.00%	0.003	37.00%
Nonresidential	**0.448**	**61.28%**	**0.091**	**76.90%**	**(0.001)**	**-7.77%**
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%**

Table 4 (2016 Revision). Multifamily Program Incentive Commitments

	2016 Targets[13]	2016 Actual	% of Target (Actual)	2016 Commitments	2016 Actual + Committed	% of Target (Actual + Committed)
Electric savings (kWh)	375,792	283,103	75%	404,893	687,996	183%
Gas savings (therms)	26,046	8,976	34%	2,271	11,247	43%

[13] MCE-AL 16-E Appendix B

Table 5 (2016 Revision). Gross Environmental Impacts

Annual Results	Annual tons of CO_2 avoided	Lifecycle tons of CO_2 avoided	Annual tons of NOx avoided	Lifecycle tons of NOx avoided
2016 Total	417	3,878	90	745

Table 6 (2016 Revision). 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%	8.90%
Incentives	$519,868	$180,247	32.77%	15.54%
Marketing/ Advertising/ Outreach Costs	$72,759	$16,931	4.59%	1.46%
Direct Implementation Costs	$889,452	$859,478	56.07%	74.10%
Total Portfolio Expenditures	**$1,586,347**	**$1,159,851**	**100%**	**100%**

Table 7 (2016 Revision). Cost Effectiveness

Annual Results	TRC Ratio	PAC Ratio
Multifamily	0.24	0.59
Commercial	0.48	0.52
2016 MCE Total (Resource Only)	**0.28**	**0.48**
2016 MCE Total	**0.28**	**0.47**