

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

Application of Southern California Edison Company (U338E) for Approval of Energy Efficiency Rolling Portfolio Business Plan.	Application 17-01-013 (Filed January 17, 2017)
Application of San Diego Gas & Electric Company (U902M) to adopt Energy Efficiency Rolling Portfolio Business Plan Pursuant to Decision 16-08-019.	Application 17-01-014 (Filed January 17, 2017)
Application of Pacific Gas and Electric Company for Approval of 2018-2025 Rolling Portfolio Energy Efficiency Business Plan and Budget (U39M).	Application 17-01-015 (Filed January 17, 2017)
Application of SOUTHERN CALIFORNIA GAS COMPANY (U904G) for adoption of its Energy Efficiency Rolling Portfolio Business Plan and related relief.	Application 17-01-016 (Filed January 17, 2017)
In the Matter of the Application of Marin Clean Energy for Approval of its Energy Efficiency Business Plan.	Application 17-01-017 (Filed January 17, 2017)

**COMMENTS OF MARIN CLEAN ENERGY ON
ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENT ON
ENERGY EFFICIENCY BUSINESS PLAN METRICS**

Michael Callahan
Regulatory Counsel
Marin Clean Energy
1125 Tamalpais Avenue
San Rafael, CA 94901
Telephone: (415) 464-6045
Facsimile: (415) 459-8095
E-Mail: mcallahan@mceCleanEnergy.org

May 22, 2017

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I. INTRODUCTION

Marin Clean Energy (“MCE”) submits the following comments in response to the *Administrative Law Judge’s Ruling Seeking Comment on Energy Efficiency Business Plan Metrics* (“Metrics Ruling”) filed May 10, 2017. MCE provides answers to the questions directed to all prospective program administrators (“PAs”).

II. BACKGROUND

MCE is the only Community Choice Aggregator (“CCA”) energy efficiency (“EE”) PA authorized by the California Public Utilities Commission (“Commission”). MCE filed an application with a business plan on January 17, 2017. The Metrics Ruling calls for each PA to provide comments by May 22, 2017.

III. QUESTIONS APPLICABLE TO ALL PROSPECTIVE PROGRAM ADMINISTRATORS

A. Business Plans Overall

1. Demonstrate in a quantitative way, via table or graphic, how the proposed metrics cumulatively are useful and effective indicators of each PA’s likely achievement of targeted energy efficiency program uptake and overall savings goals.

MCE provided logic models and metrics tables for each sector in the business plan application. The logic models (Attachment A to these comments) are a qualitative description of the portfolio structure and provide context for the intervention strategies and associated metrics. The metrics tables (Attachment B to these comments) include proposed intervention strategies and associated metrics. These intervention strategies are designed to address specific market barriers to program uptake and increase sector level participation and savings.

Each intervention strategy has at least one metric and each metric has quantitative targets for short, mid, and long term success. These metric targets demonstrate the planned achievements in program uptake for each intervention strategy. MCE has also proposed sector and portfolio targets for energy savings located in Appendix A of the business plan¹ (Attachment

¹ MCE EE Business Plan, Appendix A: Placemats, at p. 135-136. Available at <https://www.mcecleanenergy.org/2017-EE-Business-Plan>.

C to these comments). Together the logic models, intervention strategies tables, and energy savings targets qualitatively demonstrate the likely achievements in program uptake and energy savings.

Each proposed metric is intended to provide insight to one aspect of the portfolio and no single metric can speak to overall success. Progress toward metric targets must be considered in concert with progress toward savings targets and cost-effectiveness achievements in order to track overall progress. The following are descriptions from a sampling of MCE's proposed sector metrics to illustrate the specificity of application for these metrics:

- a. **Number of Repeat Participants in the Single Family Sector:** This metric tracks the effectiveness of the single point of contact approach to reduce customer confusion, clearly identify opportunities, and create savings from following up over time. Repeat participation will lead to deeper energy savings at each property and greater overall savings.
- b. **Percentage of Market Rate Property Owners Completing Both Common Area and In-Unit Measures in the Multifamily Sector:** This metric measures the ability to address a preference of property owners to install common area measures over in-unit measures because owners do not want to disturb tenants. If MCE's efforts are successful in mitigating this tendency, for example through developing long-term turnover upgrade plans, more properties will install both in-unit and common area measures. The deeper retrofits will result in more savings per property and higher overall program savings.
- c. **Number of Customers Participating in Energy Efficiency Programs in the Industrial Sector:** This metric measures the program reach to industrial

customers. The industrial offerings are new to MCE's portfolio; any additional participation from customers will result in greater program enrollment and energy savings.

- d. **Number of Customers Who Receive Technical Assistance in the Agricultural Sector (percent of total accounts):** This metric is intended to measure the program penetration for agricultural customers. Increasing the proportion of customers receiving technical assistance is expected to increase the number of completed agricultural projects and result in greater savings.
- e. **Increase in Participation in Historically Under-Participating Regions in the Commercial Sector (percent of market):** This metric tracks the success of enrollment campaigns and marketing to areas that have historically low participation rates. Successful enrollment and marketing campaigns will engage new participants that otherwise would have lacked awareness and not participated in the commercial offerings. These new participants will undertake new efficiency projects and increase energy savings.

2. Provide the number of multi-family units and multi-family properties in your respective geographic areas.

MCE does not have perfect insight into the proportion of multifamily customer accounts within its service area. MCE has 272,982 residential accounts within its service area. The account information does not include an identifier for whether those customers reside in single family homes or on multifamily properties. In order to approximate the proportion of multifamily customers, MCE infers the population from a statewide average. The proportion of single family

customers to multifamily customers in California is approximately two-thirds to one-third.² Applying that ratio to the accounts within MCE's service area results in an approximation of 90,993 multifamily accounts. MCE assumes that the number of multifamily units exceeds the estimate of multifamily accounts because some multifamily accounts provide service to multiple units through a master meter.

It was infeasible for MCE to determine a reliable approximation for the number of multifamily properties within its service area. This analysis is frustrated by two significant confounding variables. First, multifamily properties vary in metering infrastructure with some properties receiving service through a single master meter and others through sub metering to each unit. Second, multifamily units on a single property may not all share the same street address. Sorting through the data would be a laborious task and is unlikely to produce an accurate estimate. The unreliable nature of an estimated multifamily property count is outweighed by the cost associated with developing such an estimate.

² California Energy Efficiency Strategic Plan (January 2011 Update), at p. 9. Available at <http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=5303>.

IV. CONCLUSION

MCE thanks Commissioner Peterman, Administrative Law Judge Fitch, and Administrative Law Judge Kao for their thoughtful consideration of these comments.

Respectfully submitted,

/s/ Michael Callahan

Michael Callahan
Regulatory Counsel
Marin Clean Energy
1125 Tamalpais Avenue
San Rafael, CA 94901
Telephone: (415) 464-6045
Facsimile: (415) 459-8095
E-Mail: mcallahan@mceCleanEnergy.org

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**Attachment A:
Logic Models
(excerpted from MCE EE Business Plan)**

Figure 16. Single Family Program Logic Model

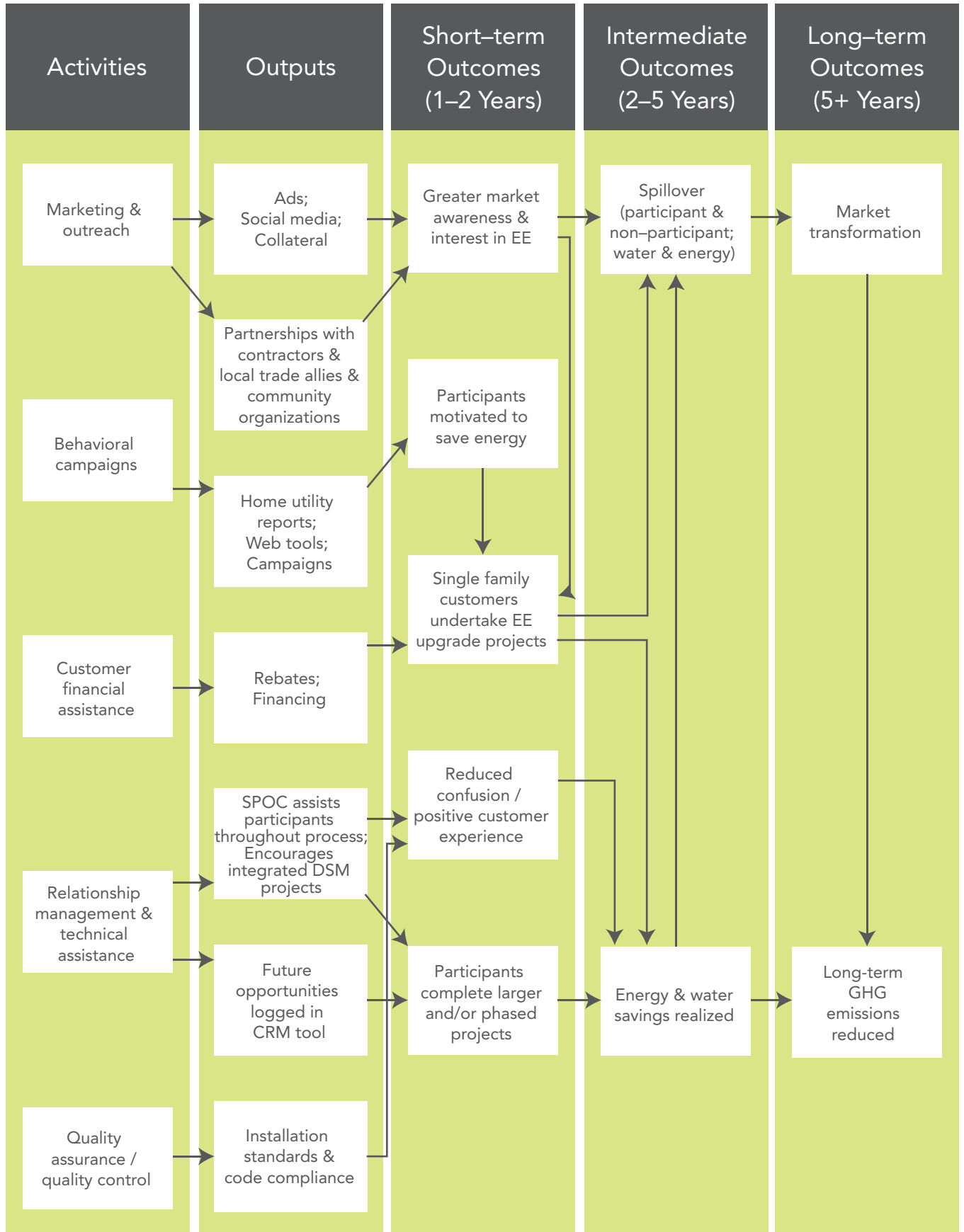
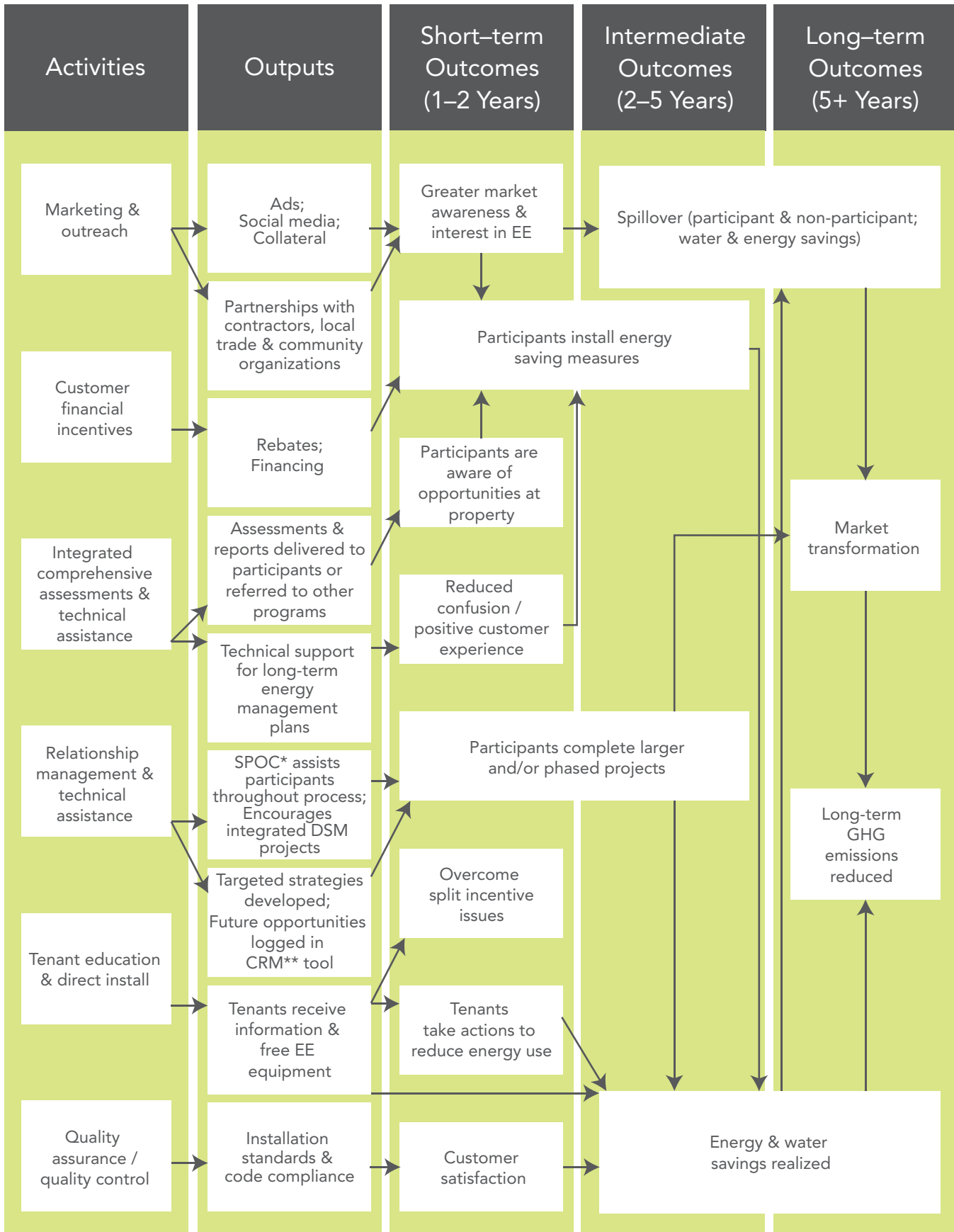


Figure 20. Multifamily Program Logic Model



* SPOC = Single Point of Contact

** CRM = customer relationship management

Figure 24. Industrial Program Logic Model

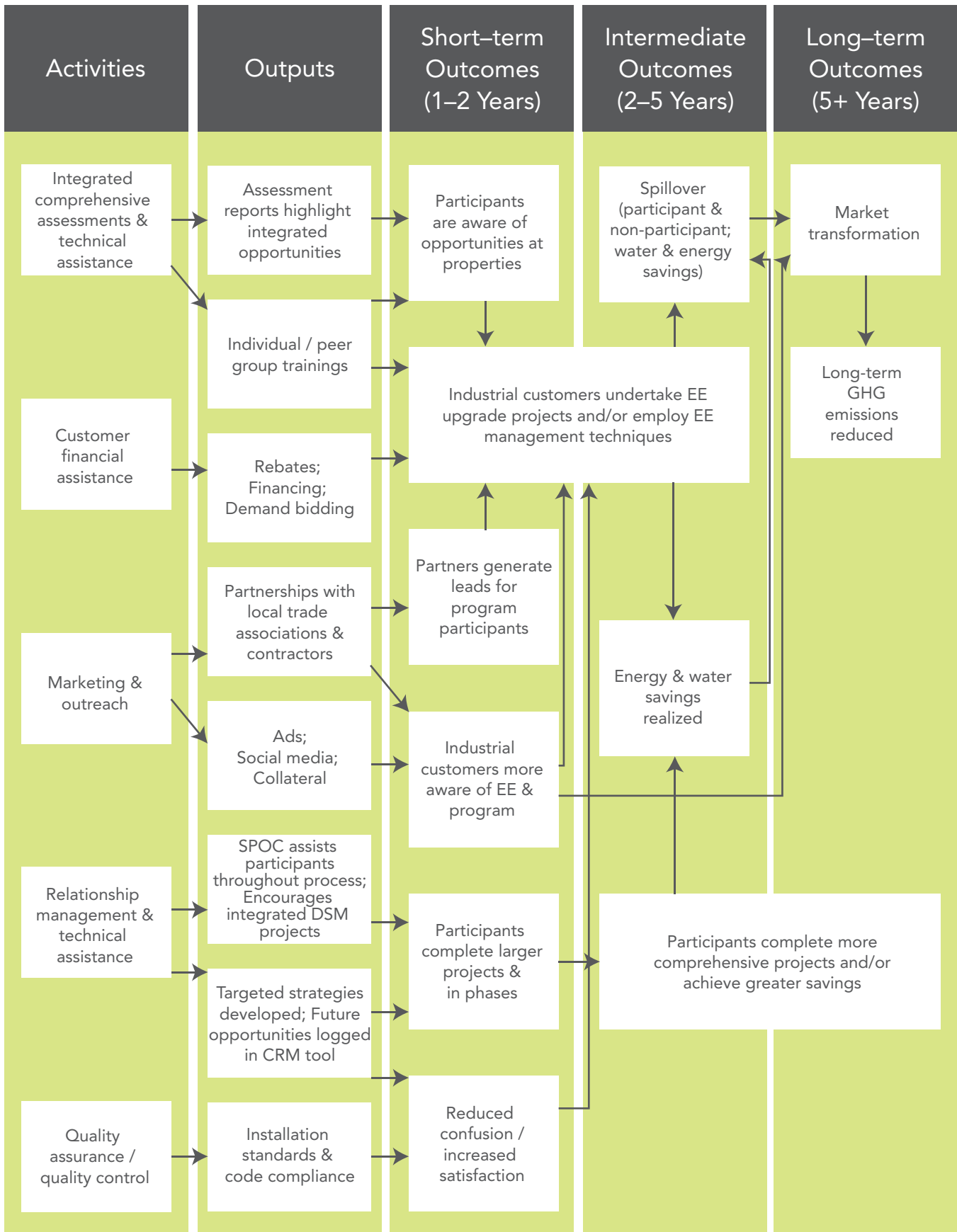
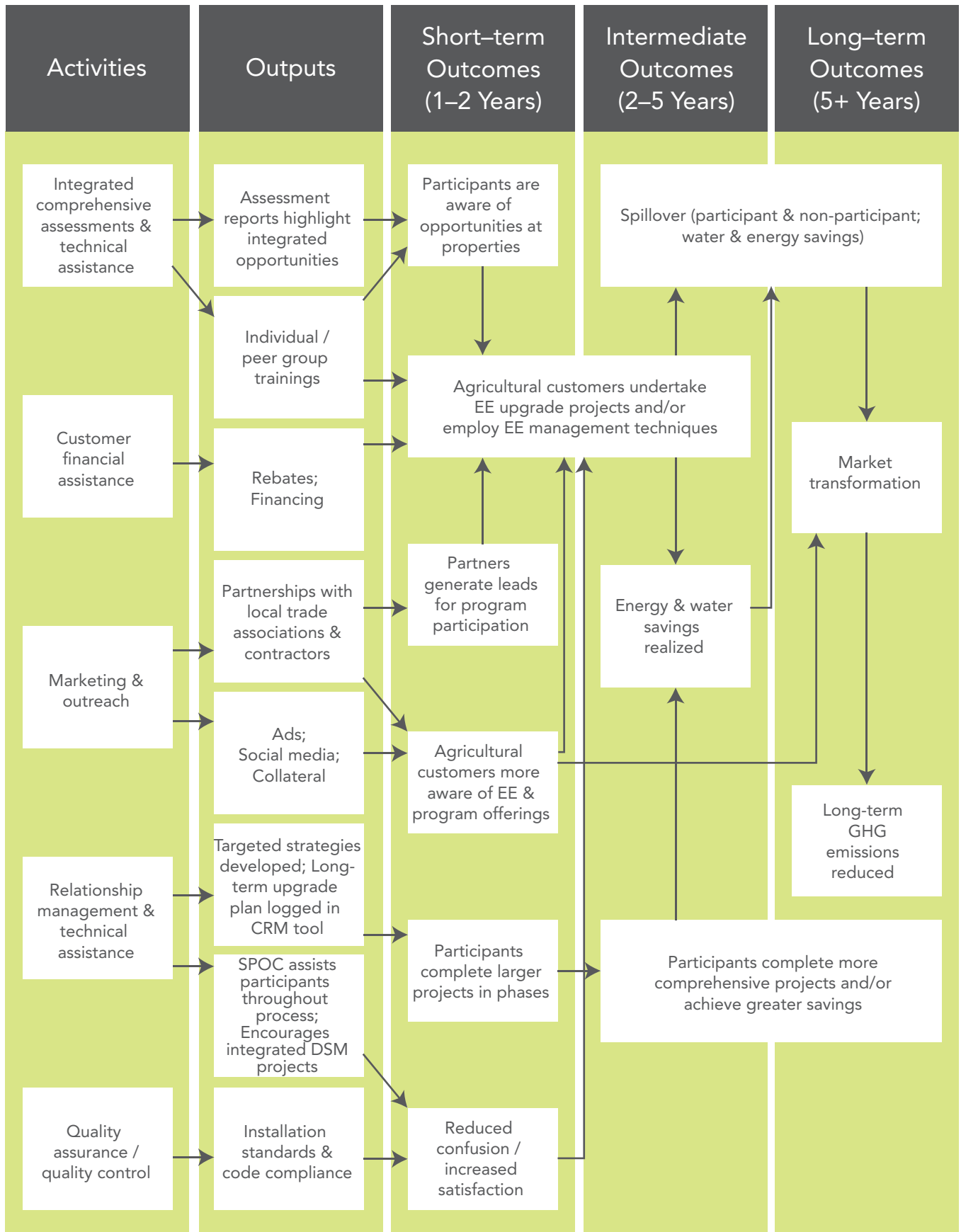


Figure 26. Agricultural Program Logic Model



MCE

Figure 29. Commercial Program Logic Model

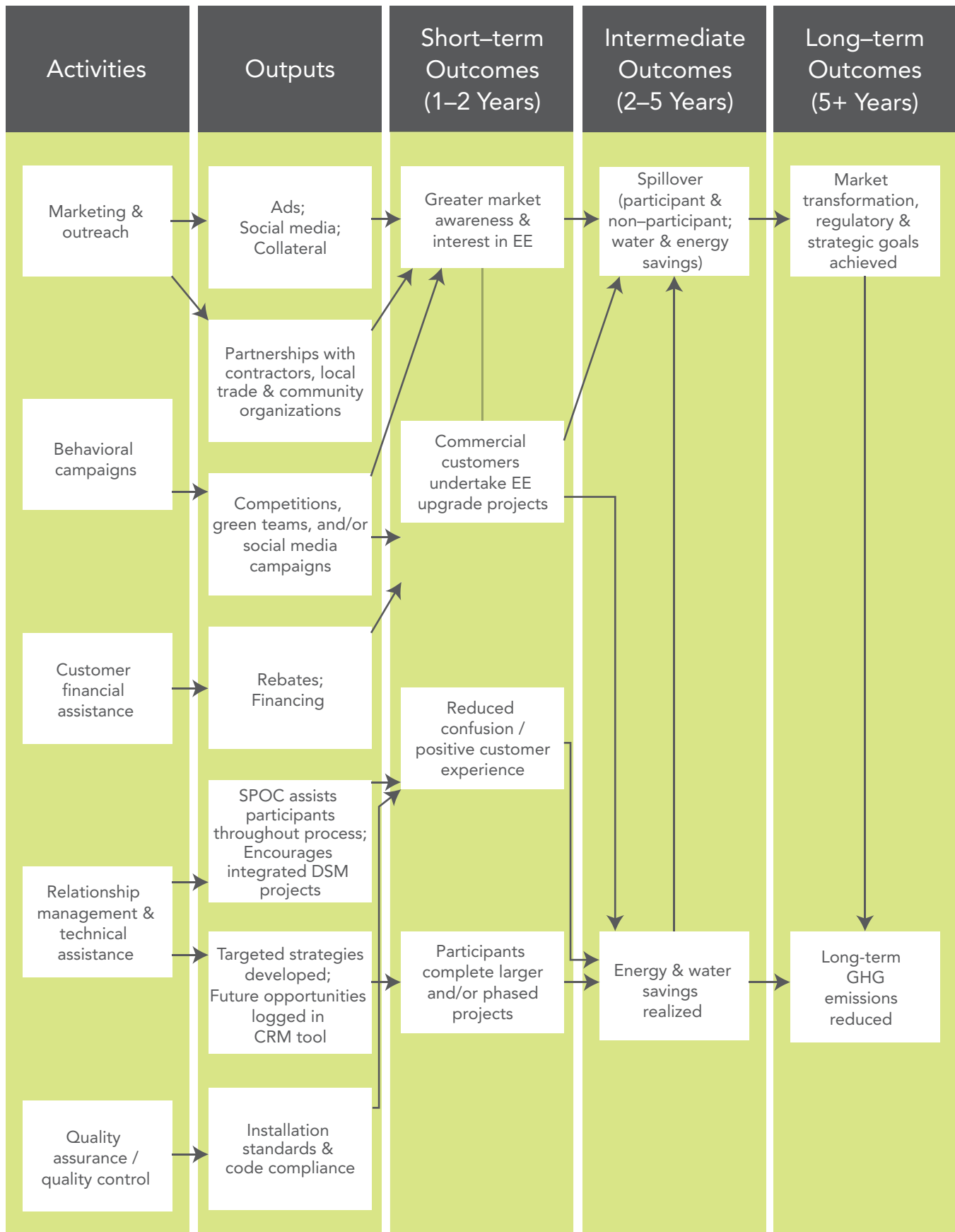
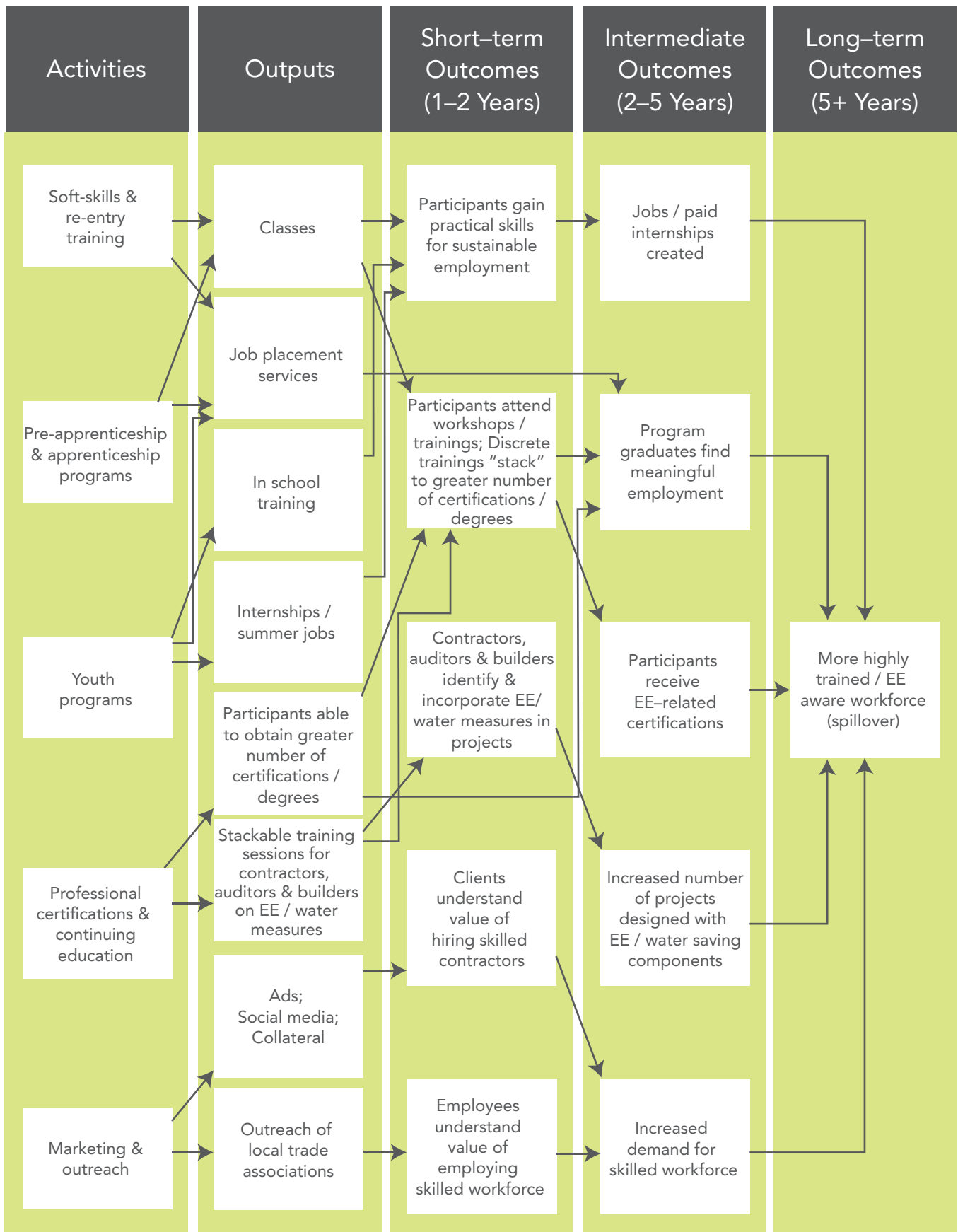


Figure 37. Workforce Program Logic Model



**Attachment B:
Metrics Tables
(excerpted from MCE EE Business Plan)**

Table 4. Single Family Sector Market Barriers & Metrics

Problem Statement	Market Barriers	Desired Market Effects/ 10-year Vision	Intervention Strategies
Customers lack sufficient funds to cover the costs of upgrades. Customers are not aware of financing options or do not qualify for traditional financing tools	Financial barrier; lack of awareness	Increase in the number of homeowners who are aware of and make use of financing options to help them cover the cost of energy efficient home upgrades	1. Rebates ¹ 2. Education about financing offered by other entities (i.e. PACE)
In renter-occupied homes the homeowner pays for the upgrades but the renter sees the financial benefit on their utility bill resulting in fewer homeowners willing to make the investment in energy efficiency	Split incentive	Increase in the awareness of non-energy benefits of energy efficiency measures (i.e. comfort, light quality, etc.) and the value that has on the rental market	1. Door-to-door direct install provides energy efficiency measures free of cost 2. Behavioral campaigns encourage low-cost and no-cost solutions
There are a limited number of contractors with technical knowledge of integrated and comprehensive demand-side management or above code opportunities	Lack of contractors trained in IDSM and how to meet or exceed code	Increase in the number of contractors who understand the benefits of IDSM and can use that knowledge to sell projects	1. Contractor training
There is a perception among contractors that rebate programs are time and labor intensive	Confusion among contractors about program processes, high administrative burden of participating in programs	Increase participation and decrease customer/contractor confusion	1. SPOC guides customers through various program offerings and supports contractors in selling projects
Energy Efficiency improvements are not as visible as other clean energy strategies, such as rooftop solar panels, and therefore they are not valued as highly by homeowners or prospective home buyers	Low perceived value of energy efficiency measures	Energy efficiency improvements are valued in the real estate market	1. Home information and automation devices to make energy consumption more conspicuous 2. Community engagement and gamification to motivate customers to save energy
Customers are not aware of the potential benefits of energy efficiency upgrades or the availability of MCE's program	Lack of awareness	Increased awareness of MCE's program offerings and financial benefit of energy efficiency upgrades	1. Door-to-door campaigns and community outreach increase awareness of MCE programs 2. SPOC approach tracks opportunities for an individual customer over time
Customers are concerned about uncertainty in achievable savings	Uncertainty in savings	Increased certainty around achievable energy savings	1. Metered energy savings increase accuracy of projected energy savings and validate savings post-installation

Sector Metric	Baseline	Metric Source	Short Term Target (1-3 years)	Mid Term Target (4-7 years)	Long Term Target (8-10 years)
1. Number of completed projects 2. Number of referrals to PACE programs 3. Number of completed projects using PACE financing	1. Program Year 1 (PY1) 2. PY1 3. 2015 Baseline: 128 projects completed in MCE service area using PACE tax assessments	1. Program tracking data 2. Program tracking data 3. PACE providers	1. Increase 10% over PY1 baseline 2. Increase 10% over PY1 baseline 3. Increase 5% over 2015 baseline	1. Increase 20% over PY1 baseline 2. Increase 20% over PY1 baseline 3. Increase 10% over 2015 baseline	1. Increase 30% over PY1 baseline 2. Increase 30% over PY1 baseline 3. Increase 15% over 2015 baseline
1. Number of homes receiving direct install measures 2. Number of customers reached through behavioral campaigns	1. PY1 Participation 2. PY1 Participation	1. Program tracking data 2. Program tracking data	1. 0.1% of homes 2. 2% of residential customers	1. 0.5% of homes 2. 5% of residential customers	1. 1% of homes 2. 10% of residential customers
1. Number of contractors that participate in training	1. 2015 Baseline: 17 contractors attended training	1. Program tracking data	1. 10% increase over 2015 baseline	1. 10% increase over 2015 baseline	1. 10% increase over 2015 baseline
1. Number of repeat participants 2. Number of projects provided with technical assistance 3. Percentage of projects completed with more than one demand side strategy	1. PY1 Participation 2. PY1 Participation 3. PY1 Participation	1. Program tracking data 2. Program tracking data 3. Program tracking data	1. NA 2. 2% of homes 3. 50% of projects	1. 5% of participants 2. 10% of homes 3. 60% of projects	1. 10% of participants 2. 20% of homes 3. 80% of projects
1. Increase in value of energy efficiency retrofits in home sales 2. Participation in community outreach/competitions	1. PY1 Participation 2. PY1 Participation	1. Market study 2. Program tracking data	1. Increase 2% over PY1 baseline 2. 2% of residential customers	1. Increase 5% over PY1 baseline 2. 5% of residential customers	1. Increase 7% over PY1 baseline 2. 10% of residential customers
1. Participation in door to door campaigns and community outreach activities 2. Number of repeat referrals from SPOC	1. PY1 Participation 2. PY1 Participation	1. Program tracking data 2. Program tracking data	1. 2% of residential customers 2. NA	1. 5% of residential customers 2. 5% of participants	1. 10% of residential customers 2. 10% of participants
1. Increased alignment between projected energy saving and metered energy savings	1. PY1 Participation	1. Impact evaluation	1. Realization rate > 75%	1. Realization rate > 80%	1. Realization rate > 90%

Table 9. Multifamily Sector Market Barriers & Metrics

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

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

Table 13. Industrial Sector Market Barriers & Metrics

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

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

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

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

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

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

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

10.5 Coordination

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

and contractor confusion while also achieving program objectives.

Key Partners

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

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

Energy Efficiency Assistance for Farm Worker Housing

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

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

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

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

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

⁷⁶ Ibid.

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

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

Financing

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

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

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

Metrics Tables (Table 17)

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

Table 17. Agriculture Sector Market Barriers & Metrics

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

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

Table 21. Commercial Sector Market Barriers & Metrics

Problem Statement	Market Barriers	Desired Market Effects/ 10-year Vision	Intervention Strategies
Misalignment between typical payback requirements and commercial building turnover rates (disincentive to pay for upgrades that they may not benefit from)	Financial barrier	Improve the energy efficiency penetration in the untapped property management market	1. Leverage SPOC 2. Sophisticated CRM 3. Partnerships to engage and get buy-in from property managers
"Split incentive" issue in which the tenant pays for electricity, but does not own the equipment. This arrangement is very common in the commercial sector, and can make it challenging to get buy-in and financial backing for efficiency upgrades	Split incentive	Landlords offer upgrades as business-as-usual	1. Leverage SPOC 2. Sophisticated CRM 3. Partnerships to engage and get buy-in from property managers
Potential savings are fragmented across a high diversity in business type and large geographical area	Geographic diversity and area	Projects completed with relatively similar penetration across service area	1. Diversity of campaigns and outreach to reach broad territory
Limited number of contractors with technical knowledge of integrated and comprehensive demand-side management and a need for more contractors that also have the business, sales, and project management skills to convert lead generation to complete projects	Lack of contractor training; workforce limitations	Increase in contractor-driven projects	1. Expand contractor trainings and incentives
Uncertainty in achievable savings	Lack of data	Metered-based savings provides customers with greater certainty in savings	1. Metered-based savings pilots 2. Pay-for-performance strategies
Lack of dedicated energy managers in the commercial sector	Lack of time	Majority of commercial properties have an energy manager	1. Incentives and trainings for dedicated and shared energy managers
Need for greater sub-metering and metered energy savings approaches to gain insight into energy consumption patterns and savings over time	Lack of data	Greater reliance on metered savings	1. Promoting use of metered energy savings where applicable
Commercial customers' general lack of awareness of energy efficiency benefits and MCE programs	Lack of awareness	Majority of commercial customers recognize MCE's energy efficiency brand and benefits	1. Expand marketing efforts; leverage partnerships to broaden the message about EE benefits 2. Increase in standardization of savings
Energy efficiency improvements are not as visible as other clean energy strategies, such as rooftop solar panels. As a result, efficiency improvements may not increase property values in the way that other clean energy strategies do	Visibility of Improvements	Property owners and prospective tenants value EE improvements; greater reliance on benchmarking	1. Leverage partnerships and conduct strategic marketing efforts

Sector Metric	Baseline	Metric Source	Short Term Target (1-3 years)	Mid Term Target (4-7 years)	Long Term Target (8-10 years)
Percentage of commercial customers that participate in the program	Current percentage of commercial customers that participate in the program	MCE Program database	Increase to 2% of market	Increase to 4% of market	Increase to 6+% of market
Percentage of rental property owners and tenants that participate in programs	Current % of commercial customers that participate in the program	MCE Program database	Increase to 2% of market	Increase to 4% of market	Increase to 6+% of market
Increase in participation in historically under-participating regions	2015 baseline	MCE Program database	Increase to 2% of market	Increase to 4% of market	Increase to 6+% of market
Number of trainings; audit to completion conversion rate	2015 baseline	MCE Program database	Increase by 30% over baseline	Increase by 50% over baseline	Increase by 70% over baseline
Alignment between expected and achieved savings	2015 baseline	MCE Program database	Increase to 2% of market	Increase to 4% of market	Increase to 6+% of market
Percentage of all commercial customers with a dedicated or shared energy manager	Program Year 1 (PY1)	MCE Program database	Increase by 10% over baseline	Increase by 15% over baseline	Increase by 20% over baseline
Number of participants with savings tracked by metered based approaches	PY1	MCE Program database	Increase by 5% over baseline	Increase by 10% over baseline	Increase by 15% over baseline
Percentage of all commercial customers aware of MCE's EE programs	PY1	MCE Program database	Increase by 10% over baseline	Increase by 15% over baseline	Increase by 20% over baseline
EE value included in appraisal	PY1	Program administrator	Establish metric to quantify increased property value from EE (both savings and non-energy benefits)	Quantify data for newly established metric	Integrate metric into customer reports

Table 27. Workforce Market Barriers & Metrics

Problem Statement	Market Barriers	Desired Market Effects/ 10-year Vision	Intervention Strategies
The energy efficiency workforce requires a wide variety of trainings for all skill levels	Lack of diverse trainings	Stackable certified programs that meet workforce entrants where they are at (Increase of 15% over baseline)	<ol style="list-style-type: none"> 1. Work with partners and industry experts to design and implement trainings 2. Develop a plan for funding sector specific, stackable certifications (entry level to professional certifications)¹
Trainings take contractors away from their core job responsibilities	Lack of time for trainings	To seamlessly integrate trainings into day-to-day operations (Increase of 15% over baseline)	<ol style="list-style-type: none"> 1. Schedule trainings around peak work schedules² 2. Incorporate on-the-job training³ 3. Bring trainings to contractors⁴
Trainings, workshops and certifications can be costly	Lack of funding for trainings	Provide trainings that are accessible to all (Increase of 15% over baseline)	<ol style="list-style-type: none"> 1. Provide subsidized trainings 2. Offer scholarships to individuals 3. Partner with workforce development organizations to provide training for hard-to-reach and at-risk populations⁵
Codes and standards change every few years and it can be difficult for contractors to stay up to date with the changes	Changing codes and standards	Contractors that understand and can easily implement new codes (Increase of 15% over baseline)	<ol style="list-style-type: none"> 1. Work with local planning departments to develop a mobile app 2. Facilitate a conversation between planning departments and contractors to identify gaps, provide feedback loops, and develop channels for information dissemination 3. Work with inspectors to provide on-the-job training for new codes and standards
There are not enough comprehensive educational programs focused on energy efficiency	Discrete trainings do not contribute to a career pathway	Create meaningful career paths for participants (Increase of 15% over baseline)	<ol style="list-style-type: none"> 1. Design an energy efficiency vocational program
Contractors don't know how to use, install or explain the value of new technology	Lack of training on new technologies	New technologies are valued and installed by the masses upon release (Increase of 15% over baseline)	<ol style="list-style-type: none"> 1. Facilitate educational workshops with product manufacturers⁶ 2. Provide on-the-job training for operations and maintenance staff

Sector Metric	Baseline	Metric Source	Short Term Target (1-3 years)	Mid Term Target (4-7 years)	Long Term Target (8-10 years)
<ol style="list-style-type: none"> 1. Increase in stackable certifications 2. Increase in number of trainees completing the pathway 	Determine baseline from Program Year 1 (PY1) data	Program tracking data	Increase 5% over baseline	Increase 10% over baseline	Increase 15% over baseline
<ol style="list-style-type: none"> 1. Number of trainings scheduled around peak work 2. Increase in grants provided for on-the-job training 3. Number of trainings at individual businesses 	Determine baseline from PY1 data	Program tracking data	Increase 5% over baseline	Increase 10% over baseline	Increase 15% over baseline
<ol style="list-style-type: none"> 1. Increase in participants that wouldn't have been able to participate 2. a. Number of individual scholarships given b. Amount of individual scholarships given 3. a. Number of partner organizations b. Number of hard to reach participants trained 	Determine baseline from PY1 data	Program tracking data	Increase 5% over baseline	Increase 10% over baseline	Increase 15% over baseline
<ol style="list-style-type: none"> 1. Number of downloads 2. Number of MCE jurisdictions that participate in the standardized process for dissemination of and feedback loops for new codes and standards implementation 3. a. Number of on-the-job training sessions with inspectors b. Reduction in repeat inspector visits for code violations 	Determine baseline from PY1 data	Program tracking data	Increase 5% over baseline	Increase 10% over baseline	Increase 15% over baseline
<ol style="list-style-type: none"> 1. Number of graduates 	Determine baseline from PY1 data	Program tracking data	Increase 5% over baseline	Increase 10% over baseline	Increase 15% over baseline
<ol style="list-style-type: none"> 1. Number of product specific workshops 2. Number of product specific on-the-job training sessions for operations and maintenance staff 	Determine baseline from PY1 data	Program tracking data	Increase 5% over baseline	Increase 10% over baseline	Increase 15% over baseline

1 Workforce Issues and Energy Efficiency Programs: A Plan for California's Utilities. Donald Vial Center on Employment in the Green Economy at the University of Berkeley. (2014) p. 132.

2 Workforce Issues and Energy Efficiency Programs: A Plan for California's Utilities. Donald Vial Center on Employment in the Green Economy at the University of Berkeley. (2014) p. 78.

3 2010-2012 WE&T Process Evaluation Volume I: Centergies. Opinion Dynamics and McLain ID Consulting. (2012) p. 40.

4 Workforce Issues and Energy Efficiency Programs: A Plan for California's Utilities. Donald Vial Center on Employment in the Green Economy at the University of Berkeley. (2014) p. 79.

5 2010-2012 WE&T Process Evaluation Volume I: Centergies. Opinion Dynamics and McLain ID Consulting. (2012) p. 118.

6 2010-2012 WE&T Process Evaluation Volume I: Centergies. Opinion Dynamics and McLain ID Consulting. (2012) p. 139.

**Attachment C:
Sector and Portfolio Energy Savings Targets**

Table 1: Electric (kWh) Savings

Program #	Sector	Years 1–2		Years 3–4		Years 5–10	
		Gross kWh Savings	% of Total Portfolio Savings Goal	Gross kWh Savings	% of Total Portfolio Savings Goal	Gross kWh Savings	% of Total Portfolio Savings Goals
MCE01	Residential Single Family	3,802,162	20%	4,320,954	19%	12,620,832	16%
MCE02	Residential Multifamily	3,458,921	18%	3,301,830	15%	9,802,518	13%
MCE03	Commercial	7,259,309	38%	9,237,506	41%	32,758,342	42%
MCE04	Industrial	1,712,578	9%	3,568,890	16%	16,938,397	22%
MCE05	Agricultural	3,086,521	16%	2,120,622	9%	5,884,606	8%
Total		19,319,492	100%	22,549,802	100%	78,004,696	100%

Table 2: Demand (kW) Savings

Program #	Sector	Years 1–2		Years 3–4		Years 5–10	
		Gross kW Savings	% of Total Portfolio Savings Estimate	Gross kW Savings	% of Total Portfolio Savings Goal	Gross kW Savings	% of Total Portfolio Savings Goals
MCE01	Residential Single Family	505	30%	544	43%	1,642	46%
MCE02	Residential Multifamily	103	6%	147	12%	346	10%
MCE03	Commercial	583	34%	323	26%	677	19%
MCE04	Industrial	125	7%	115	9%	538	15%
MCE05	Agricultural	393	23%	122	10%	394	11%
Total		1,710	100%	124,018	100%	3,595	100%

Table 3: Gas (therm) Savings

Program #	Sector	Years 1–2		Years 3–4		Years 5–10	
		Gross Therm Savings	% of Total Portfolio Savings Goal	Gross Therm Savings	% of Total Portfolio Savings Goal	Gross Therm Savings	% of Total Portfolio Savings Goals
MCE01	Residential Single Family	182,344	22%	481,414	31%	1,316,875	26%
MCE02	Residential Multifamily	317,023	39%	693,910	44%	2,535,675	50%
MCE03	Commercial	11,041	1%	13,249	1%	47,696	1%
MCE04	Industrial	294,276	36%	353,131	22%	1,271,271	25%
MCE05	Agricultural	11,134	1%	13,360	1%	48,097	1%
Total		815,817	100%	1,555,065	100%	5,219,615	100%