

2013-2014 Energy Efficiency Programs On Demand Efficiency Program Implementation Plan

1. **Program Name:** On Demand Efficiency
Program ID: SCG3759
Program Type: Third-Party Program

2. Projected Program Budget Table

Table 1: Total Projected Program Budget by Category

Program #	Main/Sub Program Name	Administrative Amount	Marketing Amount	Direct Implementation Amount	Incentive Amount	Total Program Budget Amount
	SoCalGas Third Party Programs					
3759	3P-On Demand Efficiency	\$0	\$0	\$1,642,000	\$2,958,000	\$4,600,000
3759U	3P-On Demand Efficiency (Utility)	\$52,053	\$7,661	\$82,183	\$0	\$141,898
	TOTAL:	\$52,053	\$7,661	\$1,724,183	\$2,958,000	\$4,741,898

Note: SCG continues to negotiate the final contract with the third party vendor. As a result of final contract negotiations, the budget allocation into the budget subcategories may vary.

3. Projected Program Gross Impacts Table

Table 1: Total Projected Program Savings by Subprogram

Program #	Main/Sub Program Name	2013-2014 Gross kW Savings	2013-2014 Gross kWh Savings	2013-2014 Gross Therm Savings
3759	3P-On Demand Efficiency	0	0	1,129,204
	TOTAL:	0	0	1,129,204

Note: The therm savings are estimated based on contract negotiations with the third party vendor. The projected savings may change as a result of final contract negotiations.

4. Program Description

a) Describe program

The On-Demand Efficiency Program (ODE) provides a method of decreasing the natural gas consumption, with demand (recirculation) controls, of central domestic hot water (CDHW) systems with recirculation loops in multifamily buildings, while improving occupant satisfaction with the hot water delivery. Demand controls on hot water recirculation systems turn off the recirculation pump when it is not needed, thereby reducing unnecessary heat loss from the loop, reducing the boiler run time, and thus reducing natural gas consumption. For this program, the innovative technology, “D’Mand Pump” will be utilized to capture maximum energy savings within the multi-family CDHW market segment.

Data shows that there are a large number of boilers and commercial water heaters serving multifamily residences in Southern California Gas Company’s service territory. Data also shows that a substantial number of these either have no recirculation controls installed, or if they do have a control, it is often a timeclock.¹ Timeclocks are very

¹ Heschong Mahone Group. June 2006. “Measure Information Template—Central Hot Water Distribution Systems in

2013-2014 Energy Efficiency Programs On Demand Efficiency Program Implementation Plan

ineffectual controls even when they work, but they are frequently bypassed for tenant satisfaction reasons. This program will find sites with potential savings and install controls that are appropriate and sustainable, and the program's efforts will save natural gas while maintaining comfort for the occupants.

The baseline target segment is multifamily residence apartment complexes with central boilers and a timeclock or no control. The program will achieve its savings by making direct offers to known decision makers identified in the niche market. There is a large pool of older multifamily residence apartment buildings in SoCalGas territory (estimated to be nearly ¼ of California's roughly 4.1 million multifamily units). Many of these buildings (25%-50%) have central boilers serving individual buildings on the property. While other programs address boiler efficiency, the On Demand Efficiency program is targeted at the delivery mechanism (re-circulation system).

Through targeted marketing, the proposed program strategically addresses an identified need. Targeted penetration levels will be achieved through a combination of effective marketing combined with a program that creates a financial benefit to the customer.

Specific elements include:

- Direct Customer contact by phone from program representatives
- Installation of on-demand device at low net cost to program participant
- Offer of training for site personnel
- Survey that assesses participant satisfaction
- Monitoring of performance in a subset of the installations
- Referral 'web' that utilizes property management firms, boiler companies and other market channels to increase identification of potential participants

The following outline details the implementation process:

- Potential participant is identified through one of three channels (direct marketing, referrals from plumber or certified installers, and sub-contractors)
- Potential participant is contacted via phone and screened for applicability
- Participant is sent program collateral and is directed to the program website for more information
- Participant submits a rebate application
- Qualified installer will be assigned
- Participant site is scheduled for a feasibility visit
- Program partner or plumber makes visit to site and determines feasibility
- Program partner or plumber refers to compatible program if site is not suitable for the ODE program and might be suitable for a temp modulation controller
- Installer (plumber) writes up sales offer
- Offer is accepted and signed by decision maker
- Installation is scheduled

Multifamily Buildings' 2008 California Building Energy Efficiency Standards. PDF Version of document downloaded on June 11, 2007 from http://www.energy.ca.gov/title24/2008standards/documents/2006-07-12_workshop/reviewdocs/

2013-2014 Energy Efficiency Programs On Demand Efficiency Program Implementation Plan

- Installation takes place
- Installation is documented by photos and installer signs confirmation form
- Customer signs confirmation form
- Incentive check is ordered for payment to manufacturer
- Incentive check is mailed
- A subset of sites are monitored for energy savings and water use impacts
- Participant is referred to other programs if desired
- As part of this program, we will administer a web-based satisfaction survey. As part of this survey, we will query the participant as to their interest level in complimentary programs. If there is interest shown, the computer application will automatically send a referral to the complimentary program and will send a copy to the Gas company program manager.

b) List measures

The Program’s measure is the D’Mand Pump, which is actually a system that includes the pump, a flow sensor, a temperature sensor and a controller unit. The D’Mand Pump reduces heat losses from central DHW distribution loops in multifamily buildings by shutting off the re-circulation pump when it is not needed.

Measure	Incentives (per unit)
D-Mand E Pump	\$1,600

c) List non-incentive customer services

Services provided include: project feasibility analysis, measure installation and verification, and, where appropriate, participant referral to complementary programs.

5. Program Rationale and Expected Outcome

a) Quantitative Baseline and Market Transformation Information

This section is not applicable

b) Market Transformation Information

This section is not applicable

c) Program Design to Overcome Barriers

The following table provides descriptions of the barriers that Program seeks to address and the solutions the Program proposes to overcome the barrier.

Barrier	Solution
Lack of consumer information about energy efficiency benefits	Program’s marketing and outreach efforts take the information to customers where they can easily access it: their association meetings, brochures (as a follow-up to direct contact), and during normal interactions with their plumbers.
Lack of qualified personnel resources to support objectives.	Program’s marketing and outreach efforts take the information to customers where they can easily

**2013-2014 Energy Efficiency Programs
On Demand Efficiency
Program Implementation Plan**

Barrier	Solution
	access it: their association meetings, brochures (as a follow-up to direct contact), and during normal interactions with their plumbers.
Split incentives (between owners/landlords and tenants)	Although most of target market does not experience split incentives, rebates are high enough to overcome this barrier when it occurs.
Lack of financing for energy efficiency improvements	Program covers the full cost of the new pumps and controls so that the investment risk is minimized.
Barriers to the entry of new energy efficiency technologies or systems whose efficiency or system performance levels are uncertain due to lack of experience	Program makes a significant investment of time in helping decision-makers to understand how the technology works, so that fears of failure or tenant dissatisfaction are allayed.

d) Quantitative Program Targets

Table 3

Program Name	Program Target by 2013	Program Target by 2014
Identify CDHW systems in Gas Co. territory	800	800
Install demand controls	716	706
Customer Satisfaction Survey	35	35
Number of property management firms involved	12	10
Number of building owners involved	35	35
Mentions in the trade press	4	4

**2013-2014 Energy Efficiency Programs
On Demand Efficiency
Program Implementation Plan**

e) Advancing Strategic Plan Goals and Objectives

The Program will advance the goals of the Strategic Plan in the following ways:

Description	Strategic Plan Sector	Strategic Plan Goal	Strategic Plan Strategy
The Program is pursuing technologies that PIER is studying for effectiveness (boiler controls).	Residential	Transform home improvement markets to apply whole-house energy solutions to existing homes.	2-3: Manage research into new/advanced cost effective innovations to reduce energy use in existing homes.
In promoting adoption of an established but leading edge technology, the program helps advance CEESP research and technology objectives.	Research and Technology	Conduct targeted emerging technologies R&D to support the Big, Bold Energy Efficiency Strategies/Programmatic Initiatives and integrated energy solutions goals.	2-2: Promote cost-effective near term performance enhancements of existing technologies

6. Program Implementation

a) Statewide IOU Coordination

- i.** Program name
- ii.** Program delivery mechanisms
- iii.** Incentive levels
- iv.** Marketing materials
- v.** IOU program interactions with CEC, ARB, Air Quality Management Districts, local government programs, other government programs as applicable
- vi.** Similar IOU and POU programs

This third-party program only operates within SoCalGas’s service area. The Program is designed to support and complement SoCalGas’s core program activities. If this Program shares common elements with the IOU’s core programs, other third-party programs, or programs in other IOU service areas, SoCalGas and the Contractor will strive to coordinate the similar activities.

b) Program delivery and coordination

- i.** Emerging Technologies program
The Program primary measure, though market ready, is still considered an ‘advanced’ technology. It is barely a step beyond an emerging technology, and is currently bridging into market acceptance. The Program serves to increase its acceptance and levels of market saturation. In order to connect to new emerging technologies, the results of CEC emerging technologies grants and contracts to assess opportunities for program improvements will be monitored. It is expected that there may be potential improvements to the technology or program delivery mechanisms that we will evaluate for inclusion.

2013-2014 Energy Efficiency Programs On Demand Efficiency Program Implementation Plan

ii. Codes and Standards program

ODE staff have participated in virtually every iteration of the California Building Energy efficiency Standards in the past twenty years, and will be able to inform on Codes and Standards development process related to CDHW systems. Continuing gathering of significant quantities of data on both the performance of demand controls and, more generally, MF CDHW market characteristics is occurring. Much of that data will be useful to inform codes and standards changes. For 2008, per the adopted building standards, timeclocks are an acceptable boiler control in new buildings and there is no additional ‘credit’ for anything beyond that. Research has demonstrated that more energy savings potential can be realized if almost any improved control device is installed, but there is not enough data to establish installation requirements or the specific impact of upgrades

iii. WE&T efforts

Although ODE has no specific connection to any workforce education and training efforts outside of the program, the Program offers training to MF site maintenance staff and management staff. Often these are people with potential for greater understanding of and responsibility for performance of energy related systems, but little opportunity for more formal training on these systems. The training flowing from ODE helps make them more employable.

iv. Program-specific marketing and outreach efforts (provide budget)

ODE staff (including subcontractors and qualified installers) will identify prospects through a variety of means. The main technique will include mining websites that serve apartment seekers. The Program will follow-up referrals from plumbers, other IOU programs, and contacts made at trade shows and conferences.

The potential participants are all screened to see if their buildings are served by one or more central hot water distribution loops. Those who confirm they have such a system are given the program offerings. The Program provides explanatory information to potential participants through the web site and printed collateral material. Those who refuse the program offer are still entered into the Program’s database for possible future use.

v. Non-energy activities of program

The Program provides voluntary training to site maintenance and/or management staff on how the new controls work as well as a larger understanding of how the CDHW system works. This training should result in lower maintenance costs and fewer tenant complaints. The Program will distribute a customer satisfaction survey once installation is finished and provide an assessment of this non-energy impact (customer satisfaction) of the program.

vi. Non-IOU Programs

2013-2014 Energy Efficiency Programs On Demand Efficiency Program Implementation Plan

The ODE program offer is made directly to customers that ODE staff have pre-screened to determine eligibility. The Program utilizes a brochure and website to provide more information to prospective participants on the mechanics and benefit of the program. After feasibility is determined, program staff generates a proposal, the device is scheduled to be installed and the installation takes place. After the installation is verified, the rebate is issued and the savings are claimed.

vii. CEC work on PIER

There is an ongoing study within the CEC's PIER program to investigate the effectiveness of various types of boiler controls and to inform a rewriting of the hot water distribution algorithms with the compliance software. The current device is one of the control types about which the study is gathering data. Therefore, even though our program includes a monitoring function, the reliability of demand control energy savings will be independently documented and verified. The PIER study will also be comparative among types of devices and will show savings under multiple conditions.

viii. CEC work on codes and standards

The PIER research referenced above will directly lead into the next round of Codes & Standards updates, as will the demand control and MF market data that will be collected as part of the ODE Program.

ix. Non-utility market initiatives

The Program's personnel are part of a team that, through a different contract, will be developing a quality control manual for CDHW systems, and providing training to installers, manufacturers, and inspectors. The training will include a segment on how to spot faults in CDHW systems and how to assess the best opportunities for system improvements. The personnel that work in the ODE Program will help inform that effort, and vice versa. The industry is struggling with how to improve the quality of installations and ensure long-term energy savings. ODE is an integral part of that progression and there are many spillover opportunities that the program will seek to exploit.

c) Best Practices

This program reflects best practices in that it addresses a specific problem with a simple solution that requires a minimum level of hassle on the customer's part, intelligently involves relevant market actors, and uses a state-of-the-art database-driven website to track marketing, installations, savings and more.

d) Innovation

The On Demand Efficiency Program relies on the "D'Mand Pump" as an innovative technology and employs an innovative program strategy to deliver an efficiency solution to the multifamily market sector. The D'Mand Pump is actually a system that includes the pump, a flow sensor, a temperature sensor and a controller unit. It reduces heat losses from central DHW distribution loops in multifamily buildings by shutting off the recirculation pump when it is not needed. The flow sensor detects when a tenant turns on

2013-2014 Energy Efficiency Programs On Demand Efficiency Program Implementation Plan

the tap, and the temperature sensor takes the temperature of the water in the line. The control unit turns the pump on if the water temperature is too low, and shuts the pump off as soon as the water temperature is high enough near the last tenant on the loop. A similar system has been used in single-family homes for over a decade, but the more complex sensing and logic needed for multi-tenant systems is a relatively new innovation that has not had much penetration yet in the market.

e) **Integrated/Coordinated Demand Side Management**

Not applicable to this third-party program.

f) **Integration Across Resource Types (energy, water, air quality, etc)**

This program has the potential to reflect electric savings as well as possibly water savings, although there is no plan at this time to claim those savings, the Program's Contractor is interested in exploring those possibilities in the future.

g) **Pilots**

There are no pilot projects that are part of this program at this time

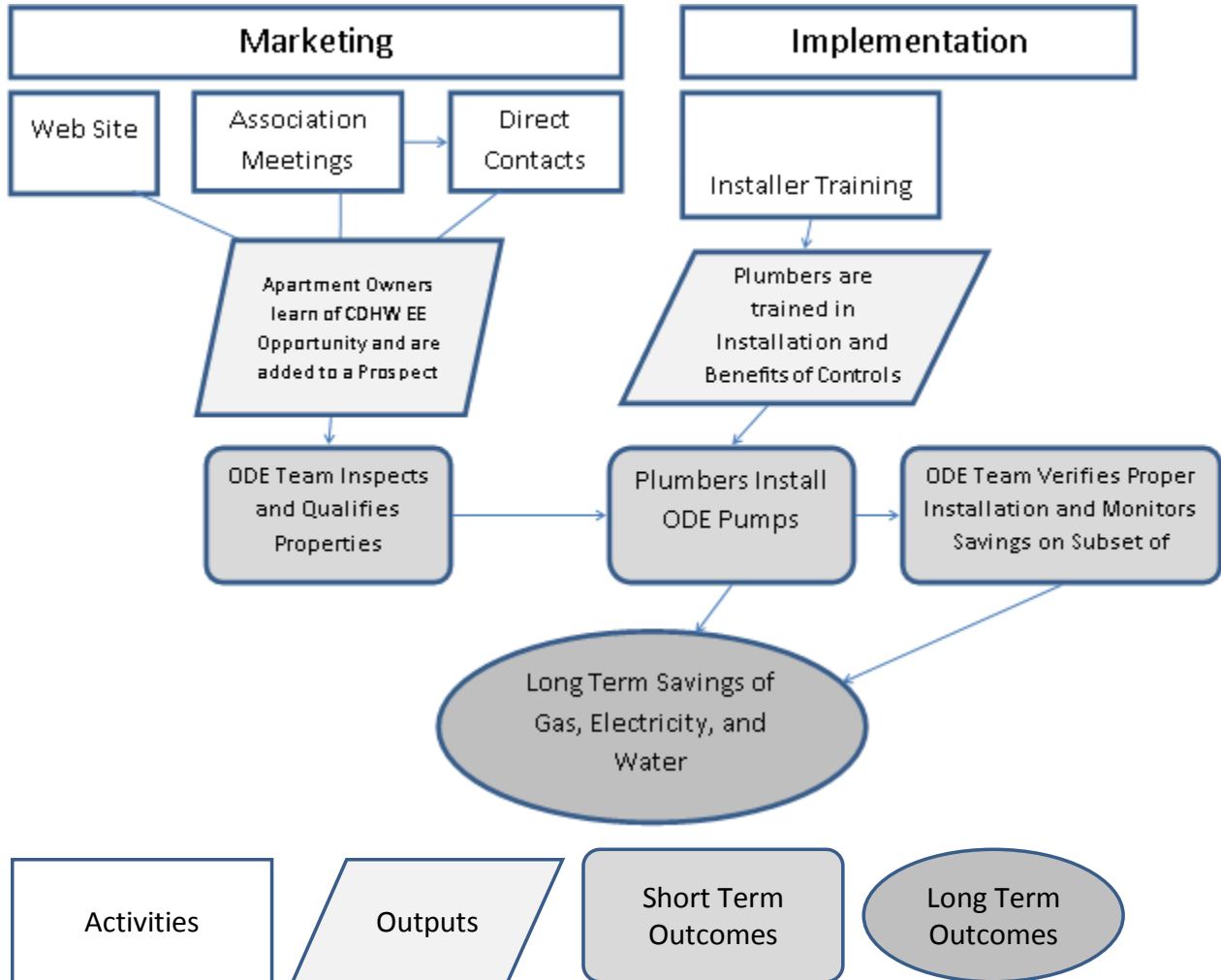
h) **EM&V**

The utilities are proposing to work with the Energy Division to develop and submit a comprehensive EM&V Plan for 2013-2014 after the program implementation plans are filed. This will include process evaluations and other program-specific studies within the context of broader utility and Energy Division studies. More detailed plans for process evaluation and other program-specific evaluation efforts cannot be developed until after the final program design is approved by the CPUC and in many cases after program implementation has begun, since plans need to be based on identified program design and implementation issues.

7. Diagram of Program

No specific program diagram for this third party program has been developed. Any program linkages are discussed in Section 6. Following is a diagram of the Program's implementation and marketing.

2013-2014 Energy Efficiency Programs On Demand Efficiency Program Implementation Plan



2013-2014 Energy Efficiency Programs On Demand Efficiency Program Implementation Plan

8. Program Logic Model

