



**Akbar Jazayeri**  
Vice President of Regulatory Operations

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July 26, 2012

**ADVICE NO. 2681-E-A**  
(Southern California Edison Company – U 338-E)

**ADVICE NO. 3268-G-A/3972-E-A**  
(Pacific Gas & Electric Company – U 39 M)

**ADVICE NO. 4312-G-A**  
(Southern California Gas Company – U 904 G)

**ADVICE NO. 2320-E-A/2081-G-A**  
(San Diego Gas & Electric – U 902 M)  
PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA  
ENERGY DIVISION

**SUBJECT:** Supplement to Southern California Edison, Southern California Gas, San Diego Gas & Electric and Pacific Gas and Electric Company's request to implement a Multifamily Energy Upgrade California Pilot within the 2010-2012 Energy Efficiency Portfolio.

In compliance with Decisions (D.)09-09-047 and D.10-12-054, Southern California Edison Company (SCE), Pacific Gas and Electric Company (PG&E), Southern California Gas Company (SoCalGas), and San Diego Gas & Electric Company (SDG&E) hereby submit for filing this Advice Letter for a Multifamily Energy Upgrade California (MF EUC) Pilot Program. All necessary supporting documentation is attached hereto.

**PURPOSE**

The purpose of this advice letter is to provide the information required by the California Public Utilities Commission (Commission) in Ordering Paragraph No. 21(b) of Decision (D.) 09-09-047.

## **BACKGROUND**

Decision (D.) 09-09-047, ordering paragraph 21, requires the IOUs to include a Prescriptive Whole House Retrofit Program (PWHRP) in their statewide residential program, consistent with guidance provided in that decision. The IOUs' PWHRP program Advice Letter (SCE's Advice 2430-E, PG&E's Advice Letter 3087-G/3608-E-A) was approved in Energy Division's disposition letter dated March 11, 2010. SCE's portion of the \$100 million statewide PWHRP budget was authorized at \$33 million. PG&E's original budget was authorized at \$42 million.

Subsequently, Ordering Paragraph 21(b) of D.09-09-047 was modified in D.10-12-054 to read: "Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, and Southern California Gas Company shall file a program implementation plan for the Prescriptive Whole House Retrofit Program referenced in subsection (a) of this Ordering Paragraph by Advice Letter by December 15, 2009. If Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, and Southern California Gas Company determine it feasible to expand this program offering to multifamily customers during the 2010-2012 program cycle, they shall jointly seek approval for this component through an Advice Letter."

## **PROPOSAL**

Attachment A to this Advice Letter are the Program Implementation Plans for SCE, SoCalGas, PG&E, and SDG&E. Attachment A1 to this Advice Letter is SCE/SCG's attachment which details specific information regarding its MF EUC Pilot Program. Attachment A2 to this Advice Letter is SDG&E's attachment which details specific information regarding its MF EUC Pilot Program. Attachment A3 to this Advice Letter is PG&E's attachment which details specific information regarding its MF EUC Pilot Program.

This advice filing will not increase any rate or charge, cause the withdrawal of service, or conflict with any other schedule or rule.

## **TIER DESIGNATION**

Pursuant to General Order (GO) 96-B, Energy Industry Rule 5.2, this advice letter is submitted with a Tier 2 designation.

## **EFFECTIVE DATE**

This advice filing will become effective on August 25, 2012, the 30<sup>th</sup> calendar day after the date filed.

**NOTICE**

Anyone wishing to protest this advice filing may do so by letter via U.S. Mail, facsimile, or electronically, any of which must be received no later than 20 days after the date of this advice filing. Protests should be mailed to:

CPUC, Energy Division  
Attention: Tariff Unit  
505 Van Ness Avenue  
San Francisco, California 94102  
E-mail: [edtariffunit@cpuc.ca.gov](mailto:edtariffunit@cpuc.ca.gov)

Copies should also be mailed to the attention of the Director, Energy Division, Room 4004 (same address above).

In addition, protests and all other correspondence regarding this advice letter should also be sent by letter and transmitted via facsimile or electronically to the attention of:

For SCE:

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There are no restrictions on who may file a protest, but the protest shall set forth specifically the grounds upon which it is based and shall be submitted expeditiously.

In accordance with Section 4 of GO 96-B, SCE is serving copies of this advice filing to the interested parties shown on the attached GO 96-B, R.09-11-014, and A.08-07-021 et al service lists. Address change requests to the GO 96-B service list should be directed by electronic mail to [AdviceTariffManager@sce.com](mailto:AdviceTariffManager@sce.com) or at (626) 302-4039. For changes

to all other lists, please contact the Commission's Process Office at (415) 703-2021 or by electronic mail at [Process\\_Office@cpuc.ca.gov](mailto:Process_Office@cpuc.ca.gov).

Further, in accordance with Public Utilities Code Section 491, notice to the public is hereby given by filing and keeping the advice filing at SCE's corporate headquarters. To view other SCE advice letters filed with the Commission, log on to SCE's web site at <http://www.sce.com/AboutSCE/Regulatory/adviceletters>.

For questions, please contact Sheila Lee at (626) 302-0690 or by electronic mail at [Sheila.Lee@sce.com](mailto:Sheila.Lee@sce.com).

**Southern California Edison Company**

Akbar Jazayeri

AJ:sl;jm  
Enclosures

## Attachment A: Multifamily Energy Upgrade California Pilot Program Implementation Plan

1. **Program Name:** Multifamily Energy Upgrade California Pilot Program

2. **Program Type:** Core

3. **Program Descriptors**

Market Sector: Existing Residential Multifamily Properties

Program Classification: Statewide

Program Status: Pilot

4. **Program Statement**

The Multifamily Energy Upgrade California Pilot is an extension of the existing statewide Energy Upgrade California (EUC) Program within the statewide residential energy efficiency sector. EUC delivers comprehensive energy efficiency upgrades tailored to the needs of existing single family homes and their owners.

The Multifamily Energy Upgrade California Pilot Program will specifically target the multifamily housing retrofit market. The Pilot will promote long-term energy benefits through comprehensive energy efficiency retrofit measures—including building shell upgrades, high-efficiency HVAC units, central heating and cooling systems, central domestic hot water heating and other deep energy reduction opportunities. These energy efficiency measures will be identified through an investment grade assessment.

This performance-based approach aims to assist property owners and managers with making informed decisions, identify measures for energy savings, and to maximize energy reductions for each property owner, manager, and tenant, as applicable.

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5. **Program Rationale**

Energy efficiency efforts for this segment must overcome a number of barriers; primarily: 1) lack of energy efficiency knowledge, 2) the economics of “split-incentives” where the building owner invests capital but the savings primarily benefit the tenants, and 3) access to investment capital. Up-front out-of-pocket costs pose a significant participation barrier for property owners and managers. The pilot will include a number of tactics, outlined below:

- To improve a property owner or manager’s energy efficiency knowledge, the pilot seeks to leverage comprehensive building assessments to identify potential energy efficiency opportunities.
- To address split incentives and cost of upgrades, the Pilot will integrate with the existing Energy Savings Assistance Program (“ESAP”) and Multifamily Energy Efficiency Rebate (“MFEER”) Program. This will provide comprehensive services to the building, including “low cost” or “no ~~cost~~ measures cost measures in conjunction with the MF

EUC incentives to maximize energy savings for the up-front investment . Additionally, low income tenants (ESAP) may qualify for additional “no cost” energy saving measures.

- Incentives will assist property owners or managers with overcoming a wide array of market and financial barriers which may otherwise prevent energy efficiency upgrades.
- A single point of contact will help the property owner or manager navigate through the incentive process.

MF EUC Pilot will field test a single-point-of-contact approach to guide property owners through the various programs in retrofitting their multifamily property. This approach will provide support in understanding the various program rules and assistance in determining eligibility. The customer will be guided through a “clipboard audit” to establish feasibility and estimate project cost for MF EUC, with an eye toward leveraging all eligible programs.

The primary purpose of this pilot program is to test performance based approaches to the multifamily property owner market. Other considerations to meet all income strata and address split incentives for property owners and tenants may include a direct install strategy, as well as prescriptive rebates through the existing MFEER Program.

While programs will be coordinated and integrated, their respective policies and procedures will be followed in the delivery of services. Operational efficiencies will be employed to streamline eligibility, income verification, and installation of measures.

Despite the noted barriers, the multifamily sector presents a significant opportunity for whole building energy efficiency programs with a deep energy reduction approach. A whole building offering has the potential to achieve deep energy savings because:

- Building owners can leverage incentives to address common areas and systems as well as individual unit upgrades to make more cost effective improvements.
- Major rehabilitation projects are common in the multifamily sector. It is cost effective to include energy efficiency upgrades at the time of these renovation projects. These projects typically have well-financed construction budgets and broad scopes that could include energy efficiency measures.
- Multifamily properties tend to be operated and maintained by professional building staff. Providing resources to building staff increases the odds that the building will be operated efficiently after energy upgrades are installed, perpetuating savings benefits.

[From the 2010-2012 EUC-WH Process Evaluation by SBW/ODC/ASW, SCE and PG&E have a set of lessons learned applicable to the single family Whole House Upgrade Program design. The discussion below outlines what would or may not be applicable for the EUC-MF pilot program design:](#)

[Below is a summary of EUC-WH Process Evaluation Recommendations:](#)

- 1) Support contractors' marketing efforts,
- 2) Support a more flexible EUC website and to allow IOU access to make modifications and access data for lead to follow up on customer leads,
- 3) Marketing recommendations
  - a. Foster peer to peer marketing
  - b. Continue to promote main program benefits
  - c. Continue email and direct mail to targeted groups of customers
  - d. Continue with events and workshops,
  - e. Offer brief, step-by-step explanation, with emphasis on whole house improvements
- 4) Convene quarterly statewide meetings of all entities implementing the program  
Contractor recruiting, training and mentoring recommendations
  - a. Focus training and mentoring of on top performers
  - b. Reduce program required paperwork and adopt common statewide job reporting,
  - c. Offer financing options
- 5) SCE-Specific Training Recommendations  
~~— Need to stop infusing WET objectives into resource acquisition program objectives~~
  - a. For participant workshop, focus on EnergyPro training and job requirement training reporting documentation and process,
  - b. For Basic/Advanced Path training – Improve detail on Basic/Advanced path training requirements
  - c. Third Party BPI training – not all third party BPI training is equal, additional re-training may be needed to standardize the quality and content coverage
  - d. On-line Learning Center – allow multiple representatives from the same contractor firm to participate, and provide more extensive training topic coverage
  - e. Contractor Mentoring – standardize contractor mentoring service  
~~— people e~~
- 6) Program Design
  - a. Allow early installation of HVAC and hot water heaters prior to approval of preliminary application
  - b. Modify or drop the Basic Upgrade Package
  - c. Improve customer service to contractors and customers
  - d. Offer contractor incentives, increase customer incentive and subsidize assessment costs
  - e. Improve whole house energy modeling, including site-specific schedules

For the EUC-MF pilot program, there are a few key program design differences:

- 1) Smaller scale, and only a select few qualified contractors will be used for pilot program implementation,
- 2) The targeted customers are defined as property owners/managers, as well as properties with low-income renters. This program target is in sharp contrast with the EUC-WH program which focuses on diverse single family homeowners. The marketing initiative for



this pilot will be very focused and targeted.

- 3) The modeling software tool has yet to be determined for this program; however, tools are currently being assessed ~~my~~by program teams.
- 4) The single family comprehensive audit and whole building comprehensive audit are fundamentally different, leading to different skill requirements. As a result, the program team is planning to engage a few highly qualified contractors and raters to participate for quality control purposes.
- 5) Unlike the EUC-WH program, where program participation has experienced a slow uptake, SCE expects the EUC-MF pilot and subsequent program will experience greater participation due to what currently appears to be greater market demand. The expected increased participation in the MF program will require the IOUs to create a local, targeted marketing program and contractor infrastructure to ensure quality and consistent outcomes during the pilot.

List of Lessons learned applicable to EUC-MF pilot program:

SCE:

1. Targeted marketing to property owners/managers
  2. Support focused contractor orientation workshop and job reporting training
  3. Support contractor mentoring/training for the selected pilot contractors
  4. Leverage existing WH contractor infrastructure to support EUC-MF contractors
- select modeling under discussion building contractors and raters SCEs during the pilot
1. SCE:

PG&E:

1. Target marketing to property owners/managers using effective and proven messaging techniques
2. Continue to use the website as a resource for property owners /managers
3. Continue participation workshops and trainings with a focus on job reporting and incorporation of adult learning techniques
4. Continue to provide on field mentoring for participating professionals
5. Explore development of common paperwork requirements
6. Leverage single family program infrastructure to support participating professionals
7. As additional improvements are made to the single family EUC they will be considered for the MF EUC Pilot

SDG&E:

The SDG&E model is not a contractor model, but is a consultant model and utilizes a single point of contact to serve a market that is uniquely different than the single family market served by the EUC contractor model. Thus, many of the recommendations do not apply. Under the participating contractor model, participating contractors perform both assessments and installation of measures. Under the consultant model, customers may use the contractor of their choosing but must utilize a participating rater to perform assessments and the test-in, test-out modeling to determine energy savings. Please reference p. A-31 for discussion regarding consultant model.

## 6. Support of the Strategic Plan

The Multifamily Energy Upgrade California Pilot, in support of the California Long Term Energy Efficiency Strategic Plan (Strategic Plan), pursues comprehensive energy efficiency measures and treats multifamily buildings as a system to seek deep energy reductions.

One of the goals of the Strategic Plan is the transformation of the home improvement market to apply whole-house energy solutions to existing homes. The overall objective of the goal is to reach all existing homes and maximize their energy efficiency potential through delivery of a comprehensive package of cost effective measures. The Strategic Plan further states that a similar approach must be developed for multifamily housing.

## 7. Expected Pilot Program Objectives and Outcomes

### Objectives:

The Pilot Program seeks to transform the multifamily retrofit market from a prescriptive, one-size-fits-all approach, toward a comprehensive building analysis approach. The Pilot will leverage energy consultants and professionals to evaluate a wide range of energy efficiency options when rehabilitating multifamily properties. The creation of energy-efficient complexes provides benefits beyond the direct energy savings. Through the incorporation of energy efficient measures by multifamily property owners and managers, tenant behaviors can be influenced and comfort improved. The hope is that these behaviors can contribute to a virtuous cycle of energy efficiency - as tenants receive upgrades that reduce their energy costs and improve comfort, they in turn recruit and mentor other tenants.

### Expected Pilot Program outcomes:

1. Deeper energy savings per building than otherwise possible, with a target of 10-20% or greater savings per building benefitting both property owners and tenants.
2. A broader suite of measures than in typical deemed programs, resulting in deeper savings (i.e., HVAC, envelope, domestic hot water).
3. Improved property owners' and managers' understanding of the benefits of a whole building approach.
4. More comprehensive maintenance follow-up for tenants and building by enrolling them into California Integrated Customer Energy Audit Tool (CA-ICEAT) to enable ongoing comparative energy usage, and energy goal setting, ensuring the persistence of savings after the EUC intervention is complete. *(PG&E will consider utilizing this tactic)*

~~5.~~

- ~~6.~~ A better understanding of combustion safety as it relates to comprehensive (non-prescriptive) retrofits.

At the time of the original filing of the Advice Letter, the Multifamily IT tools developed using ARRA funding were under development. On March 9, 2012, the IOUs received a demo of the IT Tools including the EUC MF web portal, MF Funding Finder Navigation Tool and MF Tracking

System (presumably the “Compass Portfolio Tracker”). The IOUs are still evaluating whether they will use these [Compass Tracking Tools](#) for this pilot.

SCE is initiating an evaluation to identify and evaluate best benchmarking tools for the multifamily market segment. In addition to Compass Portfolio Tracker, the evaluation will also include EnergyStar Portfolio Manager for multifamily facilities (scheduled to launch in June 2013), and EnergyScoreCards, as well as other tools that may be identified.

PG&E is interested in leveraging the tools developed; in particular, the single point of contact could use the Multifamily Funding Finder Navigation tool during the preliminary consultation with the property owner or manager. However, the maintenance and upkeep of these tools needs to be understood to ensure the information contained in the tool is current and accurate. PG&E is also interested in the MF Tracking Tool demonstrated in March 2012, and will work with the other IOUs to further evaluate the approach for the pilot.

SDG&E will not be utilizing the Compass Portfolio Tracker and is currently still evaluating the different functions of the tool.

In as much as the tool can provide a tracking mechanism for owners to follow the workflow of their projects, for the pilot, the single point of contact serves as this contact and notifies the participating rater when projects hit certain milestones. For example, when projects are submitted for review for both pre and post submittals, the single point of contact and participating rater are notified as projects are scheduled for inspection and when they are approved.

## **8. Innovation:**

### Integrated Program Design

In accordance with the Strategic Plan, the Multifamily EUC Pilot will engage with ESA and Core Energy Efficiency programs, such as MFEER. This unprecedented integrated approach combines market-rate and income-qualified energy efficiency measures that will benefit multifamily property owners and tenants.

Please see Attachments A1 to A3 for more details on how each utility plans to implement the Multifamily EUC Pilot.

## **9. Energy Measures:**

### **9.1. Measure Information:**

This updated measure list reflects the 2013-2014 IOUs' filed EE Applications. Additionally, low income tenants (ESAP) may qualify for additional “no cost” energy

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saving measures (denoted with an \*) offered within the respective IOU service areas.

Eligible measures may include but are not limited to:

The measure list is limited to those measures which can be modeled using typical energy modeling software. Eligible measures may include but are not limited to:

- Windows
- Roof/attic insulation
- Wall insulation
- Floor insulation
- Cool roofs and radiant barriers
- Boilers
- Space heating equipment
- Space cooling equipment
- Duct sealing and insulation
- Water heating equipment (including central domestic hot water controls)
- Pipe Insulation
- Water heating recirculation controls
- Indoor and outdoor lighting
- Occupancy controls /photocells
- Kitchen appliances (refrigerators and dishwashers)
- Landscape/parking lighting
- Low flow water fixtures
- Ranges, fans, clothes washer (includes coin-op clothes washer)
- LED pool lights
- Pool/spa Heaters
- High efficiency clothes washers

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- Screw-in CFL Reflector bulbs (ENERGY STAR® Qualified)
- Interior LED Lamps
- Interior CFL Fixtures (ENERGY STAR® Qualified) \*
- T5 or Lamps w/electronic ballasts
- Exterior CFL fixtures (ENERGY STAR® Qualified) \*
- Exterior LED lamps
- Exterior LED fixtures
- Occupancy sensors\*
- Torchiere\*
- Photocells
- Ceiling Fans (ENERGY STAR® Qualified)
- LED Pool and Spa lighting
- Vending Machine Controls
- Landscape/parking lighting
- High Performance Dual-Pane Windows
- Attic and/or wall insulation\*
- Floor insulation

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- Cool roofs/radiant barriers
- Space heating equipment
- Space cooling equipment
- Duct sealing and insulation
- Pipe insulation\*
- Air sealing/envelope: outlet cover plate gaskets, attic access weather-stripping, door weather-stripping, caulking, and minor home repairs. Minor home repairs predominantly are door jamb repair / replacement, door repair, and window putty\*

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- Electric storage water heaters
- Central system natural gas water heaters
- Natural gas water heater and/or boiler controllers
- Natural gas storage water heater
- Faucet Aerator\*
- Water Heater Blanket\*
- Water heater repair & replacement\*
- Package terminal air conditioners
- Unitary AC Units
- HVAC Quality Maintenance
- Brushless Fan Motor for Central AC
- Evaporative Coolers
- Programmable Thermostats
- A/C Tune-up (Central AC)\*
- AC Time Delay\*
- Evap coolers repair & replacement\*
- Refrigerators (ENERGY STAR® Qualified)\*
- High-efficiency Clothes Washers
- High-efficiency Dishwasher
- Central Natural Gas Furnace
- Furnace repair & replacement \*
- Cold Water Clothes Washers
- Low flow water fixtures
- Microwave-(displacing gas or electric oven use) \*
- Variable Speed Pool Pumps
- Programmable Thermostats (Common Areas only)
- Demand Control for Centralized Water Heater Recirculation Pump

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### ***Ineligible Measures***

The following upgrade measures will not be considered as part of the energy analysis for program participation:

- Solar photovoltaic
- Solar Thermal

- Cold water savings devices (e.g. toilets, irrigation systems, weather
- ~~Controls~~ controllers
- Green materials or certification
- Paint, carpet, cabinets, etc.

Combustion appliance safety testing will take place as appropriate.

**10. Budget/Timeframe:**

Please see Attachments A1 to A3 for details regarding each IOUs projected budget and timelines.

**11. Program Performance Metrics:**

In 2012, the first year of the pilot program and the last year of the current program cycle, data will be collected for baseline development. Program performance metrics may be developed, as applicable, in conjunction with the Energy Division’s plans to develop a comprehensive process to determine program objectives and short and long term program performance metrics, as described in the Energy Division’s “Framework of Indicators for Assessing Achievement of Long Term Energy Efficiency Objectives” for the 2013-2014 bridge period and beyond. The IOUs will report on pilot results in the Pilot Program Target Update Report for this program cycle.

**12. Methodologies to Test Cost Effectiveness:**

The IOUs will examine cost effectiveness of the various measures installed after gathering preliminary information from the pilot.

**13. EM&V Plan:**

Please see Attachments A1 to A3 for IOU plans for evaluation, measurement, and verification.

**14. Plan for Disseminating Best Practices and Lessons Learned; transferring these lessons to resource programs; schedule/plan to expand the pilot to statewide usage:**

Best practices and lessons learned for the Multifamily EUC Pilot will be disseminated via EUC and will likely include various channels, such as: incentives, education, and outreach programs. These channels will be used to inform resource programs on the successful practices and tools identified during the pilot.

A successful pilot would warrant ramping up the delivery of a comprehensive package of cost effective measures in order to reach existing multifamily homes and maximize their energy efficiency potential in future portfolio cycles.

~~**Plan for Disseminating Best Practices and Lessons Learned; transferring these lessons to resource programs; schedule/plan to expand the pilot to statewide usage:**~~

~~Best practices and lessons learned for the Multifamily EUC Pilot would be disseminated through EUC via incentives, education, and outreach programs to encourage resource programs to adopt successful practices and tools identified during the pilot.~~

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A successful pilot would warrant ramping up the delivery of a comprehensive package of cost effective measures in order to reach existing multifamily homes and maximize their energy efficiency potential in future portfolio cycles.

The proposed M&E plan included in SCE's EUC-MF pilot program is intended for use with the pilot only. The M&E plan below is designed for the Multifamily Path within the 2013-2014 PIP filing.

### **EUC-MF-Pilot & 2013-2014 Program PIP**

Identified multifamily market barriers to overcome: multifamily

- 1) Lack of customer (building owners and managers, and building tenants) awareness; limited program information available
- 2) Lack of access to financing
  - a. Need to address split incentives and cost of upgrades for multifamily owners/managers.
  - b. Integrate EUC-MF with Multifamily Energy Efficiency Rebate Program offerings
  - c. Where applicable, leverage EE financing programs to provide financial assistance to building owners and managers to make the comprehensive upgrade possible
- 3) Lack of skilled workers trained in energy efficiency concepts and installation

This pilot will not address barrier #2 until the latter half of 2012 when financing packages may be available.

To overcome other programmatic and design concerns, actions include:

- a. Creating a single point of contact that would assist the property owners/managers to navigate the incentive and retrofit process regardless of "income qualification" requirements and different program rules
- b. Targeting properties with planned or in-progress renovations to minimize time-burden and lost rental income.
- c. Addressing wide diversity of the multifamily properties through segmentation to ensure broad coverage and to meet special requirements
- d. Developing EE assessment and installation programs that minimize the disruption of tenants in the multifamily property market to multifamily properties on the basis of the company size; consider the number of individual units (bulk) that can be impacted via single program outreach efforts to the larger size property owners and managers.
- e. Using highly skilled and trained contractors to serve and implement program measures to ensure high quality installation, including a comprehensive apartment-wide building envelop audit, to assess the comprehensive needs of the property. Leverage contractors' client relationships and industry profile.

### **Objective of the Pilot & Researchable Questions**

- 1) Test program design parameters to support single-point of contact
  - a. How best to leverage and coordinate resources and savings across programs (i.e., ESA program, MIDI program ,EUC-MF program expenses, etc.)

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- 2) Program results reporting and quality control & inspection
  - a. How to address program installation verification and inspection process, and exceptions
  - b. Accuracy of the energy savings reported by the contractors
  - c. Appropriate program process steps, and QA & QC requirements without overburdening the program/s
  - d. Scope of the program inspection plan for the pilot, and the scaled program
- 3) Determine the optimal program implementation tools and tracking system for the scaled program
  - a. Which savings methodology(ies) or tool(s) should be adopted by the program to serve this market segment
  - b. What is the scope of the appropriate program tracking system
- 4) Implement best practices and lessons learned from prior evaluations or industry practices
  - a. Did the program implement lessons learned and/or industry best practice? If yes, what are the results? What improvements are necessary as next steps?

#### **Preliminary EUC-MF M&E Statement of Work (SOW)**

The IOUs will work jointly with ED to finalize the actual research plan. This project will likely have the following study components:

- 1) Ongoing Rapid M&E feedback
  - a. Previously, the M&E team implemented a rapid feedback process to take an in-depth review of the program's energy savings results and associated realization rates and program cycle-time. This information is used to fine-tune and streamline program design. The EUC-MF pilot will continue this practice.
- 2) Process evaluation
  - a. Verification of program theory and program logic model
  - b. Verification of program process and design, and assess the effectiveness of implementation and the program team's ability for ongoing process improvement, using the list of researchable questions above as the starting place
  - c. Verification of program QA/QC process and improvements
  - d. Verification of energy savings methodology(ies) and tool(s) using an independent third party evaluation team
  - e. Collect customer feedback from all touch points (e.g. Property owners/managers, contractors, tenants and various program teams)
  - f. Implement appropriate segmentation question batteries to allow for data analysis across key target groups
  - g. Recommendations for program design, implementation and marketing activities for the 2013 – 2014 full-scale program

IOU success will be defined by reaching the expected outcomes described in section 7. Lessons learned from each IOU will be shared and will inform the development of a statewide program.

Consistent with all M&E studies, ~~SC~~the IOUs will adhere to the collaborative framework agreed to by all parties.

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**EUC-MF Pilot & 2013-2014 Program PIP**

Identified Multi-family market barriers to overcome:-

- Lack of customer (building owners and managers, and building tenants) awareness and access to information about energy efficiency and program services available to them,
  - Improve property owners/managers' energy efficiency knowledge-
  - Working thru property owners/managers, offer information on energy efficiency savings to the tenants of multifamily buildings
- Lack of access to financing,
  - Address split incentives and cost of upgrades for multi-family owners/managers,
  - Integrate EUC-MF with Multi-family Energy Efficiency Rebate Program offerings,
  - Leverage SW financing program to provide financial assistance to building owners and managers to make the comprehensive upgrade possible.

Lack of skilled workers trained in energy efficiency concepts and installationTo overcome other programmatic and design concerns to serve all multi-family properties;

- Create a single point of contact that would assist the property owners/managers to navigator the incentive and retrofit process regardless of "income qualification" requirements and different program rules
- Target properties with planned or undergoing renovations to minimize time-burden and lost rental income;
- Address wide diversity of the multi-family properties through segmentation to ensure broad coverage and to meet special requirements
  - a. Develop EE assessment and installation programs that minimize the disruption of tenants in the mutlfamily property
  - Market to multifamily properties on the basis of the company size, consider the number of individual units that can be impacted via single program outreach efforts to the larger size property owners and managers.

The EUC-MF Pilot is designed to address barrier #1, #3 and #4. This pilot will not address barrier #2, since it would take time for the SW financing team to implement their program to make financing packages available to key targets. (Note from Andy F. — Financing pilots are designed to operate in 2<sup>nd</sup> half of 2012 — so be advised — there may be insights available pre-2013?)

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**EUC-MF Pilot Design**

Target specific properties using the following objectives:

- Single point of contact approach to guide property owners/managers through various program offerings, including offerings to address the needs of the participants for "Energy Savings Assistance Program (ESAP)", and "Moderate Income Direct Install (EUC-MIDI)" with appropriate measures;
- Use a limited group of highly skilled and trained contractors to serve and implement program measures to ensure high quality installation and high quality of program energy savings. This service will include a comprehensive apartment-wide building envelop audit to size the overall comprehensive needs of the property. Work thru existing contractor base that specializes in-servicing the multifamily sector, taking advantage of their client relationships and industry profile.

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- ~~— Since the actual methodology of comprehensive energy savings is not yet finalized. This program will experiment with multiple energy savings methodology as part of the pilot.~~
- ~~— Leverage all applicable lessons learned from the EUC-WH process evaluation.~~

**Objective of the Pilot & Researchable Questions**

- ~~— Test program design parameters to support single point of contact,
 
  - ~~— What is the engagement and marketing protocol?~~
  - ~~— What is the coordination protocol?~~
  - ~~— How to allocate various program charges (i.e., ESAP program expenses versus MIDI program expenses versus EUC MF program expenses)?~~
  - ~~— How to allocate various program energy savings?~~~~
- ~~— Program results reporting and quality control & inspection
 
  - ~~— How to address program installation verification and inspection process and exceptions?~~
  - ~~— Is the energy savings reported by the contractors accurate?~~
  - ~~— What is the appropriate program process steps, and QA & QC requirements without overburdening the program/s.~~
  - ~~— What is the scope of the program inspection plan for the pilot? Later, what is the scope of the inspection plan for the scaled program?~~~~
- ~~— Determine the optimal program implementation tools and tracking system for the scaled program
 
  - ~~— Which energy savings methodology/s or tool/s should be adopted by the program to serve this market segment?~~
  - ~~— What is the scope of the appropriate program tracking system~~~~
- ~~— Implement best practice and lessons learned from prior evaluation or industry practice
 
  - ~~— Did the program implement lessons learned and/or industry best practice? If yes, what are the results? What improvements are necessary as next steps.~~~~

**Preliminary EUC-MF M&E Statement of Work (SOW)**

~~The SCE M&E team will work jointly with ED and other IOUs to finalize the actual research plan. This project is likely to have the following study components:~~

- ~~— Ongoing Rapid M&E feedback— for the SCE EUC-WH program, the M&E team implemented a rapid feedback process to take an in-depth review of the program’s energy savings results and associated realization rates and program cycle time. This information is used to fine-tune and streamline program design. For the EUC-MF pilot, the SCE M&E team will continue this practice. This rapid feedback work scope is likely to be performed with SCE M&E staff.~~
- ~~— Process evaluation
 
  - ~~— Verification of program theory and program logic model.~~
  - ~~— Verification of program process and design and assess the effectiveness of implementation and the program team’s ability for ongoing process improvement using the list of researchable questions above as the starting place,~~
  - ~~— Verification of program QA/QC process and improvements,~~
  - ~~— Verification of energy savings methodology/s and tool/s using an independent third party evaluation team~~~~

- Collect customer feedback from all touch points: property owners/managers, contractors, tenants and various program teams;
- Implement appropriate segmentation question batteries to allow for data analysis across key target groups
- Recommendations for program design, implementation and marketing activities for the scaled program later in 2013-2014 program cycle

Consistent with all M&E studies, SCE will adhere to the collaborative framework agreed to by all parties. This above preliminary SOW will need to be approved by Energy Division M&E staff. SCE is likely to competitively bid this project plan. A mutually agreeable independent evaluation with both technical/engineering and process evaluation skills would be needed to support the above project scope.

**14. Plan for Disseminating Best Practices and Lessons Learned; transferring these lessons to resource programs; schedule/plan to expand the pilot to statewide usage:**

Best practices and lessons learned for the Multifamily EUC Pilot would be disseminated through EUC via incentives, education, and outreach programs to encourage resource programs to adopt successful practices and tools identified during the pilot.

A successful pilot would warrant ramping up the delivery of a comprehensive package of cost effective measures in order to reach existing multifamily homes and maximize their energy efficiency potential in future portfolio cycles.

The proposed M&E plan included in SCE's EUC-MF pilot program is intended for use with the pilot only. The M&E plan below is designed for the Multifamily Path within the 2013-2014 PIP filing.

**EUC MF Pilot & 2013-2014 Program PIP**

- properties through segmentation to ensure broad coverage and to meet special requirements

The EUC-MF Pilot is designed to address barrier #1, #3 and #4. This pilot will not address barrier #2, since it would take time for the SW financing team to implement their program to make financing packages available to key targets.

**EUC MF Pilot Design**

Target specific properties using the following objectives:

- Single point of contact approach to guide property owners/managers through various program offerings, including offerings to address the needs of the participants for "Energy Savings Assistance Program (ESAP)", and "Moderate Income Direct Install (EUC MIDI)" with appropriate measures;
- Use a limited group of highly skilled and trained contractors to serve and implement program measures to ensure high quality installation and high quality of program energy

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savings. This service will include a comprehensive apartment wide building envelop audit to size the overall comprehensive needs of the property.

- Since the actual methodology of comprehensive energy savings is not yet finalized. This program will experiment with multiple energy savings methodology as part of the pilot.
- Leverage all applicable lessons learned from the EUC-WH process evaluation.

#### **Objective of the Pilot & Researchable Questions**

- Test program design parameters to support single point of contact,
  - What is the engagement protocol?
  - What is the coordination protocol?
  - How to allocate various program charges (i.e., ESAP program expenses versus MIDI program expenses versus EUC-MF program expenses)?
  - How to allocate various program energy savings?
- Program results reporting and quality control & inspection
  - How to address program installation verification and inspection process and exceptions?
  - Is the energy savings reported by the contractors accurate?
  - What is the appropriate program process steps, and QA & QC requirements without overburdening the program/s.
  - What is the scope of the program inspection plan for the pilot? Later, what is the scope of the inspection plan for the scaled program?
- Determine the optimal program implementation tools and tracking system for the scaled program
  - Which energy savings methodology/s or tool/s should be adopted by the program to serve this market segment?
  - What is the scope of the appropriate program tracking system
- Implement best practice and lessons learned from prior evaluation or industry practice
  - Did the program implement lessons learned and/or industry best practice? If yes, what are the results? What improvements are necessary as next steps.

#### **Preliminary EUC-MF M&E Statement of Work (SOW)**

The SCE M&E team will work jointly with ED and other IOUs to finalize the actual research plan. This project is likely to have the following study components:

- Ongoing Rapid M&E feedback — for the SCE EUC-WH program, the M&E team implemented a rapid feedback process to take an in-depth review of the program's energy savings results and associated realization rates and program cycle time. This information is used to fine-tune and streamline program design. For the EUC-MF pilot, the SCE M&E team will continue this practice. This rapid feedback work scope is likely to be performed with SCE M&E staff.
- Process evaluation
  - Verification of program theory and program logic model,
  - Verification of program process and design and assess the effectiveness of implementation and the program team's ability for ongoing process improvement using the list of researchable questions above as the starting place,
  - Verification of program QA/QC process and improvements,

- Verification of energy savings methodology/s and tool/s using an independent third party evaluation team
- Collect customer feedback from all touch points: property owners/managers, contractors, tenants (if appropriate) and various program teams,
- Recommendations for program design, implementation and marketing activities for the scaled program later in 2013-2014 program cycle

Consistent with all M&E studies, SCE will adhere to the collaborative framework agreed to by all parties. This above preliminary SOW will need to be approved by Energy Division M&E staff. SCE is likely to competitively bid this project plan. A mutually agreeable independent evaluation with both technical/engineering and process evaluation skills would be needed to support the above project scope.

Comment [JMK1]: Look for ways to pare down, if possible.

**PG&E:**

The PG&E pilot will test a multifamily program delivery model using participating professionals in a range of building types, configurations and climate zones with the goal of achieving 10-20% whole building savings. The pilot will and help identify the most cost effective measures for multifamily buildings and the contractor/trade support required for implementing this complex program. This is a new customer segment for EUC and, as such, the IOUs will test a variety of program delivery types. PG&E will also test combustion appliance safety protocols in a multifamily context, use a single point of contact approach to optimize and customize the customer experience and integrate with the existing low income and core multifamily offerings.

Success will be achieved by reaching the expected outcomes described in section 7. Finally, lessons learned from each IOU will be shared and inform the development of a statewide program.

SDG&E will test the proposed MF whole building performance design aimed at achieving 20% average building performance energy savings utilizing a whole building approach similar to EUC SF in order for the MF segment to participate in and enjoy the benefits of comprehensive deep energy savings through whole building retrofits. Success will be achieved by reaching the expected outcomes described in section 7. Unique features SDG&E is testing through this pilot to achieve these outcomes are utilizing the consultant model vs. contractor model (Per SW HERCC recommendations); utilizing a single point of contact to assist property owners and raters in identifying comprehensive opportunities and leveraging of available programs and financing options. The pilot will also be testing ESAP integration processes with the whole building retrofit process.

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The EM&V method that will be used to determine the success of disseminating information associated with this pilot will be a survey instrument distributed to pilot participants. In the fall of 2012, a meeting will be held of the multifamily HERC participants, and the survey will be distributed at that meeting. The survey will include questions related to the best practices and procedures of energy saving methods for multifamily housing. The survey will be developed to determine if the participants were satisfied with the methods of information

dissemination, which dissemination practices worked the best and the level of information that was retained by the participants. The goal of the survey would be to determine if participants retained knowledge that was provided through the program and which methods were most effective achieving the goal of relaying energy saving information. From this survey, SDG&E is hoping to determine which methods are the best to disseminate information for multifamily whole house programs and to gain insight into the pilot activities that were most successful.

## Attachment A1: SCE/SCG Multifamily Energy Upgrade California Pilot

### 1. Projected Program Budget Table

Table 1 –

IOU	Total Administrative Cost	Total Marketing and Outreach	Total Direct Implementation Non-Incentive	Total Incentives	Total Program Budget by IOU*
SCE	\$200,000	\$100,000	\$238,000	\$1,462,000	\$2,000,000
SCG	\$100,000	\$50,000	\$112,000	\$738,000	\$1,000,000
<b>Total</b>	<b>\$300,000</b>	<b>\$150,000</b>	<b>\$350,000</b>	<b>\$2,200,000</b>	<b>\$3,000,000</b>

\*Does not include funding being leveraged into the treated buildings for services provided through other core EE programs and the ESA program.

### 2. Projected Program Gross Impacts Table – by calendar year

Table 2 –

	# of MF properties	# of MF units	kWh Savings	kW Savings	Therm Savings
SCE/SCG	20	1,700	1,416,100	1,360	116,025

### 3. Program Objectives

In accordance with the Strategic Plan, the MF EUC Program Pilot will coordinate with the Energy Savings Assistance Program (ESAP) and core EE Programs, such as MFEER. This integrated approach combines market-rate and income-qualified energy efficiency measures.

This integration effort provides the opportunity to educate building owners on the benefits of energy efficiency and conservation efforts spanning the range of needs for the multifamily market.

MF EUC Pilot will field test a single-point-of-contact approach to guide property owners through the various programs in retrofitting their multifamily property. This approach will provide support in understanding the various program rules and assistance in determining eligibility. The customer will be guided through a “clipboard audit” to establish feasibility and estimate project cost for MF EUC, with an eye toward leveraging all eligible programs.

The primary purpose of this pilot program is to test performance based approaches to the multifamily property owner market. Other considerations to meet all income strata and address split incentives for property owners and tenants may include a direct [install strategy](#), as well as prescriptive rebates through the existing MFEER Program.

While programs will be coordinated and integrated, their respective policies and procedures will be followed in the delivery of services. For example, the ESA program measures will be installed at no cost to income-qualified customers within the ESA program guidelines established at 200% or below Federal Poverty Guidelines (FPG), while MF EUC and MFEER will

address incomes above 200%. Operational efficiencies will be employed to streamline eligibility, income verification, and installation of measures.

Program Pilot objectives:

1. Achieve deep energy savings reduction for all participating properties, targeting 20% or greater savings,
2. Implement comprehensive measures that go beyond lighting,
3. Help participants better understand energy efficiency and its many opportunities, and maintain program savings by leveraging the Integrated ~~Energy Audit~~Energy Audit Tool (scheduled for launch in early 2012).

SCE/SCG intends to offer the Investment Grade Assessment at no cost to participants during the Pilot. SCE/SCG will utilize a professional energy consulting/auditing firm that has experience working with multifamily properties. It is expected that the selected firm will have consultants with qualifications such as Engineering degrees, Building Performance Institute (BPI) certifications, Home Energy Rating System (HERS) certifications, Leadership in Energy and Environmental Design (LEED) Accredited Professionals, and GreenPoint Rated Professionals.

#### **4. Program Strategy**

The program strategy is to offer attractive incentives to multifamily property owners/managers to overcome a wide array of regulatory, market, and financial barriers which may otherwise prevent the rehabilitation of existing multifamily properties. These incentives will partially offset the cost to achieve energy use reductions.

Energy savings for each project will be calculated using industry accepted energy assessment protocols. Additionally, energy savings will be verified by a certified energy rater or qualified professional before payments of incentives are issued to a property owner.

The MF EUC Pilot will offer incentives to property owners and managers with scheduled project rehabilitations who are willing to invest in a performance-based, whole-building approach. The incentives are designed to influence the implementation of comprehensive measures as part of the scope of previously planned rehabilitations.

#### **5. Program Implementation**

The program will provide financial incentives to owners/managers of multifamily buildings who undertake a comprehensive approach to energy efficiency retrofits and are able to achieve a minimum energy savings target. The program will establish standards and verification procedures to provide quality assurance, and validate energy savings.

The program aims to leverage the long-established relationships between property managers and their preferred subcontractors. This approach provides property owners with the flexibility to select the trade allies of their choice.



There are several economic, financial or regulatory events that prompt a property owner to upgrade a facility. However, there are a few discrete points in a building’s lifecycle when it is typically more convenient for energy efficiency improvements. To leverage these critical and infrequent opportunities, whole-building, performance-based incentives must be large enough to motivate owners to incorporate energy efficiency improvements.

**6. Incentives**

Incentives will partially offset costs to retrofit measures needed to achieve targeted energy-use reductions. Incentives will be offered on a tiered structure, paid on a “per dwelling unit” basis according to the total building energy savings percentage. The tiered approach will reward participants for realizing deeper savings. While a “per unit” approach enables participants to experience economies of scale with larger multifamily buildings.

**SCE/SCG**

Energy Savings Achieved	Incentive per Dwelling Unit
10%	\$ 700
15%	\$ 800
20%	\$ 1,000
25%	\$ 1,200
30%	\$ 1,400
> 35%	\$ 1,600

**7. Project Pre-Qualification**

Property owners will be required to provide basic information to determine the scope of the project, existing conditions, and available funds. The information provided on the pre-qualification form will help to determine if the project can reach the preset minimum energy savings achieved percentage.

The pre-qualification process will be supported by the Integrated Energy Audit Tool when it becomes available.

**Basic Energy Assessment (Basic Site Assessment)**

The Basic Energy Assessment will provide an opportunity to meet with property owners to conduct a high level energy assessment, validate the data provided, and assess the potential for property savings. The Basic Energy Assessment will help gauge customer commitment and determine if the projects have the potential to achieve minimum energy savings expectations. If the projects do not meet these savings targets, they will be referred to other applicable EE Programs.

**Advanced Energy Assessment and Modeling (Test in, Investment Grade Assessment)**

Investment Grade Assessments will be required to establish a baseline of the existing energy consumption for each property. The assessment will be conducted by an energy auditing professional using approved multifamily audit tools and procedures.

The audit tools evaluate potential measures based on least-cost, maximum benefit customized to each property’s needs. The tool provides property owners with information to help them select a mix of measures that will achieve their energy savings goals.

Once a property owner has selected the desired savings target, the owner’s own contractors implement the energy saving measures of the owner’s choice.

The MF Pilot was designed to pilot a variety of approaches to modeling savings. At this late date, however, the program will solicit consulting engineering services with expertise using eQuest, or other proprietary system-based engineering approaches, such as those used in Retro-Commissioning. Given the short time frame and limited budget, a comparative analysis of TREAT, EnergyPro, and other tools will have to wait for a post-occupancy EM&V study.

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**Perform Post Project Verification and Quality Assurance (Test Out, Savings Verification)**

At completion, the owner submits the required documentation for verification by an independent energy auditor. The energy auditor will verify the installation of measures, compliance with product specifications, and determine the savings target achievement. The auditor will use multifamily audit and modeling tools to determine savings.

The energy auditor will then submit a project report for IOU review and application processing.

**8. Customer Description**

The program will target multifamily owners and managers of properties located in SCG and SCE service Territory.

- Multifamily properties must contain a minimum of three dwelling units.
- Properties must be designated as multifamily residential by the Title 24 Building Energy Efficiency Standards, Part 6, which is defined as three or more attached dwelling units in a building.
- Properties cannot exceed four stories.
- Both affordable and market-rate properties qualify.

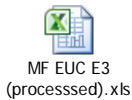
**Non-Qualifying Properties**

- Single-family homes - A single-family residential building is defined by the California Building Code as a single detached unit. Single-family homes may qualify for incentives through the EUC Single Family Program.
- Single-room occupancy (SRO) facilities, such as dormitories and assisted living facilities do not qualify.
- Non-residential buildings

- Hotels and Motels

**9. SCE/SCG's Cost Effectives (E3 Calculator):**

**Figure 1. E3 Calculator showing cost-effectiveness for Multifamily Energy Upgrade California.**



**10. Energy Savings and Demand Reduction Level Data:**

Program Impacts (Gross)					
	Annual Gross kWh	Lifecycle Gross kWh	Annual Gross Therms	Lifecycle Gross Therms	User Entered kW
2010-2012	1,666,000	29,988,000	136,500	2,457,000	1,600

**11. Program M&E Plan for SCE and SCG**

Energy Upgrade California: Multifamily Energy Upgrade California Pilot is proposed for implementation in two stages:

- Stage-1: Initial pilot phase to test program logistics and implementation requirements with a few raters and a few contractors.
- Stage-2: Scale the program for full deployment in 2012 and beyond.

**11.1.** The M&E plan for Stage-1 will focus on Rapid Feedback Analyses. Here are a few of the items to be considered:

- Is the program implemented as designed? If yes, are the results of the program activities acceptable from an end-to-end perspective?
- Can this program be evaluated given the program output and tracking data? If not, how can output and data be improved?
- Is the program design and implementation effective?
  - Is the program qualification acceptable?
  - Is the program processing acceptable?
  - Is the program QA/QC process acceptable?
  - What are the key issues and concerns for participating property owners/managers, renters, contractors and program contractors and HERS Raters? How can the program be improved?
  - Is the overall program cycle time acceptable?
  - Is the program energy savings accurate? If not, how can it be improved?
  - Is the program interaction with other programs, local government entities and stakeholders acceptable? If not, what is missing and how can it be improved?
- Is this program meeting its stated objectives given the output and outcomes of this early implementation?

- Verification of the program implementation barriers and identify ways to overcome the observed barriers.

**11.2.** The M&E plan for stage-2 will focus on the following items:

- Establish baseline condition for SCE [multifamily](#) energy usage profile as of 2008 and 2011 prior to program intervention.
- Has the program acted upon the rapid feedback? If yes, what are the changes?
- Is the program generating deep energy savings as expected?
- Is the program consistent with its program theory, logic model and attribution claims?

Repeat the evaluation items identified above, in the context of a scaled program.

SCE and SCG will work closely with ED's M&E team to develop an approved M&E study plan. Currently, we have identified the need for this study in the 2010-2012 M&E study plan.

## Attachment A2: SDG&E Multifamily Energy Upgrade California Pilot

### 1. Projected Program Budget Table

Table 1 –

IOU	Total Administrative Cost	Total Marketing and Outreach	Total Direct Implementation Non-Incentive	Total Incentives	Total Program Budget by IOU
SDG&E	\$75,000	0.00	\$125,000	\$800,000	\$1,000,000

Maximum SDG&E budget for trial is \$1,000,000 or 1,000 units, whichever occurs first, and would come from existing Whole House Program budgets. This would be used primarily for incentives and QA/QC.

ARRA funded County of San Diego [Multifamily](#) program total budget is \$826,902 for training marketing and outreach of raters and building owners.

ARRA funded City of San Diego [Multifamily](#) program total budget is \$1,079,683 for administration, marketing, outreach and education, and \$700,000 for additional incentives to both building owners and [multifamily](#) building raters. Building owners would receive additional incentives between \$350 and \$1,400 per unit depending on percentage of improvement. Building raters would receive between \$50 and \$200 per unit depending on percentage of improvement.

ARRA funded City of Chula Vista Energy Upgrade Carbon Downgrade program total budget is \$410,000 primarily for additional incentives to building owners in the form of matching the SDG&E Energy Upgrade California incentives for both single family and multifamily.

### 2. Projected Program Gross Impacts Table – by calendar year

Table 2 –

	# of MF properties	# of MF units	kWh Savings	kW Savings	Therm Savings
SDG&E	1,000	776,000	750	3,000	116,025

### 3. Program Objectives

In accordance with the Strategic Plan, the [MF](#) EUC Program Pilot will engage with the Energy Savings Assistance Program (ESAP), the Moderate Income Direct Install Program (MIDI) and core EE Programs, such as MFEER. This integrated approach combines market-rate and income-qualified energy efficiency measures.

This integration effort provides the opportunity to educate building owners on the benefits of energy efficiency and conservation efforts spanning the range of needs for the multifamily market.

MF EUC Pilot will field test a single-point-of-contact approach to guide property owners through the various programs in retrofitting their multifamily property. This approach will provide support in understanding the various program rules and assistance in determining eligibility. The customer will be guided through a “clipboard audit” to establish feasibility and estimate project cost for MF EUC, with an eye toward leveraging all eligible programs. While programs will be coordinated and integrated, their respective policies and procedures will be followed in the delivery of services. The ESA program measures will be installed at no cost to income-qualified customers within the ESA program guidelines established at 200% or below Federal Poverty Guidelines (FPG) and MIDI will address non-low income customers between 201% and 250% of FPG. Operational efficiencies will be employed to streamline income verification and installation of measures.

Program Pilot objectives:

1. Achieve deep energy savings reduction for all participating properties, targeting 20% or greater savings,
2. Comprehensive measure implementations that go beyond lighting measures,
3. Help participants better understand energy efficiency and its many opportunities, and maintain program savings by leveraging the Integrated Energy Audit Tool (scheduled for launch in early 2012).

#### 4. Program Strategy

This pilot will allow for WHRP participation for Multifamily buildings using a whole building performance approach coordinated with Energy Saving Assistance Program offerings.

The multifamily trial aims to train, mentor and outreach approximately 30 multifamily building raters and to achieve an average of 20% energy savings across a portfolio of 1,000 units by December 2012.

#### 5. Program Implementation

Timeline for Project	
Item/Task	Date
Project Initiation Meeting	11/2010
Training	5/2011 to 12/2011
Building Project Interest List Developed	11/2010 to 3/2012
Installations	7/2011 to 5/2012
Conclude Pilot	12/2012
Reporting	TBD
Evaluation	TBD
Draft Report (?)	TBD
Final Report (?)	TBD

## 6. Incentives

Incentives will be offered on a tiered structure consistent with single family whole house performance incentives, paid on a per unit basis, based upon total building energy saved. An additional \$100 per unit has been included to provide some offset for the high cost of rating a multifamily building and the combustion safety testing requirement. However, no incentives will be paid for just building ratings or combustion safety testing. Incentives are paid based upon successful completion of a whole building performance project, in accordance with program requirements, that meet the site energy savings as described below. Incentives will be paid to building owners only and cannot be designated to be paid to third parties. The following are the proposed incentive tiers:

SDG&E	
Energy Reduction Achieved	Incentive per Dwelling Unit
10%	\$ 550
15%	\$ 625
20%	\$ 800
25%	\$ 1,000
30%	\$ 1,200
35%	\$ 1,350
40%	\$ 1,500

## 7. Project Pre-Qualification/Assessment/Verification

1. Building owner submits letter of interest and authorization to serve ESAP eligible customers to HMG. HMG submits letter to SDG&E.
2. ESAP eligible customers who wish to be served by ESAP are served.
3. Notice sent by SDG&E to HMG who notifies building owners that they may proceed in selecting a participating HERS II MF rater and BPI MF BA.
4. Participating HERS II MF rater performs building audit.
5. A scope of work is proposed and signed off by rater, BPI analyst and building owner.
6. Project reviewed by HMG, changes may be proposed.
7. HMG approves project.
8. HERS II MF rater submits project package to SDG&E QA/QC provider.
9. Project is reviewed and field inspected by SDG&E QA/QC provider.
10. A reservation of funds is performed SDG&E and a Notice to Proceed is issued by SDG&E to rater. HMG and building owner are copied.
11. Building owner hires contractors to perform work.
12. BPI MF BA performs combustion safety tests as necessary during course of work.
13. Participating HERSII MF rater performs test-out building audit.
14. Completed work is signed off by rater and BPI Multi Family Building Analyst.
15. HMG reviews and approves completed work and test-out data.
16. HERS II MF rater submits completed project package to SDG&E QA/QC provider.

17. Completed project package is reviewed and field inspected by SDG&E QA/QC provider.
18. SDG&E QA/QC provider issues notices of completion and project summaries to SDG&E. Copies to rater and building owner.  
SDG&E processes incentive and sends check to building owner. Incentive payments may not be designated by building owners to third parties.

**Integration with other programs (if there is additional info to state beyond what is covered in general statewide overview)**

SDG&E will be partnering with and leveraging HMG's ARRA funded marketing, outreach and training contract with the County of San Diego with this SDG&E EUC MF trial rollout for whole building performance incentives. HMG's will recruit, train and mentor participating HERS II MF raters as well as recruit and assist interested multifamily building owners through the whole building performance retrofit process.

**Rater/Contractor Qualifications, Training**

Unlike the single family program which is a contractor model program, this multifamily trial will be a consultant model. Buildings will be modeled by certified HERS II MF raters who have been trained by HMG and placed on a participating MF rater list. In addition, each project will be required to have the project scope, pre-assessment, post assessment and health and safety plan signed off by a certified BPI Multifamily Building Analyst. The BPI certified individual may be the rater serving in a dual capacity, a contractor employee, or another party.

HMG and CalCERTS began MF HERS rater training in early May 2011 and will train approximately 20 raters during the program. The training is composed of 28-32 hours in the classroom and 6-8 in the field, followed by ongoing mentorship and support on an as-needed basis. Each rater will receive a multifamily rater manual to supplement the HERS II manual. SDG&E will be providing additional BPI Multifamily Building Analysts training in coordination with this training. HMG has been actively generating a MF building project interest list. It is expected that energy building ratings will begin in mid June 2011 and continue until June 2012.

As part of its ARRA funded contract with the County of San Diego, HMG will be offering HERS II MF rater training. In addition, SDG&E will be offering up to three (3) free BPI MF Building Analysts trainings. These two trainings will be offered in coordination with the curriculum streamlined to avoid duplications and avoid overlap. BPI BA certification will be a pre-requisite to attending the BPI MF BA training. Attendees of the HMG HERS II MF rater training will be provided first opportunities to attend the BPI MF BA training, provided they meet the pre-requisites.



## Measures (reference general statewide overview)

### Envelope

- Attic insulation upgrade
- Wall Insulation upgrade
- Floor insulation upgrade
- Window replacements – 2008 T-24 standard or better
- Cool roof – CRRC rated product
- Radiant barrier
- Window shading – Must be permanently attached to the building and non-retractable.

### HVAC

- Duct Sealing - with HERS test
- A/C equipment replacement – Must meet current T-20 standard
- Furnace replacement – Must meet current T-20 standard
- Premium efficiency motors (ECM included)
- VFD controls for CHW, HW, CW pumps
- VFD controls for cooling tower fans
- Pipe insulation – From ½ inch to 1-inch, or none to 1-inch
- Controls optimization (OA reset, zone reset)

### Domestic Hot Water

- Boiler or DHW replacement – Must meet current T-20 standard
- ~~Solar thermal~~
- Insulate hot water piping – From ½-inch to 1-inch, or none to 1-inch
- DHW tank insulation
- Add VFD to circulation pump
- Update central DHW pump to demand control – From no control to demand control

### Lighting

- Common area lighting fixtures – high efficacy hardwired fixtures
- Dwelling unit lighting fixtures – high efficacy hardwired fixtures
- Lighting controls – Occupancy sensor, photo sensor, or dimmer switch
- Outdoor lighting retrofits – high efficacy hardwired fixtures

### Energy Star appliances

- Energy Star Refrigerator
- Energy Star Dishwasher (if a dishwasher is installed in pre-retrofit condition)

Through its partnership with HMG, who is implementing multiple ARRA funded programs in collaboration with SDG&E's MF EUC pilot, customers may include solar thermal as an eligible measure through one or more of the ARRA funded programs and may include such as part of a comprehensive scope of work. However, SDGE will not recognize solar thermal as a measure for purposes of calculating savings related to incentives under this pilot.

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## 8. Customer Description

The Multifamily pilot will target all Multifamily sector buildings, including low-rise, high-rise, low income and market rate buildings and will be highly coordinated with SDG&E's Energy Savings Assistance Program.

## 9. Energy Savings Data:

For all low-rise multifamily buildings, SDG&E will utilize the CEC HERS II rating standard using the Energy Pro, Cal Rate Pro module for low-rise residential buildings (for TDV savings calculations) and the Residential Performance Module (for Site savings calculations). For all high-rise buildings, SDG&E utilize the Energy Pro, Non Res Module, for measurement of savings and determination of incentive levels. HMG is partnering with CEC on the continued improvement and evaluation of the Cal Rate Pro module.

The multifamily pilot goal is to achieve an average of 20% energy savings across a portfolio of 1,000 units. The estimated savings for this component during the program cycle is around 776,000 kWh, 750 kW and 33,000 therms.

## 10. Program M&E Plan for SDG&E

1. As part of its current process evaluations currently underway, SDG&E will include this pilot for process evaluation study.
2. Cost effectiveness and EM&V will be conducted in concurrence with Single Family building performance evaluations.
3. Information regarding lessons learned will be shared with statewide IOU's on an ongoing basis during the roll-out, implementation and evaluation stages of this pilot.
4. As this pilot will conclude near the end of this program cycle, expansion to a statewide resource program would not be considered this program cycle.

## 11. Marketing/Outreach

SDG&E will be providing little to no marketing resources for this pilot, but will be partnering with and leveraging HMG's ARRA funded marketing, outreach and training contract with the

County of San Diego with this SDG&E EUC MF trial rollout for whole building performance incentives.

## Attachment A3: PG&E Multifamily Energy Upgrade California Pilot

### 1. Projected Program Budget Table

Table 1 –

	<b>Number of Units</b>	<b>EUC Budget</b>
<b>Phase 1</b>	500	\$850,000
<b>Phase 2</b>	N/A	\$200,000
<b>Total</b>	500	\$1,050,000

<u>IOU</u>	<u>Total Administrative Cost</u>	<u>Total Marketing and Outreach</u>	<u>Total Direct Implementation Non-Incentive</u>	<u>Total Incentives</u>	<u>Total Program Budget by IOU</u>
<u>PG&amp;E</u>	<u>\$83,333</u>	<u>\$83,334</u>	<u>\$833,333</u>	<u>\$500,000</u>	<u>\$1,500,000</u>

NOTE: This budget breakdown detail is estimated and is subject to change after further detailed planning is completed in 2012 and after implementation learning occurs during the 2013-14 program period.

The ~~existing 2010-2012~~ proposed 2013-14 Energy Efficiency Portfolio EUC-WHUP subprogram budget will cover ~~the EUC portion of~~ Phases 1 and 2. Additional EUC-WHUP funding will be needed for additional phases. Any such funding requests will be made at a later date, if needed, after portfolio fundshifting options are explored first.

### 2. Projected Program Gross Impacts Table – by calendar year

PG&E plans to use modeled energy savings from the Phase 1 pilot jobs to inform future energy savings estimates. The other IOUs are estimating their savings based upon a prior program of similar scope in associated climate zones. PG&E, however, does not have comparable historical information. As such, PG&E will estimate future savings after analysis of the data collected in Phase 1 of the pilot.

### 3. Program Strategy/Implementation

PG&E seeks to implement a phased pilot approach to developing a multifamily component to Energy Upgrade California (“PG&E’s Multifamily Energy Upgrade California pilot” or “PG&E’s Multifamily EUC pilot”). This will allow PG&E to test the offering on a reasonable scale, understand best practices and areas for improvement, and then consider a larger scale roll out. The pilot will target an average of 10-20% measured whole building energy savings. The proposed phases are outlined below:

- **Phase 1:** In ~~2012~~2013, PG&E will target energy upgrades on five to ten multifamily buildings (expected to be approximately 500 units). The goal of this phase is to install measures in various multifamily settings, including a range of climate zones, building sizes (low rise and high rise), and configurations (central systems and in-unit combustion appliances) to understand the cost effectiveness of the various measures. This will also provide an opportunity to test implementing an integrated offering that coordinates with the Energy Savings Assistance Program (“ESAP”), Moderate Income Direct Install (“MIDI”), Multifamily Energy Efficiency Rebate (“MFEER”) programs, and other applicable programs. Perhaps most importantly, this will give PG&E the opportunity to better understand the necessary combustion appliance safety protocols for comprehensive and variable retrofits in multifamily buildings. PG&E plans to cover this phase under PG&E’s existing Energy Upgrade California budget.
  
- **Phase 2:** In late 2013~~2~~ early 2014~~3~~, PG&E will analyze the results from Phase 1. PG&E’s analysis will focus on identifying the most appropriate and cost effective measures, and examining additional lessons learned before moving forward with a larger roll out. Most importantly, PG&E plans to carefully study combustion appliance safety protocols related to variable, comprehensive, multifamily, whole building retrofits. While there exists standards for combustion safety related to prescriptive installation work (the Natural Gas Appliance Test in ESAP, for example), combustion safety protocols related to whole building multifamily retrofits warrant further investigation. PG&E plans to cover this phase under PG&E’s existing Energy Upgrade California budget.
  
- **Phase 3:** After Phase 2 has concluded, PG&E plans to launch a larger-scale roll out that targets energy upgrades for 2000 units in 2013~~-14~~. This phase will be an integrated offering informed by the lessons learned from Phases 1 and 2. Additional funding for this phase will be requested in a future filing.

#### 4. Integration

In addition to the new Multifamily EUC Pilot, there are already a number of programs available to multifamily building owners to improve building energy efficiency and tenant quality of life: ESAP, MIDI, MFEER, as well as other PG&E, Third Party and Local Government Partnership Programs that may be applicable. PG&E will explore the concept of instituting a Multifamily Energy Efficiency Manager (“MEEM”) to serve as a single point of contact for a multifamily building owner. The MEEM will be well-versed in the requirements for each of these programs, and will help the building owner decide which utility program, or combination of programs, best meet the building owner’s goals and budget. Once the appropriate program(s) have been identified, the MEEM will assist the building owner through the upgrade process. In addition, the MEEM will help connect the building owner with known financing programs available at the time of the upgrade. The goal of this process is to reduce building owner confusion while simultaneously helping the building owner maximize energy savings and tenant quality of life.

#### 5. Incentives

PG&E's Multifamily EUC pilot incentive structure will be tiered based on estimated whole building site energy saving ~~rangings~~ranging from 10%-40%. Incentives will be paid upon successful completion of the job on a per unit basis. The incentives will cover measures that contribute to whole building savings (i.e. central boilers, central water heaters, common area and in-unit upgrades, etc.), that have not been directly installed via participation in another program. Costs for assessments and combustion appliance safety testing will be incurred by the building owner. PG&E may alter the incentive structure throughout the course of the pilot to ensure the most cost effective implementation.

ESAP and MIDI will cover measures currently offered to low and moderate income multifamily tenants and building owners at no cost. Additional incentives can also be realized for non-EUC measures through the MFEER, and other applicable programs, and double dipping will be prevented in this pilot by utility program staff.

~~For incentives, PG&E assumed an average incentive of \$1000 per unit, which we view to be reasonable.~~ The incentive structure will be refined upon completion of jobs and additional analysis.

#### **6. Project Pre-Qualification/Assessment/Verification**

The MEEM will work with the building owner to pre-qualify a building and facilitate introductions for a preliminary walk through as needed (to confirm eligibility). Next, an investment grade assessment will be conducted to generate a scope of work that meets the building owner's energy savings goals. Simultaneously, a combustion appliance safety plan will be created that is specific to the scope of work. The proposed scope and combustion safety plan will be reviewed prior to issuance of a notice to proceed. Subsequently, the building owner will choose a participating contractor to install the agreed upon- scope of work. A BPI (Building Performance Institute) Multifamily Building Analyst will oversee and conduct all safety testing. Upon completion of work, a final assessment will take place to ensure proper and safe installation of the approved scope of work. Associated documentation will be submitted to PG&E for quality assurance and incentive processing. PG&E seeks to leverage the existing HERS (Home Energy Rating System) II raters, Energy Upgrade California participating contractors and BPI Multifamily Building Analyst networks to implement this work.

#### Non-Qualifying Buildings

At any point in the process, the building owner may decide not to pursue participating in PG&E's Multifamily EUC pilot. However, this does not prevent the building owner from participating in other utility programs. This is where the MEEM will play a critical role in connecting the building owner to the additional available utility programs.

Buildings served by propane are not eligible to participate.

#### Combustion Appliance Safety Testing

PG&E is committed to keeping customers safe. Because this comprehensive whole building pilot will be the first of its kind for California IOUs and will pursue deep energy upgrades in

multifamily buildings, the pilot will explore implementation of combustion safety protocols. This may include the BPI, Natural Gas Appliance Test (“NGAT”) and other industry protocols, as appropriate. \_

PG&E hired a third party consultant to assess the safety protocols used in other successful multifamily whole building programs. Using this information as well as the CA HERCC recommendations, the consultant created a “decision tree” to help guide the installation of measures in a multifamily building. PG&E seeks to test this decision tree approach in the pilot, especially given that the configuration and building types can vary vastly in the multifamily segment. PG&E will use the decision tree in conjunction with industry standard safety protocols.

At the conclusion of the pilot, PG&E will work with the participating professionals to solicit feedback on the decision tree approach, make updates (as necessary) and decide whether or not to adopt this approach for the statewide program.

At the time of the supplemental information request, the “Study on Multifamily Air Leakage Testing Strategies” was still in draft form. As the study becomes publically available, PG&E will review it and consider the recommendations in the pilot program design.

#### **Participating Professional Recruitment**

For Phase 1, PG&E will reach out to existing HERS II multifamily raters, Energy Upgrade California participating contractors and BPI Multifamily Building Analysts. PG&E will conduct an orientation event to prepare these professionals for work in Phase 1 of the pilot. Once the professionals commit to the pilot requirements, they will be eligible to perform work as a participating rater, participating contractor or participating BPI Multifamily Building Analyst (“participating professional”) under the pilot.

In Phase 2, PG&E will reach out to the participating professionals from Phase 1 to understand the challenges and opportunities realized during Phase 1. Resulting information will help to inform the recruitment strategy for Phase 3.

#### **Participating Professional Requirements**

The following are preliminary and summary requirements for participating in PG&E’s Multifamily EUC pilot and are subject to change as necessary throughout the pilot program.

- A participating rater must be a HERS II multifamily rater, attend an orientation session, and agree to the pilot requirements to participate in the pilot. Raters may be responsible for the preliminary walk through, investment grade assessment and final assessment.
- A participating contractor must be currently enrolled in Energy Upgrade California, properly licensed for that particular scope of work, attend an orientation session and agree to pilot requirements to participate in the pilot. Participating contractors will be responsible for installation of the measures agreed upon in the scope of work.

- A participating BPI Multifamily Building Analyst must be certified as a current BPI Multifamily Building Analyst, attend an orientation session, and agree to pilot requirements to participate in the pilot. BPI Multifamily Building Analysts will be responsible for preparing the combustion appliance safety plan and completing all safety testing.
- NGAT tests must be performed by qualified ESAP installers and/or PG&E inspectors according to existing ESAP program requirements.

For ESAP and MIDI measures, work must be performed by contractors authorized to work under those programs and who meet the program requirements.

For MFEER measures, the work must be performed by appropriately licensed contractor for the particular measure.

For all other applicable programs, work must be performed by those who are eligible to perform work under the respective programs.

#### **Measures**

For PG&E's Multifamily EUC pilot, PG&E will include measures listed in Section 7 of the statewide program description (Attachment A). PG&E will modify this measure mix as data is collected and the offering is refined throughout the pilot.

For ESAP, MIDI and MFEER, the existing approved measures will be allowed.

#### **7. Customer Description**

This pilot is for property owners and managers of multifamily buildings located in PG&E's service territory:

- Offered to PG&E gas and/or electric customers.
- Multifamily properties must contain a minimum of five units for participation in the PG&E Multifamily EUC pilot. For other programs, the multifamily properties must adhere to existing customer eligibility requirements for the respective programs.
- Both affordable and market-rate properties qualify.

#### **8. Energy Savings and Modeling Software:**

PG&E will use energy modeling software to generate energy savings for the pilot jobs. For low-rise multifamily buildings, PG&E proposes using the CEC HERS II rating standard using the Energy Pro, Cal Rate Pro module (for TDV savings calculations) and the Residential Performance Module (for site savings calculations) to calculate incentives. For high-rise buildings, PG&E proposes using Energy Pro, Non Residential Module, for measurement of savings and determination of incentive levels. PG&E will consider additional software tools, as appropriate.

Savings related to measures installed as part of integration efforts with ESAP, MIDI, and MFEER will only be claimed under those respective programs.



**9. Program M&E Plan for PG&E:**

PG&E's Multifamily EUC pilot team, in close consultation with ED, will submit a detailed Evaluation Measurement & Verification (EM&V) plan for program evaluation. The EM&V plan will include plans for continuously improving this integrated program offering. Phase 1 of the pilot will be informed by soon-to-be-available insights and recommendations that will be reported from the two Process Evaluations currently in progress: PG&E Energy Upgrade California Whole House Retrofit Rebate effort, as well as the traditional Multifamily Energy Efficiency Rebate program. These final reports are anticipated in the first half of 2012.

Drawing from these current studies, the EM&V plan will build on lessons learned in designing a unified and comprehensive evaluation plan. The evaluation efforts will provide the process and strategies for advancing the program's management of key issues including: split incentives between owners and renters; supportive and efficient procedures for participating contractors; effective outreach to building owners; and how to define and influence the decision points where energy efficiency upgrades can be included in building maintenance and improvement investments, among others. PG&E seeks to use Phase 2 to analyze the combustion appliance safety protocols as well as the cost effectiveness of the various measures installed. At the culmination of Phase 3, PG&E also recommends a deeper dive into the pilot's successes and challenges.

**10. Marketing/Outreach**

For Phase 1, PG&E plans to work directly with market stakeholders to identify buildings that meet the screening criteria.

Phase 3 marketing needs will be informed by the lessons learned in Phases 1 and 2.

**PG&E Gas and Electric  
Advice Filing List  
General Order 96-B, Section IV**

AT&T	Department of Water Resources	Norris & Wong Associates
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Clean Power	Merced Irrigation District	United Cogen
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Consumer Federation of California	Morrison & Foerster	Verizon
Crossborder Energy	Morrison & Foerster LLP	Wellhead Electric Company
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Day Carter Murphy	NRG West	eMeter Corporation
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