

## RTR Appendix

Southern California Edison, Pacific Gas and Electric, Southern California Gas, and San Diego Gas and Electric (“Joint Utilities” or “Joint IOUs”) developed Responses to Recommendations (RTR) contained in the evaluation studies of the 2013-2015 Energy Efficiency Program Cycle. This Appendix contains the Responses to Recommendations in the report:

***RTR for the SCE & SoCalGas Energy Upgrade California—Multifamily Pilot Process Evaluation*** (Opinion Dynamics, SBW Consulting; Calmac ID #SCE0395.01, ED WO #2040)

The RTR reports demonstrate the Joint Utilities’ plans and activities to incorporate EM&V evaluation recommendations into programs to improve performance and operations, where applicable. The Joint IOUs’ approach is consistent with the 2013-2016 Energy Division-Investor Owned Utility Energy Efficiency Evaluation, Measurement and Verification (EM&V) Plan<sup>1</sup> and CPUC Decision (D.) 07-09-043<sup>2</sup>.

Individual RTR reports consist of a spreadsheet for each evaluation study. Recommendations were copied verbatim from each evaluation’s “Recommendations” section.<sup>3</sup> In cases where reports do not contain a section for recommendations, the Joint IOUs attempted to identify recommendations contained within the evaluation. Responses to the recommendations were made on a statewide basis when possible, and when that was not appropriate (e.g., due to utility-specific recommendations), the Joint IOUs responded individually and clearly indicated the authorship of the response.

The Joint IOUs are proud of this opportunity to publicly demonstrate how programs are taking advantage of evaluation recommendations, while providing transparency to stakeholders on the “positive feedback loop” between program design, implementation, and evaluation. This feedback loop can also provide guidance to the evaluation community on the types and structure of recommendations that are most relevant and helpful to program managers. The Joint IOUs believe this feedback will help improve both programs and future evaluation reports.

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<sup>1</sup> Page 336, “Within 60 days of public release of a final report, the program administrators will respond in writing to the final report findings and recommendations indicating what action, if any, will be taken as a result of study findings. The IOU responses will be posted on the public document website.” The Plan is available at <http://www.energydataweb.com/cpuc>.

<sup>2</sup> Attachment 7, page 4, “Within 60 days of public release, program administrators will respond in writing to the final report findings and recommendations indicating what action, if any, will be taken as a result of study findings as they relate to potential changes to the programs. Energy Division can choose to extend the 60 day limit if the administrator presents a compelling case that more time is needed and the delay will not cause any problems in the implementation schedule, and may shorten the time on a case-by-case basis if necessary to avoid delays in the schedule.”

<sup>3</sup> Recommendations may have also been made to the CPUC, the CEC, and evaluators. Responses to these recommendations will be made by Energy Division at a later time and posted separately.

## Response to Recommendations (RTR) in Impact, Process, and Market Assessment Studies

**Study Title:** SCE & SoCalGas Energy Upgrade California—Multifamily Pilot Process Evaluation  
**Program:** EUC  
**Author:** Opinion Dynamics, SBW Consulting  
**Calmac ID:** SCE0395.01  
**ED WO:** 2040  
**Link to Report:** [http://www.calmac.org/publications/SCE\\_SoCalGas\\_EUC\\_MF\\_Pilot\\_Final\\_Report\\_2017-05-16.pdf](http://www.calmac.org/publications/SCE_SoCalGas_EUC_MF_Pilot_Final_Report_2017-05-16.pdf)

Item #	Page #	Findings	Best Practice / Recommendations (Verbatim from Final Report)	Recommendation Recipient	Disposition	Disposition Notes
				If incorrect, please indicate and redirect in notes.	Choose: Accepted, Rejected, or Other	Examples: Describe specific program change, give reason for rejection, or indicate that it's under further review.
1	5	Aspects of the properties upgraded through the Pilot compare favorably to those completed through the SDG&E pilot and the PG&E pilot. However, a valid comparison of all the costs and savings for all of the pilots should be conducted based on ex post savings and final program costs that account for both incentives and administration.	The six EUC multifamily pilots should collectively report on the following information in the future: conversion rates (full assessment to project), implementation cost (total, cost per project, cost per unit per project), and ex ante savings levels (ex ante savings per unit, ex ante savings per project, measure mix per project).	IOUs and CPUC	Other	To the extent possible, SCE/SoCalGas will report the items identified in the recommendation. However, many items are cost-shared and allocated across multiple programs, making this cost analysis not exacting. Going forward, SCE and SoCalGas will report these items on a best effort basis.  As a result of this pilot, the SCE/SoCalGas could modify and streamline future program design and implementation. In addition to “conversion rate” as defined by ODC, the SCE/SoCalGas program team was also able to identify uptake from (1) Basic Audit to Comprehensive Audit (at 29%) and (2) Comprehensive Audit to Project Adoption (45%) as indicated in the report (page-7). We believe these are two very important conversion rates to track since they are the leading indicators of the program pipeline.  PG&E and SDG&E generally agree with the above reply.
2	5	A comparison of the gross savings realization rates across the pilots will also help determine the effectiveness of SCE/SoCalGas’s unique approach of using billing data to calibrate the ex ante modeled savings estimates.	The six EUC multifamily pilots should report on savings accuracy as indicated by realization rates comparing ex ante savings to ex post savings per project.	IOUs and CPUC	Other	This recommendation is more relevant to the eventual program ex-post impact evaluation. Since the 2015 Focused MF Impact Evaluation Report in draft is available, SCE/SoCalGas did a quick review of the report findings. This study had to aggregate multiple projects from multiple IOUs into meaningful summary results. The study results at the specific project level are clearly available but not reported at the detailed specified (i.e., per project) by this ODC process evaluation study.  PG&E and SDG&E generally agree with the above reply.
3	7	Several property owners struggled with estimating their incentive payments based on Assessment Reports and complained that the savings and incentive calculation process lacked transparency. Less-expe-	We recommend that the IOUs (SCE/SoCalGas) develop better communication tools regarding incentives and qualifying measures.	Multiple IOUs (specified in recommendation)	Accepted	Energy assessment reports provided to property owners offered a lot of information which SCE/SoCalGas. For this reason, SCE/SoCalGas utilized its Utility Consultants to serve as the Single-Point-of-Contact (SPOC) to assist customers and walk them through the participation process. The SCE/SoCalGas program

		rienced property owners and contractors had difficulty identifying the products that would qualify for incentives. Some property owners had difficulty with what portion of their project would be covered through incentives given that energy upgrades were often part of a larger retrofit that may have included non-energy-related improvements.				team agrees that future communication should be more streamlined and concise. The SCE/SoCalGas team will continue to rely and improve on the SPOC to make Program participation more productive and effective for customers.  PG&E and SDG&E generally agree with the above reply.
4	8	Reflecting the Pilot’s design to limit costs by providing Comprehensive Audits only to serious participants likely to achieve 10% site savings, about one-third of initial prospects that completed a Basic Assessment also completed retrofits through the Pilot (15 of 51, or 29%). About one-half of properties (45%) that UCs recommended for the more resource-intensive Comprehensive Assessments did end up completing Pilot upgrades (15 of 33)... It appears that in the SCE/SoCalGas Pilot, the Basic Assessment was a good way to cost-effectively mitigate this concern while still offering free Comprehensive Assessments to truly viable program candidates.	We recommend that the IOUs consider continuing to require an on-site Basic Assessment while still allowing the flexibility for a telephone assessment in cases where enough information can be captured via telephone.	Multiple IOUs (specified in recommendation)	Accepted	Agreed, vetting out projects at the earliest point will help determine project viability and is very helpful in managing cost and expectations.  PG&E and SDG&E generally agree with the above reply.
5	9	Although few contractors held energy efficiency certifications beyond their general contracting licenses, property owners were, in most cases, satisfied with their contractors. Moreover, the UCs reported few inspection failures related to installation issues. Property owner complaints about contractors were isolated and seemed to occur in cases where either the property owner or the contractor had less experience in whole-building energy efficiency upgrades.	To preserve the open contractor model, the IOUs (SCE/SoCalGas) should continue inspecting contractor installations, but consider using specific forms to document any installation issues and providing protocols about how to direct contractors toward training resources as needed.	Multiple IOUs (specified in recommendation)	Other	The pilot program design relied on the Utility Consultants to perform project inspections. SCE/SoCalGas agrees that inspection reporting could be improved to track nuances of the inspection process. Future iterations of the program will include standardized documentation and inspection processes.  PG&E and SDG&E generally agree with the above reply.
6	9	Broadly speaking, program manager feedback indicates that the originally-envisaged Pilot period (1 year, from 2013 to 2014) was too short. Beyond several project-specific delays due to CAS test results and managerial staff turnover at participating properties, whole-building multifamily property upgrades are inherently a longer-term process due to their complexity and level of coordination. The IOUs needed about 2 years for the Pilot and would likely need at least 2- to 3-year program cycles. Most property owners want a “phased implementation” plan over a longer period, suggesting a program that allows phased participation over 2–3 years could best accommodate market-rate properties.	We recommend considering a rolling program design and its implications on a given implementation cycle time. It is worth considering whether the IOUs (SCE/SoCalGas) can support a longer-term, rolling unit participation model. This would be a drastic shift in program design and would require a longer-term commitment to the customer but may be worth considering.	Multiple IOUs (specified in recommendation)	Rejected	SCE/SoCalGas - The rolling portfolio would help large whole building projects that require multiple years to implement. It needs to be understood though, that Code changes complicate rolling program design. The proposed layered services approach will allow multi-year implementation and come close to this recommendation  PG&E - Whole building retrofits are compared to the relevant Title 24 code in effect when the project is permitted. This code changes complicate rolling program design, making this recommendation not feasible to implement.  SDG&E generally agrees with the above replies.

7	9	Structural barriers to high program uptake remain in the marketplace. These barriers arise because multifamily customers may prefer staggered in-unit rehabilitation projects on tenant turnover (according to property owners interviewed in this evaluation), because customers with gas measures may be turned away by the added liability and costs related to CAS testing required through the EUC Pilots (according to two of the three UCs, and some property owners interviewed in this evaluation, as well as findings from the PG&E EUC-MF pilot), and because customers still need to be educated on their portfolio of properties.	To serve the customer best, it may make sense to have one statewide multifamily program design and incentive structure. Such a program might still be able to offer several different sub-options.	CPUC	Rejected	This recommendation may not be implementable as a result of the diverse nature of the market segment which includes the variety of building stock (e.g., high rise, garden style, etc.) and ownership types (e.g. affordable, market-rate, etc.). Next, engagement strategies for small to large property operators require active participation in local trade organizations and associations. Lastly, given the needs of the Low-income population and other locational needs, we recommend for the MF program teams to continue careful dialog and program coordination to facilitate EE investments and project adoptions. PG&E and SDG&E generally agree with the above reply.
8	9	While marketing efforts are limited in this Pilot, the UCs leveraged existing relationships with property owners to attract customers. In addition, the IOUs had a number of interested customers at hand and referred them to the UCs. Therefore, this Pilot did not intend to test ways to best market and target customers in the program cycle. In other jurisdictions, some low-cost data analytic tools are used to target buildings with the greatest need for the upgrades.	To target customers in the future, the IOUs (SCE/SoCalGas) should consider leveraging or building on analytic tools that track and benchmark energy and water use for multifamily properties.	Multiple IOUs (specified in recommendation)	Accepted	SCE/SoCalGas are currently piloting this concept through the 10-10-10+ pilot implementation. MF benchmarking implementation requires data aggregation of tenant accounts and common area accounts, leveraging available real estate data bases, and analytics to generate building wide Energy Usage Index (EUI) and Building Score. PG&E and SDG&E are concerned about the complexity and data limitations of obtaining MF-building specific EUI and Building Score. PG&E and SDG&E will be tracking SCE/SoCalGas's pilot results for lessons learned.
9	12	The IOUs spend several hours per project verifying the UC estimates. This could be a reasonable amount of effort to support a scaled program, depending on the annual participation expectations. Anecdotally from the IOU engineering staff, we gathered that most of the issues found during their engineering desk reviews involved proper modeling of baseline and upgraded equipment (e.g., measure capacity, efficiencies, or quantities), ensuring that model outputs matched report tables and text, and clarifying discrepancies within report tables and text. Fixing these issues apparently resulted in changes to the UCs' initial estimates within ±5%. While this may not seem like a large difference, given that incentive levels change based on the percent of savings expected, this engineering review is likely very important to uphold as this program goes to scale.	The SCE/SoCalGas engineering team should document the common errors and issues that it had during the Pilot and translate them into a manual or checklist for the UCs to follow to help reduce the IOU review time. In this effort, it would be helpful to include a tabulation of the causes often driving the back-and-forth between SCE engineers and UCs. These common methodological discrepancies could then be addressed in future UC training efforts to serve as a part of feedback loop.	Multiple IOUs (specified in recommendation)	Accepted	SCE/SoCalGas appreciates this recommendation. However, there are many lessons learned to be absorbed from this pilot. To support scaled deployment, the program design must be simplified and cost-reduced. SCE/SoCalGas have carefully reviewed the 2015 Focused MF Impact Evaluation Study by Apex/DNV-GL and Itron, it would seem that multiple prongs of program improvements are needed: (1) improve targeting to reduce free-ridership, (2) improve modeling efforts to improve ex-ante energy savings estimate to improve program realization rate, (3) streamline implementation process to shorten the duration of project, (4) improve identification of proper project baseline and more. SCE/SoCalGas agree that the inspection process can also be improved upon. PG&E and SDG&E generally agree with the above reply.
10	12	the IOUs did not do any on-site verification or inspection of any of the projects and only verified the project information provided by the UCs via a desk review. It remains a question as to how reliable the	If the impact evaluation finds a large difference in ex ante and ex post savings, then the SCE/SoCalGas may need to begin some inspection of a sample of the projects conducted in the future to ensure that program recordkeeping is not a contributing factor.	Multiple IOUs (specified in recommendation)	Accepted	SCE/SoCalGas appreciate this recommendation. Please refer to our reply Item-#9 above. PG&E and SDG&E generally agree with the above reply.

		UC information is because ex post impacts have not yet been calculated.				
11	12	The UCs estimated energy savings by modeling the measures and building characteristics in EnergyPro software. The Pilot added one more dimension to this stage by calibrating the models of baseline energy use to reflect the properties' billing, or usage history. Calibrating EnergyPro models to building energy usage histories benefited the accuracy of savings modeling, but was a time-intensive process. Calibration is both an art and a science, and not all adjustments made during the calibration phase were documented. Based on our review, some building assumptions were not accurate.	Moving forward, we recommend better documentation and justification for the EnergyPro modeling adjustments that UCs make during the calibration phase.	Multiple IOUs (specified in recommendation)	Accepted	SCE/SoCalGas appreciate this recommendation. Please refer to our reply Item-#9 above. PG&E and SDG&E generally agree with the above reply.
12	15	Only one of five interviewed property owners reported issues with measure installation quality or their contractors; this individual reported that their contractor installed products that did not meet the minimum performance requirements set out by the program. Some property owners (two of five) reported issues related to translating Comprehensive Energy Assessment recommendations into practice. Some property owners also struggled with how their choices would impact the potential savings and incentive levels.	To smooth out measure selection and installation, we recommend that the IOUs (SCE/SoCalGas) or the UCs provide additional guidance and communication during these steps, such as restructuring reports to provide more actionable information or by formalizing the technical assistance to property owners that helps them understand what measures to select, how incentive levels will be impacted based on different scenarios and clear communication regarding what is covered by the program in light of other non-energy-related costs.	Multiple IOUs (specified in recommendation)	Accepted	Please also refer to our reply at Item-#3 above. For SCE/SoCaGas, once the account executive hands off a project, the Utility Consultant take on the role of SPOC. The expectation is that they will continue assist property owner by reviewing audit findings and reports and investment recommendations. There is a fine balance between too much and too little detail, SCE/SoCalGas strives to provide sufficient information, while not overwhelming MF property owners. Our goal is to provide the sufficient guidance to MF property owners that will allow them to make the best possible EE improvements to their property. PG&E and SDG&E generally agree with the above reply.
13	15	Beyond the learning curves a Pilot typically faces, we also observed that reporting requirements tested in the Pilot did place a relatively higher burden on the UCs and IOU program staff than the UCs recall experiencing in other multifamily programs. Further, while some property owners appreciated the detailed reports, others thought that they were too technical and not actionable enough. In short, the Pilots' reports apparently provided information that was either too detailed or not timely enough for some property owners, yet not detailed enough to provide sufficient documentation of engineering model development and calibration steps.	The Pilot program experience suggests that IOUs can improve the reporting process by developing several smaller, more specialized reports that each target a specific program stakeholder's informational needs, including a customer-focused assessment report, a verification-focused technical report, and an energy-savings report.	Multiple IOUs (specified in recommendation)	Accepted	SCE/SoCalGas appreciates this recommendation. Please refer to replies in Items-3 and 12 above. SCE/SoCalGas will continue to strive for a cost effective implementation process that will provide MF customers the most pertinent information while meeting program implementation and data tracking requirements. The reporting requirements, the scope of customer audit information, and QA/QC processes will all be a part of program re-design considerations. PG&E and SDG&E generally agree with the above reply.