RTR Appendix

Southern California Gas Company (SoCalGas) developed Responses to Recommendations (RTR) contained in the evaluation studies of the 2013-2015 Energy Efficiency Program Cycle and beyond. This Appendix contains the Responses to Recommendations in the report:

RTR for the Forward-looking Smart Thermostat Study Impact Evaluation (DNV, Calmac ID #CPU0367.01)

The RTR reports demonstrate SoCalGas' plans and activities to incorporate EM&V evaluation recommendations into programs to improve performance and operations, where applicable. SoCalGas' approach is consistent with the CPUC Decision (D.) 07-09-043[1] and the Energy Division-Investor Owned Utility Energy Efficiency Evaluation, Measurement and Verification (EM&V) Plan[2] for 2013 and beyond.

Individual RTR reports consist of a spreadsheet for each evaluation study. Recommendations were copied verbatim from each evaluation's "Recommendations" section.[3] In cases where reports do not contain a section for recommendations, the SoCalGas 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), SoCalGas 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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1 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."

2 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.

3 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: Forward-looking Smart Thermostat Study
Program:
Author: DNV
CALMAC ID: CPU0367.01
ED WO:
Link to Report: Forward-looking Smart Thermostat Study

MANAGEMENT APPROVAL AFTER REVIEW		
	Name	Date
SCG Programs	Darren Hanway	05/22/2025
SCG RP&R	Roy Christian	05/28/2025

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				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.	Next Steps: For each accepted recommendation, outline the steps required for implementation, responsible parties, and deadlines. For each rejected recommendation, document the reason provided for rejection. Outline any potential follow-up actions or considerations for the future.	Timeline: Set deadlines for the completion of each action. Include a start date and end date when possible.	Status: Track the status of each action item (e.g., Not Started, In Progress, Completed).	Notes: Add notes for any additional information or updates.	Impacted Programs: Identify which programs (program IDs) would be impacted by the action items.
1	40	Our analysis indicates that the proportion of vulnerable customers (DAC, HTR, and non-metro area customers) receiving smart thermostats via direct install programs has increased significantly from PY2018 through PY2021, even as the participation of customers from these segments in smart thermostat rebate programs has remained flat. Participation of multifamily customers in direct install programs has also been significantly high at 57% over this period. These findings indicate improved targeting of these populations.	Direct install programs should continue serving the state's vulnerable customers, given this customer segment's limited resources to take advantage of rebate programs' EE offerings. Direct install programs should also continue serving the multifamily sector, which makes up one-third of the state's residential population since this is the primary channel for multifamily households to access IOU EE program offerings.		Accepted	SoCalGas has multiple programs aimed at Direct Installation of technologies to underserved (HTR/DAC) customers.	SoCalGas currently administers four DI programs serving DAC/HTR. The programs will run until 2027.				3861, 3884, 3885, 3889, 3935, and 3936
2	40	Top-quartile energy consumption rebate program participants achieved significant higher electric and gas savings than customers in lower energy consumption quartiles, at 151 versus 3 kWh per household and 12 versus -6 therms per household, respectively.	Smart thermostat savings may be improved by factoring in household energy consumption levels in program targeting. Rebate programs should consider using the level of energy consumption as a key targeting variable.		Other	SoCalGas provides rebates for smart thermostats through the SoCalGas Marketplace program. SoCalGas will evaluate whether the program is capable of conducting consumption-based targeting.					861, 3884, 3885, 3889, 3935, and 3936
3	40	The single consistent modeling approach we used in the study	When feasible, evaluations should identify and correct for		Other	This recommendation is not directed towards SoCalGas. During the next	n/a				

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		addresses self-selection bias identified in previous evaluations. Model estimates indicate that the energy consumption trends of participants and non-participants are different and statistically significant. These differences affect estimated electric rebate and direct install smart thermostat savings but have limited effect on gas savings. When moving from a model that does not account for trend differences to one that does, rebate smart thermostat savings go from negative to positive, and direct install smart thermostat savings go from positive to a small negative number.	these possible biases when estimating the effect of opt-in programs using consumption data analysis.			Smart Thermostat Impact evaluation, the *ex post* team should consider this recommendation.					
4	41	The evidence suggests that energy savings from smart thermostats installed in PY2018 have increased over time despite the possibility that COVID-related increased occupancy eroded the saving potential for thermostats. DNV's new model results, presented in Table 4-12, show that electric and gas savings, from both the rebate and direct install channels, are higher when estimated using data from all post-years compared to the first post-year, which was pre-COVID. Device information DNV received also indicates that average HVAC cooling runtimes decreased in 2021 compared to 2019.	Thermostat optimization could improve smart thermostat energy savings performance. Additional studies that track smart thermostat savings over time are needed to strengthen this finding.		Other	The updated savings estimates from this impact evaluation were unable to be integrated into the PY2026 measure package update for smart thermostats. Measure package savings are broken out by Building type, climate zone, and HVAC type. The savings from this report were not granular enough to adopt into the measure package. If the Impact Evaluations do not provide data/results in a format that can be translated to the measure package, it presents challenges to integrate in future measure package updates. As evaluated smart thermostat savings are low and the findings of each study are varied, future impact evaluations on the technology are unnecessary.	The updated savings from this study were considered for the PY2026 measure package update but were unable to be integrated.		Completed		
5	41	Previous smart thermostat savings may have been overstated. The current panel and previous DID evaluation results indicate similar findings when neither corrects for trend differences (Table 4-11). However, the current model results reveal that the prior PY2018 ad hoc corrections somewhat overstated rebate electric and gas savings. They also indicate that the PY2019 electric direct install evaluation	We recommend continued evaluation of new installations to confirm the results identified in this study.		Rejected	Since 2020, four evaluations of smart thermostat impacts have been conducted, yielding varied savings estimates. Due to the low savings and inconsistent findings, SoCalGas does not recommend further evaluations of smart thermostats.	n/a				

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		may have overstated savings.									
6	41	Both rebate and direct install non-HTR participants have electric savings, while HTR and multi-family participants do not. Participants in the latter two groups likely reside in less efficient homes than non-HTR and single-family participants and experience higher levels of energy deprivation. Customer responses from participant surveys conducted for DNV's impact evaluations of the PAs' PY2018, 2019, and 2020 rebate and direct install programs indicate a significant increase in customer comfort post smart thermostat installation. While direct install program participants received multiple measures along with smart thermostats, such as duct sealing and HVAC motor replacement, that could have contributed to increased comfort, smart thermostats' promise to regulate and reduce energy use and cost could have led some of these participants to increase their comfort and use more energy.	There is higher energy consumption post-installation among some customer segments. Given this, we recommend improved customer education on how smart thermostats work and how they provide energy and cost savings. The PAs cannot require "eco" settings on these program-provided thermostats, but they need to find a way to encourage more participants to adopt those settings		Accepted	Providing training and education are something each of our DI implementers are required to complete. SoCalGas will continue to enforce this requirement.	SoCalGas will review the installation process with implementers to ensure customers are being informed of thermostat operations and trouble shooting.	March 2025			3861, 3884, 3885, 3889, 3935, and 3936
7	42	Savings estimates for installations of Technology type 1 are approximately triple the savings estimates for installations of Technology type 2. Unlike direct install programs that delivered largely the same smart thermostat technology type to participants, rebate program participants purchased different smart thermostat types. Using these data, DNV estimated the electric savings of technology 1 to be 55 kWh per household and technology 2 to be 17 kWh per household. Neither technology type provided statistically significant gas savings.	The savings potential of smart thermostats continues to change even after installation due to software updates. Programs should factor in variations in technology and evolving algorithms that result in notably different outcomes when considering this measure for programs. PAs should assess savings by specific technologies periodically to understand if there are differences and calibrate technology/measure package recommendations.		Other	Measure packages must maintain manufacturer neutrality for all equipment. Energy efficiency policy does not allow for measure packages to be written for specific manufacturers of a technology. Due to the proprietary nature of the control algorithm, it is difficult to analyze the difference in savings between manufacturers. Measure package savings are revisited bi-annually using the best available data.	The measure package was updated for PY2026 and will be re-evaluated for PY2028				
8	42	CPUC D. 21-12-015 (in Rulemaking R.20-11-003), adopted in December 2021, is designed to achieve load reduction in hot climate zones 9-15 and directs PAs	There are program opportunities to increase smart thermostat penetration in households with air-conditioning in hot climate zones. Programs should		Other	This is not directed at SoCalGas. SoCalGas was not a party to D.21-12-015 and does not have any demand response programs as a single-fuel gas utility. This recommendation will be passed	n/a				

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		to subsidize smart thermostats for customers in these climate zones. The absolute number of smart thermostats installed cumulatively in these climate zones through the PAs' direct install programs from PY2018 through PY2021 is approximately 286,000. The total installed base of smart thermostats in these climate zones is greater than 286,000 as it will also include those provided at low to no-cost by other energy efficiency programs like Energy Savings Assistance (ESA) and non-program adoption of smart thermostats. Assuming a non-program smart thermostat adoption rate of 25% and a statewide average annual ESA program footprint of 260,000, the smart thermostat installed base is likely lower than the estimated 3.5 million of five million households that use air-conditioning in these specific climate zones. Households with air-conditioning contribute to grid stress from increased cooling demand during peak periods from May through October. These households represent ideal targets for energy efficiency and demand response programs that deploy smart thermostats.	aim to expand the penetration of smart thermostats that can be operated as part of a "fleet" that can serve as virtual power plants (VPPs) to provide direct relief to these overloaded parts of the grid.			along to the relevant electric utility partners.					
9	43	The peak load reduction potential of smart thermostats makes them suitable for use in DR programs. However, DR program enrollment among smart thermostat program participants has been modest at 7% for rebate program participants and no more than 6% for direct install participants.	Programs delivering free or subsidized smart thermostats should consider automatically enrolling direct install program participants in DR programs with an opt-out option and providing information on DR programs for rebate program participants to maximize peak load savings.		Other	SoCalGas does not have any demand response programs as a single-fuel gas utility. This recommendation will be passed along to the relevant electric utility partners.	n/a				