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 and beyond. This Appendix contains the Responses to Recommendations in the report:

RTR for the Impact Evaluation of Smart Thermostats: Residential Sector—Program Year 2019 (EM&V Group A) (DNV GL, Calmac ID #CPU0232.01, ED WO #GroupA_Res_1_YR3)

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 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 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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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: Impact Evaluation of Smart Thermostats: Residential Sector—Program Year 2019 (EM&V Group A)
Program: Residential
Author: DNV GL
Calmac ID: CPU0232.01
ED WO: GroupA_Res_1_YR3
Link to Report: http://calmac.org/publications/CPUC_Group_A_Residential_PY2019_SCT_Final_Report_CALMAC.pdf

					PG&E (if applicable)		SCE (if applicable)		SCG (if applicable)		SDG&E (if applicable)	
Item #	**Sec. #**	**Findings**	**Best Practice / Recommendations (Verbatim from Final Report)**	**Recommendation Recipient**	**Disposition**	**Disposition Notes**	**Disposition**	**Disposition Notes**	**Disposition**	**Disposition Notes**	**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.	Choose: Accepted, Rejected, or Other	Examples: Describe specific program change, give reason for rejection, or indicate that it's under further review.	Choose: Accepted, Rejected, or Other	Examples: Describe specific program change, give reason for rejection, or indicate that it's under further review.	Choose: Accepted, Rejected, or Other	Examples: Describe specific program change, give reason for rejection, or indicate that it's under further review.
1	5.1, 5.4	There are no discernible gas savings from direct install programs and low gas savings from rebate programs. These results are consistent with other studies.	Consider eliminating gas savings claims for direct install smart thermostats.	CPUC, All PAs	Rejected	PG&E follows agreed upon savings assumptions dictated in Smart Thermostat Workpaper (SWHC039). When values are updated by the CPUC, PG&E adopts the latest savings values and assumptions. There are several reasons why PG&E may extend offering SCTs in its direct install programs: • First, since direct install programs included multiple measures, DNV focused the 2018 impact evaluations on SCT rebate programs exclusively. Consequently, only one year of SCT impact evaluation results is available. The 2020 impact evaluation plan includes SCTs. • Estimating gas impacts is more challenging due to greater measurement error so having a second year of results for direct install programs will be beneficial to determining gas savings in direct install programs. • Third, the 2019 impact evaluation examined second-year SCT savings for the 2018 program to understand the impact of the pandemic on residential customer behavior, but this analysis was confined to electricity. • Finally, SCTs installed through the direct install program may offer a viable platform for demand response programs.	Other	SCE will evaluate future workpaper updates to exclude gas savings for direct install smart thermostats.	Other	Smart thermostat workpaper is being updated for both electric and natural gas savings. Under further review.	Other	Statewide IOU/PA/CPUC technical collaboration efforts are ongoing, and the given Smart Communicating Thermostat (SCT) technology is now associated with statewide eTRM measure ID SWHC039. SCE is the IOU/PA lead and who recently submitted a workpaper plan (WPP) measure package update for CPUC ex-ante staff review and comment. The given WPP proposes excluding energy efficiency gas savings starting 1/1/2022.

					PG&E (if applicable)		SCE (if applicable)		SCG (if applicable)		SDG&E (if applicable)	
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2	5.1, 5.4, p. 57	Electric savings have low gross realization rates.	Consider reducing utility reporting assumptions for electric thermostat savings, particularly for direct install applications. Review the potential for fan control measures to interfere with savings opportunities from smart thermostats. Consider restricting smart thermostat direct install to homes without fan control measures.	CPUC, All PAs	Accepted	For PG&E's rebate program (non-direct install) PG&E adopted the updated Smart Thermostat Workpaper (SWHC039), which reduces savings assumptions.	Other	SCE will evaluate future workpaper updates to consider restricting the installation of fan controller for implementations including smart thermostat. Future impact evaluations should evaluate measure savings contributions for direct install for implementations including both fan controller and SCT.	Other	SoCalGas will work with direct install contractors to monitor smart thermostat installation on HVAC systems that have existing fan control applications.	Accepted	Statewide IOU/PA/CPUC technical collaboration efforts are ongoing, and the given Smart Communicating Thermostats (SCT) technology is now associated with statewide eTRM measure ID SWHC039. SCE is the IOU/PA lead and who recently submitted a workpaper plan (WPP) measure package update to CPUC ex-ante staff for review and comment. The given WPP proposes restrictions for PA direct install (DI) programs by excluding fan control technology measures in conjunction with SCT. Once the WPP is approved by CPUC staff, SDG&E will continue to collaborate with all stakeholders in revising the eTRM measure package per CPUC ex-ante guidance, resolution, and disposition(s).
3	4.2	Lower engagement among direct-install program participants compared to rebate participants and non-participant installers implies underutilization of the learning algorithm to optimize and save energy, which reduces savings opportunities.	Consider reducing utility reporting assumptions for electric thermostat savings, particularly for direct install applications.	CPUC, All PAs	Accepted	Program design for future direct install measures should include an educational component to help clients utilize their smart thermostats at their full capacity. The lower engagement results compared to other delivery methods are a clear indicator that these types of customers are not trained to take advantage of the smart thermostat full range of capabilities. Energy savings assumptions should also be revised for future programs to reflect this issue.	Other	Workpaper for this technology follows guidance from latest impact evaluations and commission consultant.	Other	N/A	Other	Statewide IOU/PA/CPUC technical collaboration efforts are ongoing, and the given Smart Communicating Thermostats (SCT) technology is now associated with statewide eTRM measure ID SWHC039. SCE is the IOU/PA lead and who recently submitted a workpaper plan (WPP) measure package update to CPUC ex-ante staff for review and comment. The given WPP proposed updated energy efficiency savings records that are weather (climate zone) sensitive based on the 3 major residential building types (MH, MF, and SF). Once the WPP is approved by CPUC staff, SDG&E will continue to collaborate with all stakeholders in revising the eTRM measure package per CPUC ex-ante guidance, resolution, and disposition(s).
4	4.2	Direct-install program participants report lower rates of enrollment in demand response programs compared with rebate program participants and non-participants with smart thermostats.	Review the potential for fan control measures to interfere with savings opportunities from smart thermostats. Consider restricting smart thermostat direct install to homes without fan control measures.	CPUC, All PAs	Accepted	Fan control measures are an important component of a comprehensive HVAC retrofit. There are two distinctive approaches: 1) Heating Furnace – Most units already have fan delay controls. Smart thermostat measures should not take credit for savings due to	Other	SCE will evaluate future workpaper updates to consider restricting the installation of fan controller for implementations including smart thermostat. Future impact evaluations should evaluate measure savings contributions for direct install for imple-	Other	SoCalGas will work with direct install contractors to monitor smart thermostat installation on HVAC systems that have existing fan control applications.	Accepted	Same response as item #2 above.

					PG&E (if applicable)		SCE (if applicable)		SCG (if applicable)		SDG&E (if applicable)	
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						fan control. 2) Cooling Equipment – Older AC units may not have fan delay controls. In this case the smart thermostat measure should consider savings from this device. Newer HVAC units do have fan controls and this measure shouldn't take credit for savings.		mentations including both fan controller and SCT. SCE has identified opportunities to leverage Direct Install Smart Thermostat installations to enroll qualified customers into the Demand Response Smart Energy program and launched the effort in March 2021. We will continue to monitor the progress.				
5	5.5	Hourly load shapes for direct install smart thermostat participants indicate that demand peaks in late afternoon hours during the summer, whereas hourly savings shapes show that the greatest summer load reductions occur in the early part of the afternoon.	Require direct install programs to include or strengthen contractor training and customer education about settings (auto-away) and device use (pre-heating/pre-cooling) that will help save energy.	CPUC, All PAs	Accepted	This recommendation is under consideration in PG&E's third- party Home Energy Optimization Program.	Accepted	SCE's Residential Direct Install program requires technician training on smart thermostat device use, settings, and customer education. We will continue to enforce the requirement and strengthen training as applicable.	Accepted	SoCalGas will encourage and continue to educate direct install contractors to focus on training the customer on efficient usage and proper settings when a smart thermostat is installed through the direct install program.	Other	SDG&E will take the recommendation and share it with its program implementer. SDG&E staff meet and collaborate with third-party implementer staff regularly to discuss these types of recommendations so that the installation contractor, property managers, and end-use customer are educated on the technology use and benefits.
6	5.6	There are indications that customers maintained, and some increased, smart thermostat savings during the pandemic affected year of 2020.	Consider leveraging contractors and property managers to deliver customer education recommended above.	CPUC, All PAs	Accepted	PG&E does not currently have a direct install component as part of its third-party Multifamily Energy Savings Program but will share this recommendation with third parties that consider future programs that use contractors or property managers as a touch point for customers.	Accepted	SCE will continue to leverage the program's technicians to provide customer education on smart thermostat use and settings.	Accepted	SoCalGas will encourage and continue to educate direct install contractors to focus on training the customer on efficient usage and proper settings when a smart thermostat is installed through the direct install program.	Other	Same response as item #5 above.