

RTR Appendix

This Appendix contains the Responses to Recommendations in the report:

Study ID	Study Type	Study Title	CPUC Study Manager
Group A: CALMAC ID CPU0351.01	Impact Evaluation	Residential Direct Install Program - Program Year 2021	Peng Gong

https://www.calmac.org/publications/CPUC_Group_A_PY2021_Residential_Install_Program_Impact_Evaluation_-_Final_Report_CALMAC.pdf

The RTR reports demonstrate the Utility/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.) 07-09-043¹.

Individual RTR reports consist of a spreadsheet for each evaluation study. Recommendations were copied verbatim from each evaluation's "Recommendations" section.² 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.

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 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 ID	Study Type	Study Title	CPUC Study Manager
Group A: CALMAC ID CPU0351.01	Impact Evaluation	Residential Direct Install Program - Program Year 2021	Peng Gong

Rec #	Program or Database	Summary of Findings	Additional Supporting Information	Best Practice / Recommendations	Recipient	Affected Workpaper or DEER	Respondent	Disposition (Accepted, Rejected, or Other)	Disposition Notes (Describe specific program change, give reason for rejection, etc.)
1	SCE Residential Direct Install Programs	As in the past two program years, direct install smart thermostats have a low gross realization rate.	Section 4.2 and Section 4.5.3	Although the claimed savings for smart thermostats were revised downwards by approximately 10% starting in PY2024, the continued low gross realization for this measure suggests that the savings need further revision. The findings also suggest that programs consider improved customer/contractor training when installing smart thermostats in direct install programs.	CPUC, All PAs	Statewide workpaper, Program design consideration	SCE	Other	Given criticality of the measure for Res and Res DI programs, SCE recommends for DNV to support (in collaboration with NEST, Honeywell, and ecobee) further evaluations of the measure including updated savings estimates post-pandemic. SCE supports improved customer education when installing smart thermostats in direct install programs.
2	SCE Residential Direct Install Programs	Direct install fan motors also continue to have low realization rates.	Section 4.2	We recommend a new HVAC motor baseline study and a revision to the fan motor replacement measure package since its baseline fan motor efficiency is based on a 15-year-old study. Together with this update, programs should review the criteria for installing these measures.	CPUC, All PAs	Statewide workpaper	SCE	Accepted	In agreement. A short ISP/baseline study would assist on validating (and potentially updating) base case fan motor power (W/CFM) assumption in both the latest version of the measure package and the recently updated residential DEER prototype (as SCE understands with both tasks supported by DNV).
3	SCE Residential Direct Install Programs	Similarly, direct install fan controls have a low realization rate.	Section 4.2	The fan motor control measure package savings are based on a 2012 SCE study. We recommend a review to understand why the savings based on that study are	CPUC, All PAs	Statewide workpaper	SCE	Other	SCE understands that CalITF/SDGE is in the process of submitting to CPUC a new fan controller

not realized and a revision of the fan control measure package savings methodology. Together with this review, the programs should re-assess the criteria for installing these measures.

measure package (SWHC059-01 – Smart Efficient Controller) expected to include more recent research and evaluation of the technology and measure savings potentials including adjustments to measure savings due to “HVAC equipment vintage” (to account for new systems already including some level of fan delayed capability) and homes including smart thermostats (also including some degree of fan delayed control ability).

Once SWHC059-01 is approved by the CPUC, SCE should consider sunseting SWHC029. Also, note that the latest version SWHC029 – fan controller, has been updated to limit the installation of the measure by equipment vintage, e.g., measure only allowed in 2010 or older equipment.

4	SCE Residential Direct Install Programs	The water heating (aerator) measures included in the current evaluation also have a low realization rate.	Section 4.2	There are two possible explanations for the low aerator realization rates: 1) inflated unit energy savings due to inaccurate assumptions in the deemed measure package of hot water consumption at sinks or electric water heater presence, or 2) the change in flow rate could be less than assumed or is uncertain. Both explanations require investigation and correction if necessary.	CPUC, All PAs	Statewide workpaper	SCE	Other	In agreement, perhaps baseline DHW consumption should be evaluated and updated leveraging other more accurate DHW models, e.g., CEC residential prototypes opposed to DEER documentation. Assumptions used with Energy Division’s “basis savings values” for DHW fixtures should be re-evaluated in collaboration with CPUC’s consultant. Lab test/research to improve characterization of both base
---	---	---	-------------	--	---------------	---------------------	-----	-------	--

case and measure case should be considered.

5	SCE Residential Direct Install Programs	Two of the three HVAC tuneup measures (HVAC fan repair and coil cleaning) delivered close to half of the claimed savings for each measure, while the third (HVAC RCA) only delivered 2% of the claimed savings for the measure.	Section 4.2	This finding supports prior decisions to sunset the RCA measure. The measure should remain closed.	CPUC, All PAs	Statewide workpaper, Program design consideration	SCE	Other	<p>The measure will remain closed at SCE.</p> <p>Program evaluator (DNV) should still provide recommendations and requirements on alternative non-intrusive, safer methods, and best practices for supporting refrigerant charge adjustments still being conducted in the market absent the program.</p> <p>Program evaluator (DNV) should still require for statewide programs to design and implement resource and non-resource programs for the safe and documented recovery of remaining end-of-life refrigerant in HVAC systems including education to HVAC contractors on best practices for assessing charge levels without tapping refrigerant lines (as recommended in DNV's <i>A Roadmap for Accelerating the Adoption of Low-GWP HVAC Refrigerants, May 3, 2021</i>).</p> <p>Additionally, given CARB requirements on Low-GWP refrigerants, (effective 1/1/2023, for</p>
---	---	---	-------------	--	---------------	---	-----	-------	--

								room/wall/window AC equipment, PTACs, PTHPs, portable air-conditioning equipment, and residential dehumidifiers (new), and effective 1/1/2025, for other AC (new) equipment for both res and non-res sectors), specific guidance and requirements on safe recovery of "standard" refrigerant will be critical and is something that the program evaluator (DNV) should provide guidance to PAs on.	
6	SCE Residential Direct Install Programs	Savings shapes indicate that measures like fan motors and duct sealing reduce consumption proportionally to the HVAC consumption and deliver savings during the summer peak demand hours and across all seasons.	Section 4.3	Continue to include these measures in the residential HVAC program portfolio.	CPUC, All Pas	N/A (Program design consideration)	SCE	Other	SCE will continue to include these measures in the residential HVAC program portfolio.
7	SCE Residential Direct Install Programs	The demographic profiles and evaluated NTGRs indicate that these programs are reaching the right population segments.	Section 4.2 and Section 4.6	Maintain targeting and outreach to these customers.	CPUC, All PAs	N/A (Program design consideration)	SCE	Accepted	SCE will maintain targeting and outreach to these customers.
8	SCE Residential Direct Install Programs	The programs' new integrated demand side management is yielding success. A higher proportion of participants was aware and enrolled in SCE's smart thermostat demand response program compared to nonparticipants.	Section 4.5.3	Continue to offer information to increase awareness about SCE's demand response programs and offer to enroll participants in these programs at the time of energy efficiency installations.	CPUC, All PAs	N/A (Program design consideration)	SCE	Accepted	SCE will continue to offer information to increase awareness about SCE's Demand Response programs and will continue to enroll eligible participants at the time of installations.

9	SCE Residential Direct Install Programs	While customers were generally satisfied with the programs, with 87% reporting overall satisfaction, they reported somewhat lower satisfaction with the information and the benefits the programs provided.	Section 4.5.3 Follow up to ensure installed equipment works as intended and provide better education and information, particularly for measures with behavioral aspects, to enable customers to receive the full benefits of the installations.	CPUC, All PAs	N/A (Program design consideration)	SCE	Accepted	SCE will continue to perform random inspections via phone surveys to ensure installed equipment works as intended. The program contractor will continue to facilitate independent customer surveys to gauge customer satisfaction and equipment operation. SCE will work with the program contractor to review the current education and information being provided to customers and identify areas for improvement to enable customers to receive the full benefits of installations.
10	SCE Residential Direct Install Programs	Program activities were consistent with one of the CPUC's ESJ goals and more information is needed to assess consistency with the rest of the CPUC ESJ goals.	Section 4.5.4 Establish an equity metric framework and specific equity- and access-related metrics for all programs. Where a quantitative metric is not practical, guide programs about what activities would be consistent with the ESJ goals.	CPUC, All PAs	N/A (Program design consideration)	SCE	Other	SCE will consider working with the contractor to track HTR statistics to demonstrate equity customers being served by the program.