

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 California LED Pricing Analysis (Navigant Consulting, Calmac ID #SCE0415.01, ED WO #2144)

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) Plan¹ and CPUC Decision (D.) 07-09-043².

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.

¹ 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>.

² 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.”

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: California LED Pricing Analysis
Program: LED
Author: Navigant Consulting
Calmac ID: SCE0415.01
ED WO: 2144
Link to Report: http://calmac.org/publications/LED_Pricing_Analysis_Report_-_Revised_1.19.2018_Final.pdf

Item #	Page #	Findings	Best Practice / Recommendations (Verbatim from Final Report)	Recommendation Recipient	PG&E (if applicable)		SCE (if applicable)		SDG&E (if applicable)	
					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.
1	54	There was no statistically significant difference in prices of LED products that are DLC qualified and those that are not but meet the same technical requirements for lumen output and efficacy.	IOUs should monitor if DLC continues to minimally influence LED price as both LED products and DLC Technical Requirements are updated. This is a particularly important step in maintaining the underlying inputs into the current LED price projections for 2017 to 2022.	All IOUs	Accepted	All products must be DLC listed to qualify for rebates, therefore programs are already tracking DLC qualified product prices. PG&E will engage with distributors in its territory to collect pricing information on non DLC qualified products with similar technical specs.	Other	All products must be DLC listed to be eligible for incentives. Will be difficult to track prices for non DLC listed products as SCE does not collect this information.	Other	SDG&E is in alignment with SCE. All rebated products must be DLC listed, and due to the increased LED product availability, tracking all non-DLC listed product pricing is not possible.
2	54	The prices of DLC and ENERGY STAR qualified priority LED products are expected to continue to decline. Indoor priority LED products are expected to decline 41% from 2017 to 2022. Outdoor priority LED product prices are expected to decline 35% from 2017 to 2022.	IOUs should continue to monitor LED product prices annually. The current projected LED prices from 2017 to 2022 will need to be updated to account for changes to the market, as well as any technological or significant qualification changes from DLC and ENERGY STAR.	All IOUs	Accepted	PG&E actively engages upstream & mid-stream market participants to help update work paper pricing, and reviews current market pricing when determining eligible rebate levels.	Accepted	SCE actively reviews market prices and adjusts incentives accordingly. Also, SCE utilizes data collected from market participants to help update work paper pricing.	Accepted	SDG&E actively engages upstream market participants to help update work paper pricing, and reviews current market pricing when determining eligible rebate levels.
3	54	The analysis results indicate that there is no correlation between the typical customer purchase price of an LED luminaire and the rated efficacy of the product. While efficacy may play a role in the manufacturing cost of the LED system, this is not necessarily translated to the prices paid by the customer. Lumen output and product manufacturer were found to be the most common price determining	IOUs should carefully consider changes to the current structure of incentive programs. Since the Study results show that price and efficacy are not correlated, this indicates that the price of a low and high efficacy LED product could very well be the same. To control for the possible "up-sell" to a higher lumen output LED product, it may be useful to tier rebate measures by lumen output and efficacy.	All IOUs	Accepted	PG&E agrees to carefully consider the impacts of price and efficacy not being correlated in its incentive structure. Most current rebates are provided based on increasing wattage/lumen output with the exception of LED troffers which are incented based on efficacy and lumen output (as suggested by the recommendation) with a rebate cap at 4.5 kilolumens. This cap helps control for "up-selling" to higher lumen products. Even though price and efficacy are not correlated, it is still important to incent products with higher energy savings as the	Accepted	The LED troffer and kit work paper incentivizes fixtures on an efficacy and kilolumen basis. This makes it more complex to calculate the incentive but does provide a higher incentive for more efficacious fixtures. The Midstream Point of Purchase (MPOP) program caps the max incentive for troffers and kits at 4.5 kilolumens.	Accepted	SDG&E incentives and max rebates are in alignment with SCE.

		characteristic of LED luminaires.				goal of IOU programs is to maximize savings. This is supported by CS. If cost no longer proves to be the main barrier to LED adoption, PG&E along with CS will investigate a new incentive structure that does not rely on cost as a major metric so that we can provide higher incentives for products with higher and more persistent energy savings.				
4	55	The incremental cost of DLC and ENERGY STAR qualified LED products to complete baseline luminaire systems for certain priority products were negative (LED products were sometimes less expensive than, or comparable to, baseline systems). However, this luminaire market scenario represents a small proportion of the market (new construction installation). The replacement market incremental cost, in which a complete DLC and ENERGY STAR qualified LED product is compared to a baseline lamp(s) and ballast, yields high incremental costs in every product category.	The findings indicate that DLC and ENERGY STAR qualified LED products have a significant incremental cost relative to baseline systems in the replacement market. IOUs should carefully consider any changes to their incentive program from the traditional fixture-to-fixture method to potentially including the replacement market. Current LED incentive levels may not be sufficient, as they do not factor in baseline lamp and ballast failures which account for the majority of customer lighting replacements.	All IOUs	Accepted	PG&E is actively working with CS to update baseline technologies for future LED product workpaper updates to potentially include the replacement market.	Accepted	SCE will consider changes to the incentive programs. Currently for LED Type A tubes, the program participant is not allowed to change out the existing ballast. The LED tube is required to go into the existing ballast so the incentive is based on the product's cost.	Accepted	SDG&E will consider changes to LED tube rebate levels. Similar to SCE, SDG&E can only rebate LED tube lamps that go into fixtures with existing ballasts, which is the only basis for the measure cost.
5	55	As discussed in the DOE Solid-State Lighting (SSL) Program's "2017 Suggested Research Topics Supplement: Technology and Market Context" report, SSL is creating an opportunity for a whole new lighting system paradigm by the broad transition of lighting infrastructure to inherently controllable SSL systems. Connected lighting systems that can leverage occupancy sensing, daylight harvesting, high-output trim, personal area controls, or any combination of these approaches have been shown to provide energy savings as high as 20% to 60% of SSL power consumption, depending on the application and use-case.	IOU lighting programs should begin monitoring the price and performance of networked and connected LED lighting to help ensure that the energy savings potential of these systems is leveraged effectively now and in the future.	All IOUs	Accepted	PG&E agrees that this data needs to be collected to inform future Program Design for networked lighting control systems and will begin doing so. As there is a wide range of product capabilities, features, and pricing, we will continue to assess the technology to see if an incentive can capture opportunities.	Other	SCE will need to review further. This sounds like it would apply to calculated projects	Other	SDG&E agrees with SCE, this appears to be a calculated approach or ET scope project due to the wide range of connected LED products and capabilities.