

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 California Statewide Non-Residential LED Quality and Market Characterization Study: Part 2—LED Market Characterization and Final Non-Residential LED Quality Criteria (Navigant Consulting, Calmac ID #PGE0433.02, ED WO #2161)

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.) 07-09-043¹ and the Energy Division-Investor Owned Utility Energy Efficiency Evaluation, Measurement and Verification (EM&V) Plan² 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.

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: California Statewide Non-Residential LED Quality and Market Characterization Study: Part 2—LED Market Characterization and Final Non-Residential LED Quality Criteria
Program: Lighting
Author: Navigant Consulting
Calmac ID: PGE0433.02
ED WO: 2161
Link to Report: http://calmac.org/publications/CA_NR_LED_Qual_Pt_2_Final_Report.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	Navigant identified several product categories—low and high bay, ambient commercial lighting and linear replacement lamps, downlights, and outdoor products—that are well-positioned in the market currently, expected to grow significantly in the next 5-7 years, and have the greatest energy savings potential based on legacy technologies currently installed.	CA IOUs should provide program assistance to priority categories that have the most market leverage and potential energy savings impact. This is the recommended path forward to accelerate the adoption of LED technologies in these applications and achieve significant energy savings.	PG&E, SCE, SDG&E	Other	PG&E will continue to support intervention strategies as long as it is cost effective to do so	Other	Based on the increase in LED baseline requirements LED high/low bays may not be cost effective in future program years.		
2	54	The research and analysis showed that the representation of the top-half of the market in terms of lighting quality is best identified by a combination of prescriptive, reporting, and performance criteria. In particular, the performance criteria, which is implemented through the Lighting Quality Rating described in Section 4.2.3, rewards higher performance using a tiered point structure. In addition, several industry stakeholders were in favor of the performance approach since it incentivizes increased lighting quality performance while allowing for tradeoffs between the metrics included. The results of the Criteria analysis, the proposed definition of lighting quality, and the market characterization depict a market snapshot	CA IOUs should move forward with the blended prescriptive, reporting, and performance approach. The Criteria has been vetted with key industry stakeholders to ensure LED products meeting the Criteria are of high lighting quality when compared to those qualified by the DLC and ENERGY STAR. Additionally, existing data from the DOE's LED Lighting Facts database and DLC's QPL were used to optimize the Lighting Quality Rating approach. The results of this optimization are discussed in Appendix B of Part One. CA IOUs should also utilize the LED Product Quality Evaluation Tool to analyze LED products meeting or not meeting the	PG&E, SCE, SDG&E	Other	As national qualifying bodies for non-residential lighting, DLC and ENERGYSTAR are better suited to serve as the reference point for program participants on technical requirements, including those that relate to lighting quality. Rather than implement Criteria for California, PG&E recommends continuing to refer to DLC and ENERGY STAR as the most cost-effective way to ensure that non-residential LED fixtures and lamps in the market meet lighting quality standards.	Other	As SCE will no longer be implementing the lighting program in 2020, SCE will add this recommendation to the Statewide Lighting Solicitation.		

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		<p>that confirms the most suitable approach for the CA IOUs is to reference DLC and ENERGY STAR for program incentive qualification instead of implementing the Criteria in practice.</p> <p>Section 3.2.2 details that the DLC market penetration of the 2017 sales was approximately 55%, which generally aligns with the top-half of lighting quality initiative in this Study. Also, in Appendix B of Part One, Navigant identified that 39% of the indoor products passed the Criteria, and 52% of the outdoor products passed the Criteria. The vast majority of the DLC Premium products passed (98% and 97% for indoor and outdoor products, respectively), while a more limited amount of DLC Standard products passed the Criteria (15% and 38% for indoor and outdoor products, respectively).</p> <p>Additionally, manufacturers and other stakeholders noted during the stakeholder engagement process that the testing and verification considerations with this type of implementation would require program bandwidth and support staff that would be difficult for California to provide.</p>	<p>Criteria. The LED Product Quality Evaluation Tool should be updated annually, if the Criteria is implemented in practice, to evaluate future versions of each database, as well as additional metrics and revised performance tolerances as needed. This update process will help to ensure that LED products available are able to meet any future revised Criteria and that any future revised Criteria continues to represent the top-half of the market in terms of the proposed definition of lighting quality.</p> <p>Lastly, the CA IOUs should use the outcomes of this initial Criteria analysis, paired with those of the non-residential market characterization, as justification to defer to DLC and ENERGY STAR for program incentive requirements. Navigant recommends the CA IOUs use the insights found in this evaluation as feedback to monitor DLC and ENERGY STAR developments and provide feedback where necessary to ensure lighting quality is continually emphasized by those organizations.</p>							
3	55	Stakeholder feedback received at various phases of the Study suggested there could be issues with a compliance system designed for the Criteria implementation and the current lack of available data for metrics considered in the Criteria.	Navigant proposes the CA IOUs to engage with stakeholders to encourage participation in a trial run of the Criteria (e.g., 6 months) prior to the CA IOUs putting it into effect, should the Criteria be implemented in practice. The threshold for incentives during this period could remain as currently structured, with the addition of manufacturers submitting the data needed for Criteria participation. After or during the trial run, the Criteria can be re-evaluated and optimized based on an accurate and up-	PG&E, SCE, SDG&E	Other	As national qualifying bodies for non-residential lighting, DLC and ENERGYSTAR are better suited to serve as the reference point for program participants on technical requirements, including those that relate to lighting quality. Rather than implement Criteria for California, PG&E recommends continuing to refer to DLC and ENERGY STAR as the most cost-effective way to ensure that non-residential LED fixtures and lamps in the market meet lighting quality standards.	Other	As SCE will no longer be implementing the lighting program in 2020, SCE will add this recommendation to the Statewide Lighting Solicitation.		

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			to-date full dataset.							
4	55	Stakeholder engagement and research showed that DLC and ENERGY STAR are the most established organizations for developing specification tolerances and thresholds that influence product design and lighting quality.	Stakeholder engagement and research showed that DLC and ENERGY STAR are the most established organizations for developing specification tolerances and thresholds that influence product design and lighting quality. As such, CA IOUs should continue to reference the most current versions of the DLC Technical Requirements (currently V4.4) and the ENERGY STAR Program Requirements Product Specification for Luminaires (Light Fixtures) Eligibility Criteria (currently V2.1) as first levels of qualification for the Criteria. In coming months, DLC Technical Requirements v5.0 will likely be finalized (per comments received by DLC representatives on Part One of this Study), which is set to include several additional metrics related to quality. The CA IOUs should review this document when published and update references within the Criteria to DLC v5.0 if applicable.	PG&E, SCE, SDG&E	Accepted	PG&E leverages DLC and ENERGY STAR to qualify products for rebates and incentives, and updates requirements as needed to align with the DLC Technical Requirement updates.	Accepted	SCE currently uses DLC and EnergyStar to qualify products for incentives and will continue to update workpaper requirements with the current versions of technical requirements.		
5	55	Stakeholders suggested that fully developing the structure of a testing and verification system parallel to finalizing the Criteria is vital to ensuring high quality products are adopted by customers as a result of the Criteria's implementation. Therefore, should the Criteria be implemented in practice after conferring with the CPUC, the CA IOUs should work with the CPUC and CEC to determine the most viable route to ensure product compliance.	As the process unfolds to present the Criteria to the CPUC, the CA IOUs should work with the CPUC and CEC to determine the most suitable route forward for ensuring product compliance (should the Criteria be implemented). Navigant identified three potential testing and verification pathways: 1) allow manufacturers to self-report certification data, 2) CA implement its own testing and verification system, or 3) CA could leverage the DLC reporting infrastructure (with the exclusion of downlight products).	PG&E, SCE, SDG&E	Other	As national qualifying bodies for non-residential lighting, DLC and ENERGY STAR are better suited to serve as the reference point for program participants on technical requirements, including those that relate to lighting quality. Rather than implement separate Criteria for California, PG&E recommends continuing to refer to DLC and ENERGY STAR as the most cost-effective way to ensure that non-residential LED fixtures and lamps in the market meet lighting quality standards. Additionally, the Statewide administration of the lighting programs will likely be implemented by a third-party starting in 2021, at which time the third-party can assess.	Other	As SCE will no longer be implementing the lighting program in 2020, SCE will add this recommendation to the Statewide Lighting Solicitation.		
6	56	Several key industry stakeholders emphasized the need for the CA IOUs to remain vigilant as new	In order to maintain the relevancy of the Criteria, the CA IOUs should refer to Section	PG&E, SCE, SDG&E	Other	PG&E leverages DLC and ENERGY STAR to qualify products for rebates and incentives, and updates requirements as needed to align	Other	SCE utilizes DLC which update technical requirements based on new lighting trends and		

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		metrics and test methods become available for defining and quantifying lighting quality for LED products. In addition, stakeholders commented that revisions should be continued for the Criteria, preferably on an annual basis. The LED industry is evolving rapidly, and industry standards and metrics are continually developed to assess the performance of products coming to market.	4.4 which described the recommended process for updating the Criteria, if implemented in practice. This Criteria Future Revisions Plan indicates the CA IOUs should 1) review new and updated metrics, test methods and industry-accepted tolerances, 2) continually engage with key stakeholders, 3) regularly update the LED Product Quality Evaluation Tool with new products, and lastly 4) propose new metrics and tolerances for consideration with the CPUC.			with the DLC Technical Requirement updates.		efficiencies.		