Work Paper SCE17LG119

**Revision 1**

**Short Form**

**Southern California Edison**

**LED Residential Exterior Fixtures**

**Introduction**

This short form workpaper documents (WP) the energy savings values adopted from DEER 2019 and eligibility requirements were adopted from SCE workpaper SCE17LG119.0. SCE adopts all the DEER 2019 values, with the following exceptions:

1. Costing was updated to 2018 values at the base case and measure case with new fixture samples.
2. New DEER LED NTG value is used for all measures – All-Ltg-LED-WRR.
3. MultiFamily Dwelling Area (MFm) uses the same 541 operating hours as the Residential Single Family (SFm).
4. Two different calculation templates for Residential Single Family, and Multifamily Common/Dwelling were developed using SCE’s 2018 calculation template. The different approaches have independent solution codes and cost-effectiveness assumptions associated with them to avoid confusion.

# Document Revision History

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| --- | --- | --- | --- |
| **Rev** | **Date** | **Author** | **Summary of Changes** |
| 0 | 11/1/16 | Don Ly | * New template for 2017 program year * WP effective from 1/1/2017 * Revised based on original SCE13LG119 * Updated WRR per 2016 Lighting Disposition * Applied same methodology as PGECOLTG139 to align costs statewide |
| 1 | 10/17/18 | Stephen Brett Reno (TRC) | * Updated savings methodology and WRR to reflect DEER 2019. * Updated costs to reflect 2018 values. * Updated all measures to new DEER NTG value for all LED using WRR methodology. |

**Measure Differences Summary**

Table 1: Measure Differences Summary Table

| **Section** | **Value** |
| --- | --- |
| **Summary & Purpose** | This short form workpaper documents ex-ante load impacts and cost-effectiveness values for LED Residential Exterior Fixtures Lighting. Savings calculation methodology was taken directly from DEER 2019. Only differences are explained here. |
| **1.1 Measure & Baseline** | Please refer to Attachment #1 Calculation Templates for the list of measure solution codes and baseline condition. |
| **1.2 Technical Description** |  |
| **Measures** | Refer to Attachment 1. |
| **Code for All Measures** | No difference |
| **Requirements** | Please refer to SCE17LG119.0.  Note: Other program level restrictions and guidelines exist for this work paper. Please see the **Measures and Codes** section of SCE17LG119.0 for more details. |
| **1.3 Installation Type and Delivery Mechanisms** |  |
| **Installation Type** | No difference |
| **Delivery Mechanisms** | Residential Mobile Home - Double-Wide and Residential Multi-family:  Financial Support: Direct Install  Financial Support: Down-Stream Incentive - Deemed  Residential Single Family:  Financial Support: Direct Install  Financial Support: Down-Stream Incentive - Deemed |
| **1.4.1 DEER Data** |  |
| **Net-Gross-Ratio** | All-Ltg-LED-WRR |
| **Effective and Remaining Useful Life** | OLtg-Res-50000hr  OLtg-Res-50000hr-Cmn |
| **Section 2. Calculation Methodology** |  |
| **Energy savings/Peak Demand Reduction – All Measures** | Energy savings are taken directly from DEER 2019 or calculated using DEER WRR methodology. The operating hours and interactive effects for all impacts were taken from the most applicable and updated DEER data. These interactive effects and operating hours were used to calculate energy savings for SCE specific climate zones. |
| **Section 3. Load Shapes** | DEER:Indoor\_CFL\_Ltg |
| **Section 4. Costs** |  |
| **Section 4.1 Base and Measure Costs** | New costing was developed for 2018 values. Please refer to Attachment #2 Cost Calculations for detailed baseline and measure costs. |

**Savings and Calculation Methodology**

New fixture samples for both base and measure cases were gathered from online retailers to update costing to 2018 values.

Measure case costs were based on LED fixtures, while base case costs were based on a blend of LED, CFL, and Halogen fixture costs. LED, CFL , and Halogen fixture costs were calculated by applying a linear formula based on average $/Watt. See Attachment 2 for details.

Labor costs estimate a 30 minute install time; a labor rate of $67.88/hr from the READI Tool (R-OL-DP) is used to estimate a cost of $33.94 per unit.

Savings impacts for each measure were taken from DEER 2019.

**Savings Calculation Workbook**

1. SCE17LG119.1 A1 – Calculation Template\_Final.zip
2. SCE17LG119.1 A2 – Cost Calculations.xls