

State of California

Memorandum



Date: May 13, 2019

To: Henry Liu, Pacific Gas & Electric

CC: Ed Reynoso, San Diego Gas & Electric; Cassie Cuaresma, Southern California Edison

From: Peter Biermayer - Utilities Engineer, Industrial/ Agricultural Programs and Portfolio Forecasting Section, Energy Efficiency Branch, Energy Division, CPUC

Subject: Disposition Approving Pacific Gas & Electric 's LED High-Bay and Low-Bay Fixtures Workpaper PGECOLTG178 Rev 4

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## 1. Direction Summary

The California Public Utilities Commission (CPUC) Energy Division approves Pacific Gas & Electric (PG&E) revised LED high-bay and low-bay fixtures PGECOLTG178 Rev 4 for the commercial sectors. This workpaper is a Phase 2 submission for 2019 and the workpaper will become effective 90 calendar days from the date of issuance of this disposition, which is when the existing workpapers will expire.

The workpaper PGECOLTG178 Rev 4 will expire on 12/31/2019, because new peak period requirements were adopted in the Database of Energy Efficiency Resources 2020 Update<sup>1</sup> and Title 24 Code changes.<sup>2</sup>

If the utility intends to continue to offer the measures adopted beyond December 2019, a revised workpaper with the DEER 2020 Update and Title 24 Code changes should be submitted to Energy Division at the CPUC by June 14, 2019 to allow time for Commission review and disposition well in advance of January 1, 2020.

## 2. Workpaper Summary

This workpaper revised the previous workpaper as follows:

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<sup>1</sup> See [DEER Resolution E-4952](#) at page 18, OP 1,

<sup>2</sup> Title 24 - <https://www.energy.ca.gov/2018publications/CEC-400-2018-020/CEC-400-2018-020-CMF.pdf>

- The method for defining measures was revised from wattage-based bins to lumen performance bins.
- The baseline was revised to include a mix of technologies per direction provided in the May 7, 2018 Disposition entitled “2018 Disposition Update for High and Low Bay LED Fixtures”<sup>3</sup>. The technology mix includes: light emitting diode (LED) fixtures, tubular LEDs (TLED) and linear fluorescents fixtures in different proportions depending on the wattage. The linear fluorescent proportion varies from 0% to 20%, TLEDs from 0% to 20%, with the balance provided by LED fixtures.
- Resolution E-4952 October 11, 2018 requires a minimum efficacy of 100 lumens per watt for TLEDs. A TLED can directly replacement existing linear fluorescent lamps without replacing the fixture. Based on a review of available TLED products, the TLED efficacy was raised to 111 lumens/watt which yields an 85.1 lumen per watt fixture efficacy accounting for ballast losses.
- The baseline costs were updated to represent the baseline technology mix.
- The net-to-gross value of 0.91 was retained from the last workpaper. This value was confirmed in Resolution E-4952.
- The operating hours and interactive effects for all impacts were taken from the most applicable and updated DEER data.

These changes were reviewed and approved by Commission Energy Division Staff.

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<sup>3</sup> <http://deeresources.net/workpapers> ; search this site for “2018Disposition Update for High and low Bay LED Fixtures” May 7, 2018 (see Excel spreadsheet “InHiLowBayLED-EAD-7May2018-1; column AA)