2018 OUTDOOR LIGHTING DISPOSITION UPDATE COVERING WORKPAPER RESUBMISSION IN RESPONSE TO A 2018 PHASE 1 DISPOSITION

California Public Utilities Commission, Energy Division

May 7, 2018

1. Covered Workpapers

This disposition applies to the most recently submitted versions of the workpapers listed in Table 1. CPUC staff notes that this list may not be exhaustive. This disposition is based on a detailed review of workpaper ID PGECOLTG151 revision 8. Direction in this disposition applies to all measures similar to those described in the workpaper list below. Furthermore, direction covering the development of ex ante savings shall also apply to custom projects for similar measures.

Table 1 - Submitted Workpapers Covered by This Disposition

ID	PA	Title
PGECOLTG151	PGE	LED Outdoor Lighting
SCE17LG097	SCE	LED Street Lighting
SCE17LG105	SCE	LED Exterior Landscape Lighting Fixture
SCE17LG114	SCE	LED Exterior Light Fixture with Motion Sensor
SCE17LG120	SCE	LED Exterior Fixture below 24 ft.
WPSDGENRLG0181	SDGE	WPSDGENRLG0181_Rev4_SF_LED_Outdoor Area and Street Lighting_FINAL_20180102.zip
WPSDGENRLG0198	SDGE	Exterior LED Sports & Athletic Field Lighting Fixtures
WPSDGERELG1057	SDGE	WPSDGERELG1057_Rev1_Residential Outdoor LED fixtures (Pathways & Floodlights)_FINAL_20171228.zip

2. Ex Ante Value Review

2.1. Background

PG&E submitted PGECOLTG151 revision 8 for Phase 1 review. CPUC staff issued a disposition on the submitted workpaper along with all workpapers and measures described in Section 1, above. The Phase 1 disposition included direction to:

1. Revise baselines for all but parking garage fixtures to be 100% LED technologies
2. Develop baseline LED fixture performance characteristics that are typical for fixtures with similar output to the measure fixture
3. Perform additional cost research on measure and baseline LED fixtures and re-analyze cost data.

CPUC staff, the EAR consultants and PG&E staff met several times to collaboratively develop interim ex ante values for the normal replacement (NR or replace-on-burnout, ROB) and new construction (NC) measure application types with the understanding the PAs would be completing additional cost and standard practice research during 2018. PG&E recently submitted a workpaper with revised ex ante values based on the results of this collaboration.

2.2. Gross Baseline and Relation to NTG

The current DEER NTG value for outdoor lighting is 0.60. The 2017 DEER update revised this value to 0.45, based on the most recent evaluation findings, effective January 1, 2019. Current NTG values assume that the standard practice baseline is comprised only of lesser efficient HID technologies such as metal halide and high-pressure sodium fixtures. The Phase 1 disposition, as well as PG&E's revised

workpaper, update the standard practice baseline to be entirely LEDs in most cases. Increasing the efficiency of the standard practice baseline removes from the gross savings those fixtures that would be installed as standard practice and therefore should not be considered free riders. Since the baseline now reflects the fraction of LEDs that are likely standard practice, and are no longer considered free-riders, the NTG value for normal replacement and new construction measure application types should be increased.

2.3. Costs

CPUC staff, the EAR team and PG&E staff are in agreement that additional research is needed to develop reasonable technology costs. PG&E has proposed to set the incremental cost at 110% of incentives and will continue with cost research for inclusion in their next revision to the workpaper.

3. Direction

CPUC staff approves the ex ante values in the submitted workpaper for normal replacement and new construction measure application types on an interim basis for the period of January 1, 2018 through December 31, 2018, and issues the following additional direction on Net-to-Gross value, measure impacts and cost ex ante data below.

3.1. Net-to-Gross Update

As discussed in Section 2.2, above, the Net-to-Gross Ratio for all the covered measures, utilizing a normal replacement or new construction measure application type, is revised to 0.91. The EAR team has added this value to the Preliminary Ex Ante Review Database (PEARdb) accessible via the READI tool.

3.2. Ex Ante Data

The EAR team has uploaded approved covered measure definitions to the PEARdb with a start date of January 1, 2018. All other exterior lighting measures covered by the workpapers in Table 1, have been revised to have an expiration date of December 31, 2017. EAR team has made minor revisions to PG&E's submitted ex ante data, documented in the attached workbook, "OutdoorLED-EAD-7May2018-1.xlsx".

3.3. Cost Data

Cost data submitted with the revised workpaper is approved on an interim basis for the period of January 1, 2018 through December 31, 2018. However, CPUC staff concerns noted in the Phase 1 disposition continue to apply. The PAs are directed to perform additional cost research on measure and baseline LED fixtures and re-analyze cost data to provide updated values for incremental measure costs with the next workpaper update.

3.4. Standard Practice Baseline

SCE is the lead PA for a standard practice baseline study with a scope encompassing the measures covered by this disposition. PG&E is a contributor to that study for which results are expected by the

fall of 2018 and shall be subject to CPUC staff review and approval. Workpaper updates which propose any baseline revisions, shall consider approved findings of the SCE baseline study.

4. Additional Program Implications

As observed in the original Phase 1 disposition, the workpaper uses a fixed baseline mixture of technologies and performance across all measures within a fixture class (streetlight, roadway/area, canopy, garage and wall-mount). This baseline may not be appropriate for all customer classes. Furthermore, some customer classes may offer an opportunity under an accelerated replacement (AR) measure application. As also discussed in the Phase 1 disposition, the current workpaper revision only covers NR (or ROB) and NC measure applications. For accelerated replacement (which may also be appropriate treatment for "one off" fixture replacements, or certain customer classes) it is appropriate to add that measure type treatment in a future workpaper submission. Such a submission would need to include the preponderance of evidence (PoE) approach that would be used to establish program induced accelerated replacements to qualify the participant for the AR treatment. The standard practice baseline assignments approved on an interim basis are also appropriate for use as the second baseline in a AR measure application. The results of the baseline study, upon CPUC staff review and approval, should also be considered in any update to the AR second baseline.