

State of California



Memorandum

Date: October 4, 2019

To: Cassie Cuaresma, SCE; Chan Peak, SoCalGas

CC: Henry Liu, PGE; Ed Reynoso, SDGE

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

Subject: Disposition for the Statewide Smart Communicating Thermostat Workpapers SWHC039-01 and SWHC039-02

1. Direction Summary

The CPUC approves the statewide consolidated SWHC039-01 Smart Communicating Thermostat (SCT) workpaper with an 1/1/2020 effective date and a 12/31/2020 expiration date. SWHC039-01 is valid for both electric and natural gas measures. The SCT workpaper SWHC039-02 is rejected.

2. Workpaper Summary

SWHC039-01 was submitted as a Phase 1 2020 statewide workpaper by Southern California Edison (SCE) on June 28, 2019. The workpaper correctly incorporates direction provided by the April 5, 2019 SCT disposition related to the measure application type, the effective useful life, heat pump application, and the net-to-gross ratio. The workpaper estimates electric savings based on the average savings of participants in an SCT pilot determined via billing analyses¹. The pilot results were extrapolated to other climate zones by applying the average cooling savings fraction (billing analysis result divided by DEER model prototype cooling consumption) to each climate zone's DEER cooling consumption. An earlier version of the workpaper was submitted using simplified cooling setpoint schedules which were not consistent with the full DEER model specification and the cooling load outputs. The approved workpaper, however, includes the complete DEER model specification (i.e. five setpoint schedules, rather than one average setpoint schedule). This workpaper carries over the gas savings estimates submitted in the currently approved workpaper SCE17HC054.1 which received interim approval on June 28, 2019.

SWHC039-02 was submitted as a revised Phase 1 2020 statewide workpaper by SCE on August 1, 2019. Except for revised estimates of gas savings, this workpaper is identical to SWHC039-01. The April 5 disposition directed the Investor Owned Utilities (IOUs) to conduct additional research to resolve the uncertainty of previous studies which showed little or no gas savings and to submit a workpaper with

¹ "Update: Developing Ex-Ante Statewide Estimates of Savings Based on PG&Es Smart Thermostat Study," AEG, 1/22/2019.

revised gas savings by August 1, 2019. While aspects of previous studies were robust, the disposition directed new research which would address some weaknesses. These improvements included adding study subjects from weather zones with higher heating loads, adding billing data from other years, and using daily rather than monthly billing data in the analysis.

The SWHC039-02 gas savings were based on a study sponsored by Southern California Gas (SoCalGas) and conducted by Nexant (July, 2019) which reexamined the same population as an earlier study. The Nexant study had intended to use more recent data from wider climate zones as directed in the April 5 disposition, however, this work was not done due to time constraints. Nexant did include the daily data in their analysis but not in a way that improved the assessment's ability to correlate gas consumption and weather. Nexant's final estimate of savings was 0.9% of annual usage (average of 2.1 therms) however, it was not statistically significantly different than zero at 90% confidence and therefore does not demonstrate savings. SWHC039-02 is rejected because it did not follow the April 5 disposition instruction and provided no further insights into whether SCTs produce heating savings.

3. Future SCT Billing Analysis Study

In the spring of 2020, the impact evaluation team contractor will be conducting a billing analysis of SCTs (evaluator SCT billing analysis) across the state to determine both electric and gas savings. This study should resolve whether there are gas savings in at least some climate zones, and determine the magnitude, if there are savings. This same study will provide evidence of electric savings in climate zones other than the central valley, the location of the Pacific Gas and Electric (PG&E) pilot study. The investor owned utilities (IOUs) will be directed to resubmit an SCT workpaper for 2021 using the results of this study.