

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



FILED

05/21/19
04:59 PM

Order Instituting Rulemaking Concerning Energy
Efficiency Rolling Portfolios, Policies, Programs,
Evaluation, and Related Issues

Rulemaking 13-11-005
(Filed November 14, 2013)

**COMMENTS OF NEST LABS, INC. ON ADMINISTRATIVE LAW JUDGE'S RULING
INVITING COMMENTS ON DRAFT POTENTIAL AND GOALS STUDY**

Daniel W. Douglass
DOUGLASS & LIDDELL
4766 Park Granada, Suite 209
Calabasas, CA 91302
Telephone: (818) 961-3001
E-mail: douglass@energyattorney.com

Counsel to
NEST LABS, INC.

May 21, 2019

TABLE OF CONTENTS

I.	DESCRIPTION OF GOOGLE NEST	1
II.	COMMENTS ON QUESTIONS POSED IN THE RULING	2
A.	The Navigant study should update measure costs for smart thermostats	2
B.	The Navigant study should use cooling baselines specific to each climate zone, rather than averaging cooling loads across utility service territories.	3
C.	The Navigant study should update baseline cooling loads, which are too low.....	4
III.	CONCLUSION.....	5

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Concerning Energy
Efficiency Rolling Portfolios, Policies, Programs,
Evaluation, and Related Issues

Rulemaking 13-11-005
(Filed November 14, 2013)

**COMMENTS OF NEST LABS, INC. ON ADMINISTRATIVE LAW JUDGE’S RULING
INVITING COMMENTS ON DRAFT POTENTIAL AND GOALS STUDY**

In accordance with the directives provided in the May 1, 2019, *Administrative Law Judge’s Ruling Inviting Comments on Draft Potential and Goals Study* (“Ruling”), Nest Labs, Inc. (“Nest” or “Google Nest”) offers its comments with respect to the issues discussed in both the Ruling and the attached 2019 Energy Efficiency Potential and Goals Study (“Navigant study”).¹ The Ruling requests comments on the Navigant study for energy savings goals for energy efficiency program administrators (“PAs”) from 2020 to 2030. The term “energy savings goals” refers to the amount of electricity and natural gas – measured in kilowatt hours, therms and megawatts – that PAs should achieve through their post-2019 energy efficiency portfolios. The Navigant study would revise energy savings goals adopted by the Commission in Decision (“D.”) 17-09-025 and will guide program administrators as they make their post-2019 portfolio filings.

I. DESCRIPTION OF GOOGLE NEST

Google Nest is dedicated to making the smart home less complicated and more helpful, where products work together to provide customers safety, security, comfort, and connection with their friends and family. The Nest energy devices include the Google Nest Learning Thermostat and Google Nest Thermostat E, which are equipped with sensors, Wi-Fi capability, and smart-

¹ Nest Labs, Inc., already an Alphabet Inc. company, was rebranded as Google Nest on May 7, 2019. Nest devices, including Nest thermostats, will continue to be available, and will be sold under the Google Nest brand.

phone grade processing, to help customers consume less energy. They learn occupant preferences, turn the temperature down when the house is empty, and automatically lower air conditioning (“A/C”) runtime when humidity conditions permit, thereby helping people lower their energy use without sacrificing comfort. Google Nest also has service offerings for utilities to help address their load management needs.

II. COMMENTS ON QUESTIONS POSED IN THE RULING

Google Nest has a significant interest in the Ruling as a manufacturer of smart devices that drive energy savings, comfort, and customer engagement for residential and low- and moderate-income customers. Nest smart thermostats are an extremely effective and low-cost means for achieving significant energy savings. Google Nest offers the following responses to question 2 in the Ruling, and reserves the right to respond to other parties’ responses to all questions in the reply comments due May 31, 2019.

2. Do you recommend alternative values for any of the inputs or modeling used in the Navigant study? If so, specify the particular input or modeling (with section or page references, if applicable) and your recommendation for alternative values. Justify your recommendation and provide references. In particular, we invite responses regarding the following specific assumptions used in the Navigant study:

a. Do you agree with the cost assumptions used in the Navigant study? Explain why or why not, and (if applicable) provide references to alternative sources of information for specific cost assumptions used in the Navigant study?

A. The Navigant study should update measure costs for smart thermostats

Upon reviewing the inputs in the Measure Input Characterization System (“MICS”) to the Navigant Study, Google Nest discovered that the measure inputs for smart thermostats do not accurately reflect costs.² The current cost indicated in MICS is \$219.17, which is higher than is

² 2019 Potential and Goals Study Measure Input Characterization System. Available at: ftp://ftp.cpuc.ca.gov/gopher-data/energy_division/EnergyEfficiency/DAWG/2019%20PG%20Study%20MICS%20Database%20-%20Public%20Draft_042619.xlsx

seen in the market as well as the draft revised smart thermostat workpaper, which is currently being revised.³ For example, the Nest Thermostat E retails at \$169, well below the measure cost indicated in MICS.⁴ The correct measure cost is \$142.46, as noted in the draft revised smart thermostat workpaper. Though the measure input cost source shown in MICS notes, “Use draft WP as proxy Work Paper SW13XX### Residential Smart Thermostat,” this does not utilize the most recent cost numbers.⁵ Additionally, the labor cost noted in MICS is too high, noting a cost of \$56.48. Labor cost should similarly be revised to reflect the updated draft workpaper value of \$26.26.

Recommendation #1: Update measure cost to \$142.46 and labor cost to \$26.26.

B. The Navigant study should use cooling baselines specific to each climate zone, rather than averaging cooling loads across utility service territories.

The MICS model employed in the Navigant study uses a single average baseline cooling usage estimate for each utility, regardless of climate zone. The result of this averaging is that, because many customers live in milder coastal population centers like San Francisco, Los Angeles, smart thermostats do not appear to be cost effective – on average – for any utility territory. For single family cooling loads, these averages are 588 kWh for Pacific Gas and Electric (“PG&E”), 717 kWh for Southern California Edison (“SCE”) and 339 kWh for San Diego Gas & Electric (“SDG&E”) and these values are being used for each and every climate zones within each utility territory. It makes little sense to assess the cost effectiveness of heating,

³ WP SCE17HC054 Revision 1 (DRAFT), currently being finalized.

⁴ e.g. https://store.google.com/us/product/nest_thermostat_e?hl=en-US

⁵ 2019 Potential and Goals Study Measure Input Characterization System measure inputs for Smart Thermostats. Available at: ftp://ftp.cpuc.ca.gov/gopher-data/energy_division/EnergyEfficiency/DAWG/2019%20PG%20Study%20MICS%20Database%20-%20Public%20Draft_042619.xlsx

ventilation, and air conditioning (“HVAC”) efficiency measure based on a single utility-wide average when the climates vary so dramatically.

Recommendation #2: The Navigant study should use climate zone-specific baselines, rather than averaging across utility service territories.

C. The Navigant study should update baseline cooling loads, which are too low.

In analyzing customer smart thermostat setpoints as part of the process of updating the current smart thermostat workpaper, Google Nest discovered that Database of Energy Efficiency Resources (“DEER”) baseline cooling load estimates appear inaccurate. This baseline inaccuracy has broad implications for a range of measures – including, but not limited to smart thermostats – and therefore requires further study. The revised smart thermostat workpaper relied on a billing data analysis from a PG&E pilot study to estimate 11% cooling savings from smart thermostats. However, the resulting kWh savings estimates appeared to be too low in many climate zones due to the 11% savings being applied to low estimates of baseline cooling loads -- especially in milder climates. For example, the work paper estimated that a single family home in climate zone 6 (coastal Los Angeles area) averaged 301 kWh/yr in cooling. Data from Nest thermostats for single family customers in climate zone 6 showed an average of 370 hours of air conditioner runtime, which implies cooling loads more than double the work paper estimate even if the air conditioners were all very small. In about half the climate zones, the runtime data from actual customers indicated much larger cooling loads than the modeled values. The discrepancies were even more severe for multifamily residences.

Without reasonable estimates of baseline cooling loads, the savings from all cooling measures will be inaccurate. Google Nest believes that research is needed to better characterize cooling loads by housing type because current values appear questionable, yet play a central role

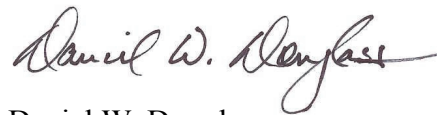
in projected savings for many efficiency upgrades. Google Nest is happy to help in sharing aggregated and/or anonymized data to help inform this analysis.

Recommendation #3: Update baseline cooling loads to be more accurate.

III. CONCLUSION

Google Nest thanks the Commission and Navigant for its attention to these comments and appreciates their efforts to ensure the energy savings potential of the state is accurately captured. Google Nest stands ready to work with Navigant, Energy Division, and the Commission in achieving these goals.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Daniel W. Douglass". The signature is fluid and cursive, with a long horizontal stroke at the end.

Daniel W. Douglass
DOUGLASS & LIDDELL
4766 Park Granada, Suite 209
Calabasas, California 91302
Telephone: (818) 961-3001
Email: douglass@energyattorney.com

Counsel to
NEST LABS, INC.

May 21, 2019