BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

FILED
05/28/19
04:59 PM

Order Instituting Rulemaking Concerning Energy Efficiency Rolling Portfolios, Policies, Programs, Evaluation, And Related Issues.	R.13-11-005

REPORT OF *EX PARTE* COMMUNICATION BY NEST LABS, INC.

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NEST LABS, INC.

May 28, 2019

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Pursuant to Rules 8.2 and 8.4 of the California Public Utilities Commission Rules of Practice and Procedure, Nest Labs, Inc. ("Nest" or "Google")[1] hereby reports on a telephonic ex parte meeting that occurred on Wednesday, May 22, 2019, from approximately 12:30 p.m. to 1:00 p.m. between Rachel Peterson, Advisor to Commissioner Liane Randolph, and Rick Counihan, Head of Energy Regulatory and Governmental Affairs for Nest.

Mr. Counihan stated that the work paper process for calculating energy savings values for new technologies is broken and recommended that Comm. Randolph take on the issue of improving the process as part of her new role as Assigned Commissioner for Energy Efficiency.

Mr. Counihan further stated that Google and ecobee's experience with the smart thermostat work paper demonstrates the failures of the existing process. There is no formal way for new technology vendors, such as Google and ecobee to have input into the process. He said that regarding the smart thermostat work paper, the Ex Ante team in the Energy Division directed Nest to work only through Southern California Edison. But last week, the utility told us they are not talking to technology vendors about work papers and technology vendors cannot talk to them.

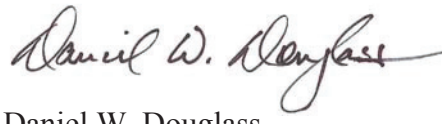
[1] Nest Labs, Inc., already an Alphabet Inc. company, was rebranded as Google Nest on May 7, 2019. Nest devices, including Nest thermostats, will continue to be available, and will be sold under the Google Nest brand.

Mr. Counihan pointed out that this process is not transparent, is not inclusive and is vastly different than most of the processes at the Commission that encourage public participation. As a result, the process stifles the adoption of new technologies, which is ironic given California's world leading role in creating new technologies and our leadership on energy efficiency.

Mr. Counihan pointed out that an alternative model is provided by the state of Illinois. In Illinois, the Illinois Commerce Commission ("ICC") runs a process to update their equivalent of the DEER Manual--the Illinois Technical Reference Manual ("TRM"). The process is run by the ICC, but day-to-day management is by the Technical Reference Manual Administrator, which is a consulting firm hired by the ICC. They hold regularly-scheduled meetings that are open to all stakeholders. They try to resolve issues in those meetings which allow for dialogue among stakeholders. Eventually draft results are circulated for comment. If consensus is not reached after receiving comments, the TRM Administrator and the ICC make a final determination.

The same day, Mr. Counihan also provided Ms. Peterson by email the attached letter dated April 23, 2019, from Google and ecobee Energy on the 2021 DEER Update and workpaper process.

Respectfully submitted,



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May 28, 2019

From: **Richard Counihan** <rcounihan@google.com>
Date: Wed, May 22, 2019, 3:02 PM
Subject: For Our Call Today
To: <rp1@cpuc.ca.gov>

Hi Rachel,

I am looking forward to talking with you in a half hour. In preparation for that call I am attaching a set of comments from Google and ecobee on Updates to the DEER Process which I will use for our discussion.

Rick Counihan
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23 April 2019

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RE: Residential Smart Thermostat Manufacturer Comments on WP SCE17HC054 Revision 1

Dear Mr. Fergadiotti,

We, the undersigned, represent two residential smart thermostat manufacturers with broad expertise in evaluating energy savings from residential smart thermostats. We appreciate the opportunity to comment on work paper SCE17HC054 Revision 1 and believe that the residential smart thermostat industry's collective knowledge can be leveraged to significantly improve this work paper.

Electric cooling savings

The manufacturers below broadly agree that the 11% savings based on PGE's Year 1 study falls within a reasonable range of expectations for electric cooling savings in California. However, we have identified two issues with the extrapolation of these savings to the California climate zones for single-family and multifamily homes.

> *DEER Thermostat Schedule 3*. SCE used the latest DEER Residential prototypes from CPUC's MASControl3 software application with the following assumptions: All 16 Climate Zones; Median Vintage- 2007; Central HVAC with Gas Furnace <45kBtuh; SEER14; AFUE 0.80; DEER Thermostat Schedule 3; and CTZ2010 weather. This modeling resulted in cooling loads for climate zones 11, 12, and 13 that closely matched manufacturers' expectations, as well as the PG&E Year 1 study. This approach, however, fell apart for climate zones 2-8 and resulted in unrealistically low cooling loads and associated kWh savings. **Recommendation 1: Use a blended DEER Thermostat Schedule that more accurately reflects real-world set points for California climate zones (as opposed to self-reported survey data).**
>
> *Multifamily Homes.* The extrapolation to multifamily homes resulted in even more unrealistic implied cooling capacities. **Recommendation 2: Ensure that using the blended DEER Thermostat Schedule results in realistic cooling load assumptions for multifamily buildings.**

Heat pump savings

Pairing residential smart thermostats with heat pumps results in cooling savings in the summer and heating savings in the winter. Two independent studies from the Pacific Northwest identified substantial heating savings (12% of heating use) from smart thermostats in heat pump applications.[1] In fact, third party evaluations show that there should be more energy savings in winter from heat pumps than from gas heating. By excluding heat pump savings from WP SCE17HC054 Revision 1, California ratepayers are missing out on cost-effective energy savings. **Recommendation 3: Account for heat pump heating savings immediately, either by using gas heating savings as a proxy or relying on other studies until such time that California can produce its own residential smart thermostat energy savings evaluation for heat pumps.**

Gas heating savings

We agree that the initial Southern California Gas study, which was meant to inform the gas heating savings for the work paper revision, suffered from some issues that made it inappropriate to use for the update. **Recommendation 4: Extend current gas savings through December 31st, 2020 to allow time for SCG to design, implement, and evaluate a gas heating savings study or, alternatively, utilize the ENERGY STAR® heating metric in the update.**

Measure cost

Residential smart thermostats have decreased in cost in recent years, and the energy saving benefits are available in the lower cost devices. As a result, the $209.31 full measure cost and the $142.46 incremental costs are high relative to the market. **Recommendation 5: Reduce the full measure cost to $169 and the incremental cost to $102.**

Process & transparency

We certainly appreciate this opportunity to inform the work paper update, but the process has lacked clarity on how we would be able to engage and when. **Recommendation 6: Continue to open up the work paper development process to interested third parties with valuable data and knowledge.**

Other items

While we believe that the effective useful life and net to gross values can be improved from the current values in this revision, we acknowledge that doing so in the immediate term will have

[1] Kelsven, P., R. Weber, E. Urbatsch. "Nest Learning Thermostat Pilot Program Savings Assessment: BPA & Franklin Public Utility District." BPA 16 Nov 2016 and "Energy Trust of Oregon Nest Thermostat Heat Pump Control Pilot Evaluation." Apex analytics LLC for Energy Trust of Oregon. 10 Oct 2014.

marginal impacts on programs relative to other issues addressed in this memo.
Recommendation 7: Work with the residential smart thermostat industry to improve NTG and EUL values in a future work paper revision.

We thank you for the opportunity to contribute to updating the residential smart thermostat work paper and look forward to working with California stakeholders to identify cost-effective energy savings from this technology.

Sincerely,

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916-397-0101

Attached:

1. *CA WP Memo Google 7 Mar 2019*
2. *CA WP Memo Google 18 Mar 2019*
3. *CA WP Memo Google 25 Mar 2019*
4. *Nest Learning Thermostat Pilot Program Savings Assessment: BPA & Franklin Public Utility District.*
5. *Energy Trust of Oregon Nest Thermostat Heat Pump Control Pilot Evaluation*