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Commissioner Andrew McAllister
Dockets No 17-BSTD-02
California Energy Commission
1516 Ninth Street
Sacramento, CA, 95814

RE: ecobee Stakeholder Feedback Title 24 Proposed Section 110.12(a)

ecobee thanks the California Energy Commission (CEC) for undertaking this stakeholder engagement in relation to the proposed changes to Title 24. As detailed below, ecobee believes that certain changes to Title 24, namely section 110.12(a) and its applications to smart thermostats (as defined by Joint Appendix 5) could have negative impacts on both customer experiences and innovation in the energy sector. ecobee requests that the CEC consider the comments below and appropriately alter the proposed language to account for these impacts.

ecobee overview

Founded in 2007, ecobee manufactures and sells smart, Wi-Fi thermostats that save energy, provide comfort and facilitate automated management of other home devices and applications, including Energy Management Technologies (EMTs). ecobee residential thermostats are recognized by end-use and utility sector customers for their unique approach to managing heating and cooling in the home since certain newer generation thermostats can pair or ship with wireless, remote sensors. These sensors detect temperature and occupancy in every room in which they are placed, providing comfort and options for efficiently managing temperature in the rooms homeowners frequent the most, while saving energy when they are outside the home.

ecobee is also recognized within utility sector, software development communities, and by consumers, for the following:

- Thermostat data services, which are used by multiple ecobee utility partners for Evaluation, Measurement and Verification (EM&V), and by developers for the creation of EMT software and services;
- Demand response and load management software and services;
- Dedicated Small and Medium Business (SMB) targeted commercial services and thermostats, which allow SMB customers to monitor and control separate HVAC systems at multiple sites and locations to support energy and cost savings.

ecobee OpenADR VEN and Open APIs

ecobee's cloud infrastructure is currently certified as an OpenADR Virtual End Node (VEN). By using our cloud infrastructure as the VEN, it greatly streamlines the implementation of OpenADR on ecobee devices. This reduces the need for the complete OpenADR stack to

be implemented directly on the device and makes upgrading the protocol a simpler process in comparison to sending a firmware upgrade to devices in the field.

Further, ecobee openly and freely publishes its APIs online to allow for device control through our cloud infrastructure. ecobee also provides a "Utility API" designed for utilities and other energy companies to use in demand response and energy efficiency programs in conjunction with ecobee's server infrastructure. The combination of the above allows ecobee's thermostats to be broadly accessed and controlled but with appropriate cybersecurity measures in place to insure customer satisfaction and protect the personal and private information of customers.

Should the CEC go forward with the implementation of Section 110.12(a), ecobee believes that the use of a cloud-based OpenADR certified VENs should be an appropriate means of complying with CEC's policy goals.

Issues with enforcing OpenADR on all Demand Responsive Devices

ecobee recognizes the CEC's concern with regards to stranded assets. Given the degree of investment being directed into smart thermostats and other *Smart Home* devices by the State of California and California electricity and gas rate payers, the concern is founded. ecobee appreciates that the CEC is attempting to address this issue by enforcing that all Demand Response Devices must be OpenADR enabled. However, ecobee foresees many practical issues by enabling all customer devices, and more specifically thermostats, to be able to receive a demand response (DR) signal directly from any OpenADR Virtual Top Node (VTN).

ecobee's server infrastructure acts as a control to who may access a thermostat and provide it a demand response signal/event. DR signals/events can be routed through our OpenADR certified VTN by utilities, their third-party Demand Response Management Systems (DRMS) service providers or third-party DR aggregators. ecobee's cloud infrastructure prevents a customer from accidentally enrolling into multiple demand response programs which would cause significant customer dissatisfaction if multiple parties issued a DR event simultaneously.

Practically speaking, under a framework where all devices are OpenADR enabled without additional controls to arbitrate third party access, this could cause situations where customers would 1) receive two concurrent DR events which would lead to a significantly altered temperature setpoint causing a customer to opt out of DR program participation or 2) that one event would override another yielding one of the DR aggregators or utilities to not obtain the load impact reductions it expects. Further, as ecobee continues to refine its offering of its thermostat "Smart Features", allowing other third parties access to the device could compromise ecobee's customer promise by relinquishing the control of those features over to other entities. Where a device is configured to only connect to one VTN, this could prevent customers from enrolling into programs offered by multiple utilities for different fuel types in the future (for example, in the future, consumers may be eligible to participate in Southern California Gas' Smart Control Thermostat Program and Southern California Edison's Save Power Days Program concurrently).

As the Smart Home of the future continues to evolve and continues to be more open to the various devices and protocols available in the market, it is important that controls remain in place to ensure customer's devices are optimized with comfort and energy cost as the primary goal.

Application of 110.12(a) to Building and Technology Types

As ecobee's continues expand its product portfolio, our thermostats which may be considered by some to be exclusively targeted at single family residential buildings, are now being used in small-and-medium businesses (SMB) and multi-unit residential building (MURB) applications. ecobee believes that 110.12(a) should be refined to target specific systems or technology types where the CEC has specific concerns around stranded assets and not be broadly applied to all demand responsive controls and building types.

We recommend that the use of OpenADR VENs be used as a means of complying for 110.12(a) for SMBs and MURB suites (for clarity, not systems applying to common areas in MURBs). This would eliminate the need for thermostat providers to specifically design products for those market verticals. Requiring OpenADR on those devices only would be unduly burdensome at this time to accommodate from both a technological design and supply chain perspective.

Lighting Controls

ecobee will be releasing the first voice enabled smart light switch to the U.S and Canadian market in March of 2018. In reviewing 110.12(a) and other sections applied to Non-Residential Buildings, it appears that lighting controls will need to be 1) OpenADR certified and 2) capable of dimming as a means of responding to DR events where a certain W/sq.ft. threshold is met. While it appears this Code change is aimed at common area lighting systems, it is possible that it could impact in-suite lighting controls as well.

While this document speaks mainly to the impacts of requiring OpenADR directly on thermostats, ecobee sees potential issues with requiring OpenADR on light switches and the use of dimming as a response to a DR signal in MURB suites. ecobee would be pleased to discuss the potential impacts of requiring OpenADR on residential lighting controls with the CEC in the future and examining whether using a cloud based VEN is a more suitable solution in this scenario.

Summary

ecobee thanks the CEC for engaging stakeholders on the proposed updates to Title 24. ecobee strongly believes that requiring all DR enabled _devices_ to be OpenADR enabled is likely to lead to poor customer experience and ultimately compromise ecobee's customer value proposition as well as stifle future innovations to further optimize energy consumption in the home. We believe that our requiring cloud-based OpenADR certified VTN is the appropriate response to enable the CEC's goal of streamlining the protocols used in market to perform DR events.

Sincerely,

Jonathan Houle
Manager, Energy Services

CC: Gabriel Taylor, PE
California Energy Commission