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ecobee Comments on the January 10, 2020 Draft Scoping Memo for the Load Management Standards Rulemaking

Our thanks to the California Energy Commission (CEC) Commissioners and Staff for this opportunity to comment on the Load Management Standards Rulemaking. ecobee strongly supports the opening of this proceeding and the proposed scope set forth in the CEC's draft memo of January 10, 2020.

As explained in that memo, California's planned move to a zero-carbon grid incorporating significant amounts of intermittent, carbon-free generation "will require carefully planned communications and transactions between supply and demand to achieve the automated demand flexibility needed to ensure the efficiency, cost-effectiveness, and reliability of the electric grid," including through an update to the CEC's load management standards. ecobee specifically supports the CEC's stated goal of amending the load management standards "to form the foundation for a statewide system that automates the creation of hourly and sub-hourly costs or signals that can be used by end-use automation to provide real-time demand flexibility on the grid."

Approaching this task through a revision of the Load Management Standards makes sense given that the authorizing statutory provision, California Public Resources Code § 25403.5, provides for coordination across utilities and agencies (particularly the California Public Utilities Commission (CPUC)). A statewide, cross-agency approach is necessary to develop a framework that will allow automation technologies to receive the required signals to optimally and cost-effectively manage a customer's load on an hourly or sub-hourly basis and to ensure effective policy implementation that creates a market at scale for such technologies.



The opening of this proceeding is particularly timely because ecobee has recently introduced a new platform to facilitate cost-effective customer load management in response to time-varying price signals. This platform, eco+, is a software upgrade for consumers that is being pushed out to all ecobee smart thermostats to improve the energy performance of residential HVAC systems. The platform consists of algorithms for personalized time-of-use (TOU), demand response (DR) and energy efficiency optimization. eco+ exists in the market today and is already providing services to customers and utilities.

ecobee enlisted third party experts to measure the impacts of the eco+ platform using the largest randomized encouragement design ever conducted for smart thermostat optimization, making the results especially robust for policymaking and long-term planning purposes.¹ The results show significant potential for cost-effective load management in California using smart thermostats that offer personalized rate optimization out of the box,² rather than requiring significant customer knowledge and detailed input or utility/third party control. This approach can provide benefits to all customers in providing demand flexibility through HVAC control, but may be particularly useful for residential customers newly transitioning to default TOU rates. (See Draft Scoping Memo, Question 3.) ecobee therefore urges the CEC to specifically consider eco+ among the technologies and strategies addressed in this rulemaking, including among the technologies where the CEC seeks to encourage automation. (See Draft Scoping Memo, Question 2.)

eco+ provides a new tool alongside existing smart thermostat functionalities to provide additional demand flexibility, but leveraging all of these capabilities requires putting the customer at the forefront of the discussion. eco+ was built with the customer in mind, allowing customers to be in control and at the center of decisions around their home's HVAC optimization through the selection of personalized savings preferences. It is

¹ See the accompanying Eco+ Thermostat Optimization Pilot (filed confidentially) for the full measurement and verification report of the eco+ platform, which includes time-of-use optimization results for select PG&E and SMUD residential rates.

² eco+ accounts for real-time and historical occupancy patterns, customer comfort preferences and a dwelling's specific thermal dynamic properties and HVAC system performance in order to create personalized real time rate optimization.

imperative that the customer remains a central focus of this rulemaking, especially as the CEC considers guidelines for communications among utilities, customers, and load management devices through tariff design, data access policy, customer information labels, and other mechanisms. (Draft Scoping Memo at 4.) ecobee offers four specific substantive recommendations in this area:

1. Vendors need to be able to maintain control over their products so that the customer experience, the protection of customer data and privacy, the incentive to innovate and move the market forward, and ultimately the overall effectiveness of load management programs is not sacrificed.
2. In order for technology to best provide a solution for customer load management, there should be a way to seamlessly match customers to their applicable tariffs. Making data access part of this rulemaking would help facilitate such matching. There should be different levels of data access, and enabling the identification of customer tariff selections (i.e., the name of the tariff a customer is on) is not particularly intrusive and could increase the achievable benefits from end-use automation technology. This avoids forcing individual customers to act as “middlemen” between utilities and load management devices by identifying and selecting their applicable rates, an inefficient approach that may prevent achieving maximum customer and grid benefits without costly customer education.
3. If California seeks to move to more complex variable rates beyond TOU to provide additional load flexibility, such as real-time pricing or locational price signals, there must be a seamless way to communicate price signals to vendor and service provider cloud infrastructure so that appropriate, customer-centric optimizations can be performed. This is especially important because more complex rate designs are more difficult for customers to understand and respond to. Accordingly, adoption of more complicated rates could leave only the most sophisticated and engaged energy consumer that actively manages their energy usage able to effectively respond to such rates if there is not a framework in place for load management devices to do so automatically. There are different models that would suffice, such as receiving signals through a vendor’s cloud via OpenADR or standard PUSH

API, as long as the vendor maintains the control of its product to allow for an effective, customer-oriented interface. Additionally, any framework for real-time pricing should truly reflect wholesale market prices and carry forward negative pricing to end consumers if the goal is to best provide automated demand flexibility.³

4. ecobee also recommends the addition of one issue to the scope of this proceeding that may not otherwise be addressed by the CEC in adopting standards for a load management program: the measurement and verification and monetization of load management services so that the market will have a continuing incentive to innovate and improve in providing cost-effective load flexibility for customers. Although implementation of the CEC's load management standards may be largely in the hands of other agencies such as the California Public Utilities Commission (CPUC), beginning a conversation on this topic at this initial stage may provide valued input for the CEC and all involved as to the best approach to load management program design. Solutions like eco+ can assist in encouraging the shifting of consumption to times of oversupply of carbon-free generation on an hourly or sub-hourly basis with proper signaling and market incentives.

Overall, ecobee urges the CEC to expeditiously carry out its proposal to develop a “consistent statewide foundation” for load management in California. (Draft Scoping Memo at 4.) Although the State has taken myriad steps to promote adoption of cost-effective load management technologies, both the CEC and the CPUC have recognized that more needs to be done, especially as evolving rate design policies and technologies increase the complexity but also the potential benefits of load management for all customers. For example, the CEC's current draft Integrated Energy Policy Report recommends that the State work to:

open programs that offer comprehensive solutions with demand flexibility, demand response, electric vehicle, solar photovoltaic, and storage, in addition to traditional energy efficiency measures. Significant work is

³ See <https://hourlypricing.comed.com/live-prices/>



needed to breakdown the silos separating funding for this, ensuring that funds are available on a rolling basis, and made easily available to low-income and disadvantaged communities.

(Draft Integrated Energy Policy Report at 58.) Similarly, the CPUC has recognized the need for integration efforts between energy efficiency, demand response, and time-varying rate programs in the residential sector, recommending an initial focus on HVAC technologies and facilitating automatic response to new TOU rates. (CPUC Dockets A17-01-013 et al., Decision Addressing Energy Efficiency Business Plans at 36 (June 5, 2018).) These proposals underline the need to provide a uniform, statewide framework for deployment of cost-effective load management technologies that is coordinated with California's multiple parallel efforts to make progress toward a zero-carbon grid. Updated load management standards would provide such a framework for the state's utilities, agencies, and customers to work toward automated demand flexibility as a goal in of itself, rather than as a corollary to other tangentially related programs.

Thank you again for the opportunity to offer these comments. ecobee looks forward to continued participation in this proceeding.

Respectfully submitted,

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