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ecobee Comments on “Draft Staff Report: Analysis of Potential Amendments to the Load Management Standards”

ecobee thanks the California Energy Commission (CEC) Commissioners and Staff for this opportunity to comment on the draft Staff Report entitled “Analysis of Potential Amendments to the Load Management Standards” (Draft Staff Report), filed in Docket No. 19-OIR-01 in March 2021. ecobee continues to strongly support the opening of this proceeding and the CEC’s overall efforts to implement the flexible load management technologies needed to achieve California’s emissions reduction goals in a cost-effective manner.

ecobee, a leading developer of smart thermostats and other smart home products and services, approaches this proceeding as potential Automation Service Provider (ASP) that has the capability to enable cost-effective load management consistent with the Warren-Alquist Act, Public Resources Code § 25403.5. As described in previous comments in this docket and the parallel Flexible Demand Appliance Standards proceeding,¹ ecobee’s software platform “eco+” can apply algorithms for personalized time-of-use, demand response, and energy efficiency optimization to improve the energy performance of residential HVAC systems.² The draft Staff Report outlines steps that will facilitate application of such tools across the state in conjunction with time-varying rate signals. However, ecobee offers three proposals, based on its hands-on experience with customer load automation through the rollout of its eco+ software, that are aimed at ensuring the draft Load Management Standard amendments and associated Staff

¹ Docket No. 20-FDAS-01, ecobee Comments on Flexible Demand Appliance Standards (Feb. 3, 2021).

² ecobee Comments on the January 10, 2020 Draft Scoping Memo for the Load Management Standards Rulemaking (Jan. 24, 2020); *see also* <https://www.ecobee.com/en-us/eco-plus>.

Report provide a complete and robust framework for automating flexible load to provide the full array of grid, customer, and market benefits:

1) Establish a Mechanism to Provide Visibility for Grid Operators

As discussed in the draft Staff Report, a Rate Identification Number (RIN) access tool as contemplated under proposed § 1623(d) is important to allow ASPs to act on behalf of utility customers to optimize load management in response to rate signals.³ However, this one-way communication does not provide visibility for utilities and other grid operators such as the California ISO (CAISO) to know where and in what amounts customer load is changing. Currently, absent direct device participation in CAISO (which is not broadly enabled due to barriers to participation using the OAuth open standard and otherwise), there is no mechanism for grid operators to gauge the customer response to marginal grid signals and adjust their decisions to the extent customers shift load or reduce peak in ways that could reduce generation, transmission, and distribution costs. This type of one-way signaling framework has undermined the usefulness of existing programs such as CAISO's Flex Alert emergency demand response program, which offers no visibility into customer response to calls for voluntary load reductions, prompting the California Public Utilities Commission to articulate concerns about measurement and verification of load reductions achieved through Flex Alerts.⁴

Information regarding the location and quantitative load reduction contributions of utility customers is key to preventing the unnecessary procurement of reliability resources that are more costly and polluting, and to enabling utilities to predict and act on load reductions to provide distribution- and transmission-level benefits through non-wires alternatives and other system planning applications. Transmitting such information to grid operators is therefore consistent with the goal of the revised Load Management Standards to “improve electric system efficiency and reliability, lessen or delay the need for new electrical capacity, and reduce fossil fuel consumption and greenhouse gas emissions, thereby lowering the long-term economic and environmental costs of meeting the State’s electricity needs.”⁵ This need for visibility applies to all time-varying rates that will be made available from the MIDAS system and associated RIN tools, even beyond the real-time rates proposed to take effect in 2023. As major California

³ Draft Staff Report at 13-14.

⁴ See, e.g., California Public Utilities Commission, Decision 20-12-026 (Dec. 21, 2020) at 11 (finding that “[t]he energy conservation impacts of Flex Alerts are difficult to measure and verify due to the nature of mass market campaigns”).

⁵ Draft Staff Report at 51-52.

utilities complete their transition to default time-of-use rates, the potential benefits from automated response to such rate signals will increase substantially, and each of these time-varying rates produces a range of valuable grid benefits that should be accounted for in system planning and compensated appropriately.

As one example of such a mechanism, the Arizona Corporation Commission has directed the Arizona Public Service Company to establish a tariff providing for the aggregation of distributed storage and demand-side resources based on their provision of capacity, demand reduction, load shifting, locational value, voltage support, and ancillary and grid services, among other operating characteristics, and also directed that the tariff should provide compensation to the suppliers of these services – including aggregators such as the ASPs described in the draft Staff Report.⁶ This type of tariff can provide a platform for utility programs to enter into contracts with ASPs directly implementing load management that allow for communication regarding the timing, location, and amount of customer load shifting. Programs that offer visibility into these actual impacts will allow grid operators to better utilize automated load management information in making more efficient distribution, generation, and transmission investment decisions, thus reducing costs for all customers. They will also ensure that ASPs receive appropriate compensation reflecting the value of the flexible load resources that they actually deliver to the grid, directly incentivizing the results sought by the CEC from these services.

Adopting the same approach here would be consistent with CEC Staff’s vision for a cohesive effort in which utilities establish umbrella programs “to help customers respond to prices and GHG [greenhouse gas] signals.”⁷ Therefore, ecobee urges the CEC to add the underlined language to its proposed Load Management Tariff Standard amendments as follows:

§ 1623 Load Management Tariff Standard

* * *

(e) On or prior to September 30, 2022, each utility shall establish a program to enable communication with service providers regarding the time, location, and magnitude of customer response to time-varying rate signals (including both price signals and greenhouse gas signals), and compensate service providers for the value of such customer response.

⁶ Arizona Public Service Commission, Docket No. E-01345A-19-0148, Decision No. 77762 (Oct. 2, 2020) at 8; Decision No. 77855 (Dec. 31, 2020) at 3.

⁷ Karen Herter, CEC Load Management Standards Update (Oct. 14, 2020) at 14, docketed March 22, 2021.

2) Allow Use of the Rate Identification Number Access Tool Without Green Button Connect

ecobee supports broad implementation of the RIN access tool to allow ASPs to provide customer-authorized automated load management services. In order to maximize the effectiveness of this tool, the CEC should ensure that it offers flexible authorization mechanisms. In particular, the tool should not rely exclusively on one particular protocol such as Green Button Connect in order for an ASP to obtain customer rate information.

Where utilities have implemented Green Button Connect in California, ecobee's experience has been that requirements for customers to fill out specific, and at times arcane, information to authorize access to retail meter data creates barriers which results in participation rates in the low single digits. In programs where access to customer retail meter data is not an issue and enrollment mechanisms are more flexible – allowing customers to opt in through checking a box or enabling an in-app feature – ecobee's customer participation rates can be significantly higher. That holds true for Smart Meter Texas, the Texas meter data management entity, which allows vendors to input an address for customers to obtain a unique customer identifier. The customer identifier can then be submitted for the grid operator (ERCOT) to use in obtaining customer meter data for settlement, without the need for a more laborious customer authorization mechanism. This approach has resulted in participation rates 20 times greater than through Green Button Connect.

Fundamentally, the less friction for the customer in providing necessary authorizations, the more likely the customer is to participate in a utility program. Illustrating this point, a 2019 report by the California Public Utility Commission's Energy Division described an analysis by demand response provider EnergyHub finding that:

requiring customers to provide utility account numbers to enroll in DR [demand response] programs – not required in programs in Texas – resulted in an 84% drop-off in customer enrollments. In addition, requiring customers to complete CISR [Customer Information Standardized Request] forms resulted in a 39% decrease in customer enrollment applications, according to EnergyHub. These obstacles led EnergyHub to enroll just 3% of eligible California customers it targeted for DRAM [the Demand Response Auction Mechanism], as compared with over 40% in Texas.⁸

⁸ Energy Division's Evaluation of Demand Response Auction Mechanism – Final Report [Public Version – Redacted] at (Jan. 4, 2019), *available at* <https://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442460092> (citing EnergyHub, "Optimizing the demand response enrollment process: Best practices for customer

Similarly, allowing ASPs to access customer rate information – which is much less sensitive than individual customer meter data – through a flexible range of mechanisms to verify a customer’s identity and appropriate authorization should likewise reduce friction and maximize customer participation. Existing law in California already allows vendors under contract for utility programs to have access to tariff information.⁹ As detailed above, such contracts will be vital in the context of implementing revised Load Management Standards so that utilities and CAISO have visibility regarding the time, location, and extent of impacts of load automation technology for system planning purposes. Therefore, ecobee urges the CEC to ensure that the RIN access tool is compatible with utility contract mechanisms or other approaches to customer authorization other than Green Button Connect.

3) Affirmatively Provide Load Flexibility Incentive Programs

The draft Staff Report correctly identifies the need for customer marketing and education regarding available load automation technologies.¹⁰ It also correctly notes that such marketing and education represents a “minimum” approach¹¹ that will not affirmatively incentivize customer adoption of flexible load technologies.¹²

The alternative described in the draft Staff Report under which “utilities would offer programs to incentivize demand flexible controls”¹³ should be implemented because the current situation in California is broken. Load flexibility is not properly valued in existing energy efficiency and demand response programs because they rely on average kilowatt-hour and kilowatt reduction values that do not reflect benefits from reducing usage at specific times and in specific locations in response to rate signals. Moreover, with their focus on usage and demand reduction metrics that do not capture how the GHG emissions resulting from electricity consumption may vary over time, traditional energy efficiency and demand response programs do not value the benefits from utilizing flexible load to reduce GHG emissions and effectively integrate renewable resources independent from generic kilowatt-hour or kilowatt impacts.

enrollment and a seamless customer experience,” White Paper, 2016, *available at* <https://info.energyhub.com/optimizing-demand-response-enrollment>).

⁹ California Public Utilities Commission, Decision 11-07-056 (July 29, 2011) at 31-38; Public Utilities Code §§ 8380-8381.

¹⁰ Draft Staff Report at 15-16.

¹¹ *Id.* at 16.

¹² *Id.* at 69.

¹³ *Id.*

The result has been the erosion of incentives for load flexibility technologies such as smart thermostats, with major California utilities no longer offering residential customer rebates for smart thermostats through their energy efficiency programs.¹⁴ Additionally, in demand response programs, consistent price or greenhouse gas optimization becomes incorporated into baselines for customers, with the result that program managers who are seeking to maximize kilowatt reductions from those baselines are in fact disincentivized from leveraging flexible load technologies.

For these reasons, it is fair to assume that automation technology that responds to price or greenhouse gas-based signals to provide daily load flexibility will not be properly incentivized through existing programs, and certainly not to the significant levels of adoption needed to minimize renewables integration costs as California works to achieve ambitious GHG-reduction targets. The CEC has already recognized as much in stating in its recent SB 100 Joint Agency Report that “the growth of load flexibility” in California is constrained by the “limited mechanisms to compensate for load flexibility in current utility programs and rate designs.”¹⁵

The CEC should therefore provide a directive in the amendment of the Load Management Standards for utilities to establish programs to incentivize deployment of cost-effective load flexibility technologies as described in Chapter 10, section D.2 of the Draft Staff Report. Such programs will address a number of weaknesses in existing utility efficiency and demand response programs as described in the Draft Staff Report, including:

- Demand response programs that offer only “Boolean” customer choice between participating in events or opting out entirely, and constrain the number of events per year, have inherently limited reach and fail to incentivize flexible customer participation according to individual preferences and non-event day peak reductions;¹⁶
- The lack of programs aimed expressly at incentivizing flexible load resources means there is little incentive for manufacturers of load automation technologies to innovate and/or explore enhancements to the user experience in order to realize peak reductions

¹⁴ See, e.g., <https://www.sdge.com/rebates>.

¹⁵ 2021 SB 100 Joint Agency Report (Mar. 2021) at 110, available at https://www.energy.ca.gov/sb100#anchor_report.

¹⁶ Draft Staff Report at 10.

that are not already valued in energy markets or through narrowly tailored utility programs;¹⁷

- Existing programs are not designed to ensure “affordable access to . . . responsive automation technologies” for customers on time-varying rates, even as most large California utilities are implementing or have implemented default time-of-use rates;¹⁸
- Utility programs to implement time-of-use rates do not account for recent studies showing that residential customers’ willingness to enroll in such rates is greatly increased when customers are concurrently offered automated load management technologies such as smart thermostats that they can “set and forget”;¹⁹
- Some customers may value the greenhouse gas reductions available through load shifting more than cost savings in response to price signals, and for those customers “free or rebated automation technologies that respond to . . . [rate] signals might be more appropriate than a financial incentive” in the form of bill savings;²⁰ and
- Programmatic incentives for the adoption of automated load management technology will help foster “robust responsive automation markets” as a vital complement to statewide rate signals.²¹

A directive for utilities to implement programs to address these problems by directly incentivizing automated load management technologies can easily be codified through new underlined language in the proposed Load Management Tariff Standard amendments as follows:

§ 1623 Load Management Tariff Standard

(f)(1) This standard requires a utility develop programs to incentivize customer adoption of automated load management technologies that are responsive to time-varying rate signals, and that the utility propose such programs to its rate-approving body.

(2) Load Management Incentive Programs. On or prior to March 31, 2023, utilities shall apply for approval of at least one program to incentivize residential customer adoption of automated load management technologies in conjunction with enrollment in a tariff or program enabling automated responses to time-varying rate signals. The program shall include an analysis of the costs and benefits of such a program, including benefits in reducing overall greenhouse

¹⁷ *Id.* at 10-11.

¹⁸ *Id.* at 11.

¹⁹ *Id.* at 15-16, 69.

²⁰ *Id.* at 16.

²¹ *Id.* at 51.



gas emissions. Utilities shall provide the CEC with informational copies of tariff applications when they are submitted.

This proposed amendment will ensure that utilities analyze and propose load management incentive programs for consideration by the California Public Utilities Commission and implementation to the extent such programs can benefit customers and the grid. Absent this requirement, those benefits may not be fully realized despite the CEC's best efforts.

Respectfully submitted,

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