

**DOCKETED**

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California Energy Commission  
Docket Unit, MS-4  
Docket No. 20-FDAS-01  
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Sacramento, CA 95814

Submitted Via Email

**RE: Comments of Google LLC to the California Energy Commission’s Draft Proposed Regulatory Language for the Flexible Demand Appliance Standards, Docket 20-FDAS-01**

Dear Commission Staff:

Google LLC, on behalf of its Google Nest thermostat division, hereinafter “Google Nest,” appreciates the opportunity to provide the Energy Commission comments on the draft of the proposed regulatory language for the Flexible Demand Appliance Standards (“FDAS”) that was posted to Docket 20-FDAS-01 on September 30, 2021, hereinafter “Draft Regulations.”

Google Nest’s devices include the Google Nest Learning Thermostat, the Google Nest Thermostat E, and the new Google Nest Thermostat. These smart connected thermostats (“SCTs”) are each equipped with occupancy sensors, Wi-Fi capability, and smartphone grade processing, which together help our customers consume less energy. Google Nest thermostats learn occupant preferences, adjust temperatures to reduce energy consumption when the house is empty, and automatically lower air conditioning runtime when humidity conditions permit. All Google Nest SCTs currently on the market allow residential customers to participate in demand response (“DR”) programs and future load flexibility programs administered by utilities or third-party aggregators.

Google Nest intends for its participation in this proceeding to assist the Energy Commission in developing FDAS regulations that further California’s energy efficiency policy and goals, contribute to reductions in residential customer energy demand during the net peak demand period, reduce customers’ cost of heating and cooling their homes, and to provide feedback that results in standards that can be executed by appliance developers, with an eye towards customer privacy, cybersecurity, and usability.

Google Nest is further interested in consistency across federal and state appliance and demand response programs and standards. Accordingly, Google Nest’s participation will be



primarily focused on consistency between the Energy Commission’s regulations affecting SCTs, and consistency between the Energy Commission’s appliance standards and the California Public Utilities Commission’s (“CPUC”) provisions for investor-owned utility demand response programs. Google Nest will also use these comments to differentiate the SCT market and technology from the other appliances included in the FDAS.

In summary, Google Nest provides the following comments on the Draft Regulations:

1. The cybersecurity provisions are overbroad and generally not applicable to smart connected thermostats.
2. In identified instances, customer consent provisions are better suited for the manufacture website or product packaging, as opposed to using the device to communicate customer consent policies.
3. The marking requirements should permit alternative means for providing the thermostat’s date of manufacture.

Google Nest’s comments on specific sections of the Draft Regulations below. At this time, Google Nest has no response on portions of the Draft Regulations not addressed herein.

**A. Proposed Section 1691, General Reliability and Cybersecurity Standards, is Overbroad and Contains Provisions that are Not Applicable to Smart Connected Thermostats.**

1. *The Cybersecurity Standards Incorporated in Section 1691(b) are Overbroad and not Applicable to Smart Connected Thermostats.*

Google Nest believes that cybersecurity is a paramount feature for SCTs, and Google Nest has cybersecurity protections built into the proprietary demand response application programming interface (“API”) of its SCTs. Google Nest appreciates the intent of the Draft Regulations to protect owners and users of connected devices; however, the Draft Regulations fail to ensure consumers are protected. Section 1691 imposes an imprecise and open-ended list of cybersecurity protocols that either do not apply to connected home devices or are so broad as to be infeasible.

For example, the Draft Regulations encompass not only the National Institute of Standards and Technology’s full suite of reliability and cybersecurity protocols, which Google Nest notes generally do not apply to connected home devices, but pulls in any “other cybersecurity protocols that are equally or more protective.” Such an ambiguous standard makes it challenging to identify potential cybersecurity standards that are developed in different venues over time and could be applicable to SCTs sold or offered for sale in California. It would be difficult to determine whether the Google Nest API or other SCT features require modification to be compliant with the California FDAS regulations. Also, the North American Electric Reliability Corporation’s Critical Infrastructure Protection standards for the bulk electric grid do not apply to SCTs as the actual functioning of the grid is unaffected by smart thermostats.



Google Nest suggests either the deletion of this proposed language, our preferred outcome, or, in the alternative, the following change:

Where applicable, flexible demand appliance standards and technologies subject to this Article shall be based on the cybersecurity requirements of state law, ~~the National Institute of Standards and Technology's reliability and cybersecurity protocols, or other cybersecurity protocols that are equally or more protective, and shall comply, at a minimum, with the North American Electric Reliability Corporation's Critical Infrastructure Protection standards.~~

Additionally, we recommend Commission Staff review and consider whether this particular Regulation is required. It merely restates existing law. Moreover, there are federal and international regulatory regimes that make such a regulation of no substantive value. For example, the Staff should consider the Internet of Secure Things (“ioXt”) security profile requirements and certification process.<sup>1</sup> ioXt is a growing industry standard and is applicable to energy appliances. Google Nest supports the Internet of Secure Things Alliance and certifies many of our products against those profiles.<sup>2</sup> Flexible demand appliances, including thermostats, could meet the minimum bar set by the ioXt base profile, without the need for the suggested new regulation.

2. Section 1691(c)'s Requirement that a Logical and Physical Identification be Assigned to a Device is not Applicable to Smart Connected Thermostats.

The thermostat industry is moving away from assigning a unique logical and physical identification for SCTs. In practice, the device's API communicates that there is a dispatchable load, and it is therefore unnecessary for the device to be assigned unique logical and physical identification. Further, assignment of a logical and physical identification does not provide additional security, undermines customer privacy, and is unnecessary for demand response program participation.

Google Nest therefore suggests that Section 1691 subsection (c) be fully stricken.

3. Section 1691(d) Requires Minor Modification to Ensure Security Updates are Maintained.

Google Nest suggests the following minor modification to subsection (d):

(d) Device Configuration. The configuration of the connected device's software shall be changed by authorized entities only.

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<sup>1</sup> See <https://www.ioxtalliance.org/>.

<sup>2</sup> See, for example, the ioXt certification for the Nest Thermostat at <https://compliance.ioxtalliance.org/product/251>.



- (1) The connected device shall include the capability to allow the occupant to restore the **factory installed device's** default settings.

As SCT products have evolved, they are no longer static devices. As with other connected consumer electronics that operate using firmware, the device requires updates to provide security patches or other necessary operational fixes. Consumers would not be well-served with a function that allows them to wipe out necessary firmware updates deemed necessary and that have been processed since the device left the factory. While there are no current applicable regulations, Google Nest acknowledges that this guidance language is in Joint Appendix 5 (“JA5”), Technical Specifications for Demand Responsive Thermostats, of the Building Energy Efficiency Standards; however, the JA5 terminology is antiquated in this respect and should be revised in the next iteration of the appendix. Accordingly, this language should not be extended as a prescriptive requirement for all California thermostats under the FDAS.

#### **B. Google Nest Suggests Small Modification to Section 1692 for Customer Consent.**

Google Nest has extensively commented on customer consent in our response to the Request for Information (“RFI”) in this docket and suggests that the Commission Staff consider the Draft Regulation’s consumer consent provisions in light of our response to the RFI. At this time, Google Nest has minor suggestions for modification of the Draft Regulations’ customer consent provisions.

##### Section 1692. Customer Consent.

(a) Appliances subject to this Article shall provide mechanisms for obtaining customer consent that maximize customers’ use of the appliances’ flexible demand capabilities. These mechanisms shall include, but need not be limited to, the following:

- (1) The **appliance manufacturer** shall ~~have provide~~ notifications ~~on~~ **with** the appliance packaging materials ~~in an accessible place~~ that inform customers of the appliance’s flexible demand capabilities, including, where applicable, that the appliance also has features that allow energy providers or other entities to control the appliance’s flexible demand capabilities with the customer’s consent.
- (2) A manufacturer shall provide information on the manufacturer website of the flexible demand capabilities of the appliance.
- (3) The **appliance manufacturer** shall provide electronic consent functions, **such as** opt-in or opt-out features, ~~and error notifications, on for~~ the flexible demand capabilities.



- (4) The ~~appliances~~ **manufacturer** shall obtain customer consent prior to the collection of customer data.
- (5) The ~~appliance~~ **manufacturer** shall provide ~~features~~ **information on the manufacturer website** to tell consumers of the acceptable use policies of customer data.

Google Nest's suggested revisions for Section 1692 are intended to correct instances where the communication of information to the consumer is better suited for the manufacturer's website or the packaging material, as opposed to this information being built into the device.

### **C. Section 1689, General Marking Requirements, Should be Modified to Allow Alternative Means to Communicate the Thermostat's Date of Manufacture.**

Google Nest thermostats do not currently provide the date of manufacture on the physical exterior of the thermostat, which Google Nest interprets as including the external display piece and the user-facing side of the base plate. From a practical perspective, this marking is unnecessary as it is the make and model of the thermostat that is relevant to the customer, and the only perceptible reason to add this to future devices would be for purposes of complying with California's FDAS program. Such a modification is not desirable as the size and efficient design of Google Nest thermostats do not leave sufficient additional space to add a clear date of manufacture. For this reason, Google Nest suggests that the Draft Regulations be revised to alternatively allow date of manufacture to be provided (1) by display on an accessible place, (2) within or on the original product packaging or (3) within the settings for the device, which could be accessed through the display under the settings portion of the menu.

Google Nest suggests the following changes to Section 1689(b).

- (b) The following information shall be permanently, legibly, and conspicuously displayed on an accessible place on each unit.
  - (1) manufacturer's name or brand name or trademark; **and**
  - (2) model number; ~~and.~~
  - ~~(3)~~
- (c) The date of manufacture, indicating (i) year and (ii) month or smaller (e.g. week) increment shall be provided by at least one of the following methods:**
  - (1) displayed on an accessible place on each unit;**



**(2) provided within or on the original appliance packaging materials; and**

**(3) where applicable, accessible through the appliance's electronic display.**

If the date is in a code, the manufacturer shall immediately, on request, provide the code to the Energy Commission.

**(ed)** See section 1690 of this Article for additional marking requirements for specific appliances.

### **Conclusion**

Google Nest thanks the Commission for this opportunity to respond to these initial questions, and we look forward to working with the Energy Commission to deliver energy savings to Californians.

Sincerely,

/s/

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