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AHAM Comments on 17-AAER-12

Additional submitted attachment is included below.

July 14, 2026

By E-mail

Mr. David Hochschild
Chair
California Energy Commission
Docket Unit
Docket No. 17-AAER-12
715 P Street, MS-4
Sacramento, CA 95814
Docket@energy.ca.gov

Re: AHAM Comments on CEC's Voluntary Performance Framework for Low-Power Modes
Version 1.0; Docket No. 17-AAER-12

Dear Chair Hochschild:

The Association of Home Appliance Manufacturers (AHAM) respectfully submits the following comments to the California Energy Commission (CEC or Commission) on its Voluntary Performance Framework for Low-Power Modes Version 1.0; Docket No. 17-AAER-12.

AHAM appreciates the opportunity to comment on the Voluntary Performance Framework for Low-Power Modes Version 1.0. We appreciate CEC excluding home appliances that are covered by U.S. Department of Energy (DOE) energy conservation standards following AHAM's comments on its November 2024 Request for Information. We continue to urge the Commission not to include the remaining home appliances—residential standalone fans, coffee makers, toaster ovens, air fryers, toasters, and robot vacuums—as in-scope, in-focus products of its performance framework for low-power modes and possible future low power mode regulations. Many home appliances are either unplugged when not in use, spend very little or no time in low power mode, or use very little energy in low power mode.

In case CEC decides to include appliances in its focus despite the good reasons we suggest for excluding them, we comment below in detail in three key areas:

- Network mode should not be included in the definition of inactive mode;
- The utility of features in inactive mode may be negatively affected; and
- The test procedure should be more closely aligned with IEC 602301:2011.

**I. CEC Should Not Include Home Appliances In The Scope Of
Its Voluntary Performance Framework For Low-Power Modes.**

This Voluntary Performance Framework for Low-Power Modes is a method to promote energy savings in devices in their inactive condition, i.e., when not performing their primary function for a user. CEC has stated that its plan is to initiate a process of iterative voluntary energy efficiency improvements and milestones with a regulation backstop if voluntary energy efficiency improvement and participation goals are not met. The roadmap begins with data collection and reporting and if CEC's targets are not met, CEC will refine its scope and pursue regulation.

AHAM supports CEC in its efforts to pursue energy efficiency improvements for California residents. We support energy conservation standards for home appliances that do not eliminate important product features or safety-related functions. As such, we have long been supporters and participants in the federal appliance standards program and the ENERGY STAR program. In this case, however, it does not make sense for CEC to include home appliances as in-scope, in-focus categories of the Voluntary Performance Framework because:

1. These appliances do not use significant amounts of energy in low power mode and the burden of testing and reporting low power mode energy usage outweighs any small benefit associated with potential savings to the extent improvements to decrease energy use or improve efficiency are even technologically feasible.
2. Many home appliances, especially portable kitchen appliances, are typically left unplugged and, therefore, are not using energy when they are not performing their primary function for consumers. Thus, there are not likely to be actual savings attributable to these products from regulating low power mode.

A. Appliances That Are Left Plugged In Do Not Consume Significant Energy In Low Power Mode.

For products that are left plugged in, many of them do not have features that require standby or low power mode. For example, according to AHAM's 2017 Consumer Research, almost 60 percent of residential stand-alone fans were always plugged in, but less than ten percent had a clock or a timer feature meaning that those products are not likely using significant amounts energy in low power mode and may not even have such a mode.

As outlined in Table 1 below, AHAM members conducted standby energy testing according to IEC 62301 and EN 50564 and found that several of the other currently in focus, in scope appliances that may be left plugged in, including toaster ovens, coffee makers, air fryers, and toasters, consume very little energy when in low power mode. In fact, the average is approximately 0.75W of low power mode energy, which would equate to approximately \$3.37 per year for the average consumer. The cost of reporting energy consumed during low power / inactive mode is far greater than the savings in both energy and money for the average Californian. With a growing affordability crisis affecting families across the state, CEC should consider the benefits of such a program with greater scrutiny. Of note, AHAM members indicated they are still evaluating the DCP-LPM.

Table 1: Average Standby Power and Annual Usage

Product	Average Standby Power in Watts ¹	Average Annual kWh When Plugged In	Average Annual Energy Cost When Plugged In ⁴
Coffee makers	1.10	3.18	\$3.07
Toasters	0.28	0.35	\$0.36
Toaster Ovens	0.94	5.60	\$5.41
Air Fryers	0.75	4.81	\$4.65
Average:	0.76	3.485	\$3.37

Sources:

1. Standby power provided by AHAM members data based on testing procedures IEC 62301 or EN 50564
2. U.S. Energy Information Administration (EIA). (2020, 2024). Residential Energy Consumption Survey (RECS) Public Use Microdata.
3. Stevenson Company for AHAM. (2017). Portable Home Appliances Saturation & Usage Study 2017.
4. Average California electricity rate of \$0.3525 used (U.S. Energy Information Administration, Form EIA-861M (formerly EIA-826), Monthly Electric Power Industry Report.).

In the case of products such as coffee makers, which are left plugged in by consumers more often than toasters or toaster ovens, energy savings attributable to decreasing energy in low power mode are insignificant. For example, the U.S. Environmental Protection Agency (EPA) conducted a study to determine whether an ENERGY STAR specification would advance energy savings for coffee makers. In its November 2011 Scoping Report, EPA determined that “certain consumers prefer automatic timer and clock display functionality, which would preclude a zero-watt standby. A well-designed timer may require 0.5 W for operation. Overall energy efficiency savings from standby power modifications range from 3-5 percent.”¹ As such, EPA determined that no further action was required and has not further pursued an ENERGY STAR specification for coffee makers. AHAM’s own findings above confirm this conclusion.

As outlined above, most of the home appliances listed in CEC’s proposed list of in-scope, in-focus product categories for VPF-LPM V1.0 are not left plugged in and therefore consume no inactive mode power. In the few cases in which products, such as toasters, toaster ovens, air fryers, and coffee makers, are left plugged in, the inactive mode power is insignificant. In both cases, the burden associated with measuring, providing, collecting, and communicating data on low power mode energy use for these products is not balanced by a benefit to consumers or the environment, especially within the context of other priorities in the fight against rising inflation and energy costs in California.

**B. Many Portable Appliances Are Not Left Plugged In And Therefore,
Do Not Consume Energy When Not Performing Their Primary Function.**

Many portable appliances such as coffee makers, toaster ovens, air fryers, and toasters are rarely left plugged in by consumers. According to 2017 and 2018 AHAM Consumer Research,

¹ ENERGY STAR Market & Industry Scoping Report: Coffee Makers; November 2011; Accessed at [ENERGY STAR Scoping Report - Coffee Makers](#)

approximately 50 percent of consumers indicated they only have their portable appliance plugged in when it is performing its primary function. As these and other similar appliances are not regularly left plugged in, they do not consume inactive mode power. Additionally in cases where these appliances do have a clock display, approximately 42 percent of consumers indicated they still unplug them after use on average.

Furthermore, unplugging heat-generating countertop appliances when not in use is an established safety practice actively promoted by recognized authorities. The National Fire Protection Association (NFPA) advises that small kitchen counter appliances, particularly those that generate heat, be unplugged when not in use as a safeguard against accidental activation and overheating.² Similarly, the Electrical Safety Foundation International (ESFI) recommends that consumers unplug all small electrical appliances, including toasters, when not in use.³

Products that are left unplugged when not in use by so many consumers and that are encouraged to be unplugged should not be included as in-scope, in-focus products of this data collection as they will provide very little useful information to the CEC or consumers and will fail to meet the CEC's goal of promoting energy savings in devices in their inactive condition.

C. Robot Vacuums Should Be Removed From The List Of In-Scope, In-Focus Product Categories

The CEC's draft Voluntary Performance Framework for Low-Power Modes (VPF-LPM) Version 1.0 lists "robot vacuum" among the 18 in-scope, in-focus product categories and sets minimum participation targets of three manufacturers and fifteen models. Because the robot vacuum unit itself is powered exclusively by an integrated battery and is never mains-connected during use, AHAM interprets this listing as necessarily directed at the docking (charging) station—not the robot vacuum unit itself. On either reading, the category does not belong on the in-focus list. AHAM requests that robot vacuums be moved out of scope or, at a minimum, out of focus.

Inclusion of robot vacuums is duplicative: DOE reporting captures non-charging power that may not always be separated.

The docking station is a battery charger — already regulated by DOE⁴ and the CEC.⁵ Standby mode power for battery chargers—measured with the battery disconnected—is specifically mandated for DOE certification reporting ("standby mode power (P_{sb}) in watts" is in the

² U.S. Fire Administration (FEMA), "Appliance and Electrical Fire Safety," <https://www.usfa.fema.gov/prevention/home-fires/prevent-fires/appliance-and-electrical/>

³ Electrical Safety Foundation International (ESFI), "Kitchen Safety Tips," <https://www.esfi.org/kitchen-safety-tips/>

⁴ 10 C.F.R. § 430.32(z) (battery chargers); 10 C.F.R. § 430.32(w) (external power supplies), <https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-430/subpart-C/section-430.32>.

⁵ 20 C.C.R. §§ 1605.1(w), 1605.3(w) (battery charger systems); 20 C.C.R. § 1605.3(u) (state-regulated external power supplies).

certification template).⁶ That reported figure is not limited to charging circuitry alone. DOE's test procedure acknowledges that power draw cannot always be wholly separated across a product's functions: where functions unrelated to battery charging cannot be switched off, Appendix Y directs that they "shall be set to their lowest power-consuming mode during the test,"⁷ and functions not controlled by the user "will, by default, be incorporated into this measurement."⁸ This reflects the interconnectedness of the circuitry serving battery charging and other functions in these products. The consequence is that DOE data for robot vacuum charging stations—which receive power through a battery charger—may already include the very non-battery-charging power draw the VPF-LPM seeks to collect. The data CEC requests for this category may thus already be submitted to the federal government, at least in part. The framework itself excludes "federally regulated appliances" from its scope,⁹ and the CEC has stated its intent to avoid duplication. Retaining robot vacuums as in focus products risks duplication and contrasts with the framework's own scoping principles.

The DCP-LPM has not been validated—and by its own terms was not developed—for robot vacuums.

In-focus status is reserved for categories where participation targets "act as triggers for potential mandatory standards-setting,"¹⁰ which presumes a high likelihood of compatibility with the Data Collection Procedure (DCP-LPM). That presumption cannot be made for robot vacuums. The round-robin testing that validated the DCP was conducted on mains-powered product categories.¹¹ No autonomous battery device was among them. The CEC has therefore not confirmed that the test procedure can reproducibly isolate the standby power of robot vacuum docking stations that is not associated with battery charging functions—it is merely an assumption, and one DOE's own experience under Appendix Y contradicts. The Commission's own report states that the DCP-LPM "is not developed for individual parts or devices that are primarily powered by an integrated battery."¹² A robot vacuum is exactly that. The CEC cannot reasonably expect participation targets to be met where the test procedure does not apply. Merely clarifying the DCP is not enough, and an improvement plan is an insufficient remedy: the shortcoming is structural, because the DCP does not handle battery-powered products.

Products whose primary mains-connected function is charging an integrated battery should be classified as out of scope or, at a minimum, out of focus. Because the DCP-LPM was neither developed nor validated for autonomous battery devices, and because DOE reporting may

⁶ 10 C.F.R. § 429.39(a)(1), (b)(2), <https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-429/subpart-B/section-429.39>; see also 10 C.F.R. pt. 430, subpt. B, app. Y, §§ 2.25, 3.3.11 (standby measured with the battery disconnected).

⁷ 10 C.F.R. pt. 430, subpt. B, app. Y, § 3.2.4(b), [https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-430/subpart-B \(Appendix Y\)](https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-430/subpart-B/Appendix_Y).

⁸ Id. § 3.3.6(a).

⁹ VPF-LPM at 9.

¹⁰ VPF-LPM at 1.

¹¹ California IOU CASE Team, *Updated Data Collection Procedure Proposal and Round Robin Test Results* (Feb. 3, 2023), TN 248670, Table 1 at 10, <https://efiling.energy.ca.gov/GetDocument.aspx?tn=248670>; see also VPF-LPM app. A at A-1.

¹² VPF-LPM ch. 4 at 20.

already capture docking-station standby power (including non-charging power that may not always be separated), participation targets and the improvement-plan mechanism are inappropriate triggers for potential regulation of robot vacuums. AHAM respectfully requests that the CEC remove robot vacuums from Table 2 and Table 3 of VPF-LPM.

II. Power Consumption Of Network Mode Should Not Be Included.

Measuring energy consumption in an inactive condition should not include network mode, which is consistent with both federal and international standards.

Power consumption on network features is difficult to accurately measure due to variation in high-speed networks across consumer households and the implementation of connected features across appliances. In a 2022 final test procedure for cooktops, DOE determined that there was not enough data “to establish a representative test configuration for assessing the energy consumption of connected functionality for conventional cooking tops during an average period of use.”¹³ Similarly, there is a vast range of in-scope, in-focus products for VPF-LPM V1.0 that may consume power in network mode and the energy consumption across those products, and the various scenarios and settings in which they will be used in households, would be difficult to ascertain because of the differing uses and the developing nature of network features.

Furthermore, the design and operation of these features is evolving as the market, driven by consumer demand, continues to grow for these products. Such connectivity is clearly desirable from a consumer standpoint and setting overly strict inactive mode power limitations as a result of this data collection could impede these innovations and prevent these features, many of which have the opportunity to save energy. As such, AHAM continues to urge CEC to remove measuring network mode from its test procedure and data collection to align with other standard-setting bodies such as DOE and acknowledge the utility of connected products and complications associated with measuring power consumption in network mode.

III. The Utility of Features On Inactive Mode May Be Negatively Affected.

Secondary functions of appliances that are featured in inactive mode, such as a timer or clock, are important to the consumer experience and in some cases, necessary to maintain the product’s proper functionality. In setting its own efficiency standards, DOE has considered the utility of features in inactive mode. In its proposed energy conservation standards for residential conventional cooking products, for example, DOE screened out (meaning DOE eliminated from consideration as a technology option to improve efficiency) a subset of low-standby-loss electronic controls that use “automatic power-down” because they may result in the loss in the utility of the continuous clock display.¹⁴ Incentivizing less inactive mode power will likely have the effect of removing several features that are currently available and valued by consumers, or

¹³ DOE Energy Conservation Program: Test Procedure for Cooking Products; Final Rule; Docket No. EERE-2021-BT-TP-0023-0024; RIN 1904-AF18; 87 FR 1492 (August 21, 2022). pg 51520.

¹⁴ Energy Conservation Standards for Residential Conventional Cooking Products; Docket Non EERE-2014-BT_STD-0005; RIN 1904-AD15; 88 Fed. Reg., 6818 (Feb. 1, 2023).

in some cases, especially as it relates to safety, necessary. Because it is not feasible to decrease low power mode for many home appliances without sacrificing functionality, CEC should eliminate them from the list of in-scope, in-focus categories of the Voluntary Performance Framework for Low-Power Modes.

A. Several Inactive Mode Power Features Are Essential To Product Safety.

Many appliances listed as in-scope, in-focus of this voluntary framework, such as coffee makers and robot vacuums, use low power modes to provide or participate in functions relating to safety and security sensing. These products are real time, continuously functioning devices whose intended use does not allow for cessation of network or safety features in inactive mode. Vital safety features include but are not limited to temperature sensors and electrical safety monitoring. For coffee makers in particular, standby indicator lights can indicate if a unit is charging or hot, reducing the risk of a burn hazard for consumers. In addition, maintaining a network connection for robot vacuums is essential for operation, safety updates, and performance. These safety requirements must be met to protect consumers and therefore, should be considered carefully before imposing any new efficiency requirements.

IV. CEC's Test Procedure Should Align With IEC 62301

If CEC decides to continue forward with collecting inactive condition data for home appliances such as coffee makers, toasters, air fryers, toaster ovens, residential standalone fans, and robot vacuums despite AHAM's strong objections, we recommend that CEC reduce or eliminate the test burden on manufacturers in order to achieve higher participation. Home appliance manufacturers are familiar with and have the appropriate tools to test to the IEC 62301:2011 standard.¹⁵ Manufacturers will be more likely to report data if they can use a test method that is already familiar and does not expand upon or change the existing standard. Another way to reduce burden is to allow reporting of component level power consumption as tested outside of the end-use product. This will allow end-use product manufacturers to use component specifications rather than conduct testing.

AHAM appreciates the opportunity to submit these comments on CEC's Voluntary Performance Framework for Low-Power Modes Version 1.0 and would be glad to discuss these matters in more detail should you so request.

Respectfully Submitted,



Meredith Birkhead
Regulatory Affairs Manager

¹⁵ [https://www.ecfr.gov/current/title-10/part-430/section-430.3#p-430.3\(q\)](https://www.ecfr.gov/current/title-10/part-430/section-430.3#p-430.3(q))

About AHAM: AHAM represents more than 150 member companies that manufacture 90% of the major, portable and floor care appliances shipped for sale in the U.S. Home appliances are the heart of the home, and AHAM members provide safe, innovative, sustainable and efficient products that enhance consumers' lives. The home appliance industry is a significant segment of the economy, measured by the contributions of home appliance manufacturers, wholesalers, and retailers to the U.S. economy. In all, the industry drives nearly \$200 billion in economic output throughout the U.S. and manufactures products with a factory shipment value of more than \$50 billion.