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Comments on the LPM Roadmap and Data Collection Procedure

Additional submitted attachment is included below.

Low Power Mode

Codes and Standards Enhancement (CASE) Initiative
For PY 2017: Title 20 Standards Development

Response to the California Energy Commission's Request for Additional Public Comments on Low Power Mode Data Collection Procedure
Phase 2 Pre-Rulemaking
Low Power Mode
17-AAEER-12

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TABLE OF CONTENTS

LIST OF TABLES

1. Introduction

The Codes and Standards Enhancement (CASE) initiative presents recommendations to support the California Energy Commission's (the Energy Commission) efforts to update California's Appliance Efficiency Regulations (Title 20). The three California Investor Owned Utilities (IOUs) – Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE) – sponsored this effort (herein referred to as the Statewide CASE Team). The program goal is to prepare and submit proposals that will result in cost-effective enhancements to improve the energy and water efficiency of various products sold in California. The information presented herein is a response to the Energy Commission's "Request for Additional Public Comments on Low Power Mode Data Collection Procedure."

The Statewide CASE Team strongly supports the Energy Commission's decision to develop a low power mode (LPM) roadmap and framework as presented during the Energy Commission webinar on January 24, 2019. This response contains the Statewide CASE Team's comments regarding the roadmap outline and products that are out of scope according to the Energy Commission's criteria.

2. Background

LPM, particularly standby and network standby, has been a topic of extensive work internationally, in the United States (U.S.), and in California for decades. As early as 1999, the International Energy Agency drew attention to the impacts of standby power with their One-Watt Initiative, urging countries to establish harmonized standby standards. At that time, standby mode in consumer products typically included "traditional" secondary functions, such as infrared sensing for remote controls, indicator lights, timers, and clocks. Governments and manufacturers responded to the One-Watt Initiative by developing policies and products to reduce the impacts of traditional standby power.

These policies now need to be updated, because today's products have increasingly more functionality in LPM, such as: network connectivity, voice control, presence sensors that can wake the device to its active state, information displays, and other functions that provide services beyond the product's primary function. This presents a large energy savings opportunity in California to reduce the power impacts of LPM associated with this increased functionality and to address always-on devices that can be powered down when their services are not being used. NRDC found that 23 percent of annual residential electricity use in California is due to "idle load"—energy use from products in LPM as well as products left in active mode while unused (NRDC 2015). The Statewide CASE Team has previously estimated that LPM efficiency improvements have a potential savings of 2,400 to 3,600 gigawatt-hours per year in California homes after stock turnover (Statewide CASE Team 2017). This does not include the additional savings opportunities for LPM in commercial products.

3. Roadmap Vision and Data Collection Procedure

The Statewide CASE team applauds the Energy Commission for its innovative LPM roadmap approach, presented by Energy Commission staff in its January 24, 2019 webinar. In particular, the Statewide CASE Team supports the iterative approach of collecting data, modifying scope, setting targets, and evaluating whether or not those targets have been met.[1] Collecting data and estimating energy savings opportunities for an initially broad range of products will allow the Energy Commission to identify and focus on products that present the greatest savings opportunities. The iterative nature of the roadmap process will allow the Energy Commission to increase stringency of targets over time and to adapt the roadmap to a quickly changing market. In addition, establishing a data collection method will allow manufacturers and other stakeholders to collect data in a common manner, share the data with one another, and discuss roadmap parameters (like scope and targets) based on that data. The Statewide CASE Team hopes that this roadmap will produce a collaborative effort between the Energy Commission, manufacturers, and other stakeholders to work towards LPM energy savings targets.

The Statewide CASE Team agrees that the roadmap must include a process to begin mandatory rulemaking if voluntary targets and milestones are not met. As Energy Commission staff noted in the January 24, 2019 webinar, the resulting regulation would require the development of a test procedure. The Statewide CASE Team agrees with the Energy Commission's statement that the test procedure necessary for a regulation is a separate document from the data collection procedure in development for the roadmap. Whereas the former must be a highly rigorous method to determine whether a product complies with a regulation, the current effort – a data collection procedure – will simply allow multiple stakeholders to collect data in a similar manner. This data can then be shared and used as the basis for deciding roadmap scope as well as reasonable targets and milestones.

The Statewide CASE Team is in the process of collecting data and information to answer the Energy Commission's request for additional information regarding the data collection procedure. This information will be shared once the Statewide CASE Team has completed its planned research, which has previously been outlined in comments submitted to the Energy Commission (Statewide CASE Team 2018).

4. Scope

The Statewide CASE Team supports the Energy Commission in considering a broad scope for the roadmap. This includes all products which are not: federally regulated appliances that have low power mode standards; California state-regulated appliances that already have low power mode standards; or appliances that are in other Energy Commission roadmaps. The Statewide CASE Team agrees that collecting data on a broad range of products will allow the Energy Commission and stakeholders to identify where the greatest savings opportunities lie as well as which products are better suited to other

[1] The Statewide CASE Team notes that the data collection procedure may also be part of this iterative process if new products or functions need to be accommodated over the course of the roadmap.

energy efficiency improvement vehicles. The products that would be excluded by the Energy Commission's criteria along with their LPM requirements are listed in Table 1.

Table 1: Excluded Product Categories Based on the Energy Commission's Proposed Criteria

Product category	Regulation type	LPM requirement	Exclusion criterion that removes this product category from the LPM Roadmap scope
Microwave-only ovens and countertop convection microwave ovens	Federal	1 W	Federally regulated appliances that already have low power mode standards
Built-in microwave ovens & over-the-range convection microwave ovens	Federal	2.2 W	Federally regulated appliances that already have low power mode standards
Non-weatherized oil-fired and electric furnaces	Federal	10-11 W[2]	Federally regulated appliances that already have low power mode standards
Boilers	Federal	8-11 W[3]	Federally regulated appliances that already have low power mode standards
Water dispensers	Title 20	1.2 kWh/day	California state regulated appliances that already have low power mode standards
Portable electric spas[4]	Title 20	$5(V^{2/3})$ W	California state regulated appliances that already have low power mode standards

[2] Exact requirement depends on the specific product category.
[3] Exact requirement depends on the specific product category.
[4] Current requirements for portable electric spas.

Portable electric spas[5]	Title 20	$3.75V^{2/3}+40$; $7(V^{2/3})$	California state regulated appliances that already have low power mode standards
Deep-dimming fluorescent lamp ballasts	Title 20	1 W	California state regulated appliances that already have low power mode standards
State-regulated LED lamps	Title 20	0.2 W[6]	California state regulated appliances that already have low power mode standards
Portable luminaires[7]	Title 20	0 W	California state regulated appliances that already have low power mode standards
Compact audio products	Title 20	2W 4W (w/display)	California state regulated appliances that already have low power mode standards
Digital versatile disc players and recorders	Title 20	3 W	California state regulated appliances that already have low power mode standards
Televisions and signage displays	Title 20	1 W	California state regulated appliances that already have low power mode standards
Solar inverters	Title 20 Roadmap	N/A	Appliances that are in other CEC roadmaps

[5] Requirement depends on product category; these updated requirements take effect June 1, 2019.
[6] These requirements take effect July 1, 2019.
[7] Only applicable to portable luminaires that have internal power supplies.

Set top boxes	Title 20 Roadmap	N/A	Appliances that are in other CEC roadmaps

5. Conclusion

The Statewide CASE Team applauds the Energy Commission's roadmap approach on LPM and encourages the Energy Commission to continue to progress through the roadmap to achieve energy savings for Californians. The savings potential of a successful roadmap is substantial; Statewide CASE Team preliminary estimates LPM energy efficiency improvements can save 2,400 to 3,600 GWh/year after stock turnover (Statewide CASE Team 2017). The Statewide CASE Team supports the Energy Commission's iterative approach to setting targets and milestones, which will allow for improvement over time in a rapidly developing market. The Statewide CASE Team also supports regulatory proceedings if voluntary targets are not met. The Statewide CASE Team is actively researching data collection questions highlighted by Energy Commission staff in its January 24, 2019 webinar, and will share findings once its work is complete.

6. References

NRDC (National Resources Defense Council). 2015. Home Idle Load: Devices Wasting Huge Amounts of Electricity When Not in Active Use. https://www.nrdc.org/sites/default/files/home-idle-load-IP.pdf

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