

Appliance Standards Awareness Project
American Council for an Energy-Efficient Economy
New York State Energy Research and Development Authority

May 2, 2022

Mr. Jeremy Dommu
U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy
Building Technologies Office, EE-2J
1000 Independence Avenue SW
Washington, DC 20585

RE: Docket Number EERE-2016-BT-TP-0023: Test Procedures for Television Sets

Dear Mr. Dommu:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), American Council for an Energy-Efficient Economy (ACEEE), and the New York State Energy Research and Development Authority (NYSERDA) on the notice of proposed rulemaking (NOPR) for test procedures for televisions (TVs). 87 Fed. Reg. 11892 (March 2, 2022). We appreciate the opportunity to provide input to the Department.

We strongly support DOE's approach for revising the televisions test procedure outlined in the NOPR. DOE most recently amended its TV test procedures in the October 2013 final rule.¹ TV technology has evolved rapidly since 2013 and the current Appendix H test procedure is not representative of contemporary real-world TV energy usage. Significant concerns were raised in response to the 2016 TV test procedure request for information (RFI) where it was reported that the real-world energy usage of some TVs may be twice that as measured by the DOE test procedure.² The disconnect between energy use as measured by the test procedure and real-world energy usage was attributed in part to:

- Features like motion detection dimming (MDD) using less energy when playing the IEC test clip
- Energy-saving features being automatically disabled whenever a user changed any picture setting
- Inadequate standby power measurements, particularly for "smart" TVs
- The IEC test clip not incorporating ultra-high definition or high dynamic range (HDR) video

We believe the revisions presented in the NOPR, based on ANSI/CTA-2037-C³ and anticipated revisions in 2037-D, largely address each of these concerns. For example, on-mode testing is performed in the new test procedures using multiple picture settings including HDR and with MDD disabled. Further, standby-mode testing is now performed with the TV connected to a WAN (i.e., internet connection) and to three local devices capable of waking the TV via LAN. These and other revisions, such as measuring

¹78 Fed. Reg. 63823.

²EERE-2016-BT-TP-0023-0002, www.regulations.gov/comment/EERE-2016-BT-TP-0023-0002

³Published 10/2021. shop.cta.tech/products/determination-of-television-set-power-consumption-ansi-cta-2037-c

both screen luminance and power consumption concurrently while playing the test clips, are expected to dramatically improve the representativeness of the DOE TVs test procedure.

However, we encourage DOE to consider addressing three issues as part of a future rulemaking. First, we are concerned that the sound level specified for on-mode testing is not representative of real-world TV sound levels. Second, we encourage DOE to develop a new test clip that is more representative of popular content. Finally, we encourage DOE to continue monitoring the repeatability of standby power testing results. These issues are discussed in more detail in the following sections.

We encourage DOE to consider measuring power consumption using more representative TV sound levels. Current Appendix H specifies that the TV volume shall be adjusted to a level at which the sound output is audible for testing. In the NOPR, consistent with 2037-C, DOE instead specifies that the volume control shall be adjusted to a level greater than zero that is closest to 2 percent of the maximum sound level. While we agree that the new proposed method is less subjective, we do not believe that TV sound at 2 percent of maximum is representative of real-world TV volume levels. We encourage DOE to conduct testing at different sound levels to determine the relationship between TV volume and power consumption. For context, an available 55" Samsung TV specifies sound output at 20 W and typical power consumption at 60 W.⁴ While it is unclear precisely what percentage of total on-mode power is associated with varying TV volume levels, this example suggests that the contribution of sound output to total on-mode power usage could be meaningful. Thus, DOE should consider incorporating more representative TV volume levels that better reflect real-world usage as part of a future rulemaking.

We encourage DOE to develop a new test clip that is more representative of real-world video and sound. In comments to the 2016 RFI, several stakeholders suggested that DOE work to update the test clip to be more representative of popular content while avoiding abnormally short scenes.⁵ While DOE is proposing to adopt the HDR10 test clip for HDR10 preset picture testing, the test procedure continues to utilize the SDR IEC test clip for the SDR preset picture tests. Moreover, the current test clips do not play realistic TV viewing-related sounds (e.g., human voices). Thus, we encourage DOE to develop a new test clip with representative video and sound as part of a future rulemaking.

We encourage DOE to monitor standby testing results to ensure that measured standby powers are both repeatable and representative. We believe the proposed test method for measuring standby power, consistent with 2037-C, will be more representative than current Appendix H, particularly for "smart" TVs where standby power can represent a significant portion of overall energy usage. However, DOE acknowledged repeatability issues in the NOPR for standby power measurements and noted that some TVs do not achieve stability even after several days of testing.⁶ Based on these observations, the proposed test procedure states that if the TV does not meet standby power stability requirements by the end of the 240-minute test period, then the stability requirements are waived. While we understand the practicality of this provision as an effort to reduce test burden, we encourage DOE to monitor standby testing results and consider any necessary modifications to the standby testing methods as part of a future rulemaking.

⁴www.samsung.com/us/televisions-home-theater/tvs/crystal-uhd-tvs/55-class-tu7000-4k-uhd-hdr-smart-tv-2020-un55tu7000fxza/

⁵87 Fed. Reg. 11905.

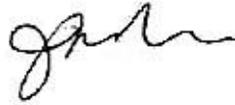
⁶87 Fed. Reg. 11910, 11911.

Thank you for considering these comments.

Sincerely,



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