

***Appliance Standards Awareness Project
Alliance to Save Energy
American Council for an Energy Efficient Economy
Northeast Energy Efficiency Partnerships
San Diego Gas & Electric Company
Pacific Gas & Electric Company***

November 1, 2016

Ms. Verena Radulovic
United States Environmental Protection Agency
Office of Air and Radiation
1200 Pennsylvania Avenue NW
Washington, DC 20460
televisions@energystar.gov

RE: ENERGY STAR Specification for Televisions, Version 8.0

Dear Ms. Radulovic:

On October 3, 2016, the U.S. Environmental Protection Agency (EPA) launched the development process for ENERGY STAR for Televisions Version 8.0 via webinar. This letter is written in response to the topics presented at the webinar, and is submitted on behalf of the Appliance Standards Awareness Project (ASAP), the Alliance to Save Energy, the American Council for an Energy Efficient Economy (ACEEE), the Northeast Energy Efficiency Partnerships (NEEP), the San Diego Gas & Electric Company and the Pacific Gas & Electric Company.

ASAP maintains an ongoing interest and involvement in the ENERGY STAR for Televisions program because televisions are a significant energy end-use and because televisions, like computers and other consumer electronics, evolve rapidly with short product development cycles. ENERGY STAR has the ability to move relatively quickly and to consider changes in technology at a pace that is relevant to the market place. ENERGY STAR is often the first forum where the energy efficiency impacts of new television technologies are reviewed.

As discussed during the October 3, 2016 webinar, TVs are continuing to grow larger as prices for big sets continue to fall. TVs capable of displaying Ultra High Definition (UHD) images continue to increase market share and now a majority of new sets with screens of 50"+ offer UHD. Similarly, TVs with High Dynamic Range (HDR) now account for more than half of all new sets of 50"+ and more than 60% of all new UHD TVs of 50"+. Assuming no other changes, as the illuminated area of a TV screen increases, so does energy consumption. Both UHD capability and HDR capability are positively correlated with increased energy consumption under real-world operating conditions according to research recently conducted by the Northwest Energy

Efficiency Alliance.¹ These trends make it urgent that version 8.0 of the ENERGY STAR for Televisions program effectively promote the development and sale of TVs which have excellent efficiency performance.

We believe that the key to the continued relevance of the ENERGY STAR for Televisions program is the timely completion of an update to DOE's televisions test procedure. It seems clear that the current test procedure is not capable of providing accurate energy consumption estimates for TVs with UHD and/or HDR capabilities under real-world conditions. Recognizing that the update to the test procedure has begun at DOE, we support ENERGY STAR's proposed priority areas for the Televisions version 8.0 development, specifically

- Persistence of energy saving features in various picture settings
- Effectiveness of Automatic Brightness Control (ABC)
- High Dynamic Range (HDR)
- Ultra-High Definition (UHD)

Automatic brightness control (ABC) and motion detection dimming (MDD) are common tools used by television manufacturers to lower set power consumption. A recent report² by the Natural Resources Defense Council (NRDC) found that when a user changed the preset picture setting on some new TVs, that if ABC and MDD were present they were automatically disabled on almost all of the Samsung, LG, and Vizio sets tested. In these cases the TVs tested did not notify the user of the change nor give adequate on-screen warnings that energy use would be increased if the user chose to change the picture mode setting.

The October 3, 2016 webinar discussed the probability that a given television would be operated in a mode that used more energy than the mode in which it was certified as ENERGY STAR compliant. Based on the data presented by EPA, and in the NRDC and NEEA reports, it seems clear that the ENERGY STAR viewing mode indicated for the current television test procedure often results in significantly less energy use than other normal television modes. It is also clear that a television can easily end up in a mode that uses more energy, either as a result of user action to adjust the picture, or as the result of changes to content or input. However, it is also clear that there are televisions on the market that retain their energy saving features even when a picture setting is changed. We recommend that ENERGY STAR for Televisions version 8.0 be capable of recognizing these more energy efficient TVs.

One way that ENERGY STAR can distinguish more efficient from less efficient TVs is by requiring testing in multiple viewing modes, not just the default mode. Requiring energy efficiency over a larger range of picture settings would encourage manufacturers to make TVs that operate efficiently under normal conditions, rather than to include software that optimizes television energy efficiency under test conditions. We support the option of requiring that the test

¹ Revising the TV Energy Use Test Procedure: Incorporating HDR and other Needed Changes, NEEA, 9/2016

² *The Secret Costs of Manufacturers Exploiting Loopholes in the Government's TV Energy Test*, NRDC, October 2016

procedure be performed with ABC disabled, and of limiting allowable power consumption in that mode. We also support the idea of minimum luminance levels to enhance customer satisfaction with ABC, with the objective of preventing ABC from becoming simply a specification compliance tool that that users disable because it interferes with the viewing experience. We also support the option of requiring testing with both native and translated HDR content.

Finally we believe that developments in technology and in the market place for televisions make it now appropriate to eliminate the 50% UHD adder in the ENERGY STAR version 7.0 specification. As noted during the webinar, multiple UHD TV models offered by various manufacturers are already able to meet NEEA's incentive program efficiency requirements without an adder. Given the rapid product development cycle in the television industry, we expect that many more energy efficient UHD TVs would quickly become available if adders were removed from the ENERGY STAR for Televisions specification version 8.0.

Thank you for providing us with the opportunity to provide input on this specification revision.

Sincerely,



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