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Ms. Verena Radulovic  
Product Labeling  
ENERGY STAR Program  
U.S. Environmental Protection Agency  
Via e-mail: [televisions@energystar.gov](mailto:televisions@energystar.gov)

**Re: Panasonic Comments on ENERGY STAR TVs Draft 2 Version 6.0 Specification**

Panasonic appreciates the opportunity to comment on the ENERGY STAR TVs Draft 2 Version 6.0 specification. As a leading manufacturer and marketer of all television technologies, Panasonic is a strong supporter of the ENERGY STAR brand and its program objectives, which have been exemplified in current lineup of our most efficient TV models ever.

EPA's latest Draft 2 Version 6.0 proposal, however, deviates from the program's principals by essentially setting forth a single technology-only specification for large screen sizes. In addition, several of the draft's proposals to fundamentally alter the measurement of automatic brightness control (ABC), and unnecessarily include internet measurements that make this proposed specification overly burdensome. For these reasons, Panasonic cannot support the current proposal.

**Proposed Spec is Technology Biased:**

The Draft 2 Version 6.0 specification would in effect create a requirement that can be met by only a single technology for large screens, based on products currently available on the market. The Draft 2 dataset shows that for TVs larger than 46-inches, all qualifying sets are LED backlit technology with the exception of a single DLP set. It is misleading for the EPA to suggest that multiple TV technologies can achieve ENERGY STAR when in fact only LED-backlit LCD TVs qualify in larger sizes.

It should also be noted that LED-backlit TVs are an LCD TV technology. The predominance of LED models meeting the specification appears to violate one of the ENERGY STAR Program's principles that stipulates product specifications be technology neutral. The current version 5.3 specification is flush with LED-backlit LCD TVs; the proposed version 6.0 specification will only solidify the market bias given to LED-backlit LCD TVs labeled with the ENERGY STAR.

Further, the proposed On-mode power limits in Draft 2 Version 6.0 do not address the uneven playing field fostered by a technology-biased specification. Although the proposed power limits no longer have a hard cap, significantly less power is afforded to larger screens on an area basis.

Consequently, consumers looking for information on energy efficient choices in the larger size TVs will be directed toward a single technology. Panasonic strongly believes this is contrary to ENERGY STAR's objectives and will ultimately diminish consumer acceptance and manufacturer support for the program.

### **Automatic Brightness Control (ABC):**

The most important issue regarding Automatic Brightness Control (ABC) is the selection and weighting of the various ambient illumination levels required during the power measurements. The IEC 62087 committee chose 0 lux and 300 lux (or greater) because they would be easy to supply to the ABC ambient light sensor while ensuring that the TV provided in a repeatable manner the minimum and maximum display brightness respectively.

Panasonic recommends preserving these 0 and 300 lux points while adding a third point near 10 lux in agreement with the ENERGY STAR TVs Version 6.0 Draft 2. This is supported by data from the CLASP report, Analysis of Background Illuminance Levels During Television Viewing, which shows that the peak television viewing occurred between 0 and 10 lux. This 10 lux point may be slightly amended once the data has been published from the CEA/CEDIA Home Illuminance Study.

The accuracy and repeatability of the On-mode power measurements at these three points is critical for product qualification and verification. There is no problem with the 0 and 300 lux points in this regard since the ABC is producing the minimum and maximum brightness respectively. However, the ABC is in its active range at 10 lux, and will be sensitive to both variations in the light on the ABC ambient sensor as well as typical component variations in the ABC circuit. Adding another measurement point in the ABC active range will cause even more uncertainty in the final On Mode power value reported. For this reason, Panasonic does not recommend adding any more measurements in the active range other than the one near 10 lux.

The Equation 1: Calculation of On-mode Power for Products with ABC Enabled by Default specifies equal weighting for all points measured. Panasonic recommends the use of new weighting factors based on the data contained in the previously mentioned CLASP and soon to be published CEA/CEDIA reports on room lighting. For example, the CLASP study stated on page 14 that; "A majority (82%) of nighttime television viewing occurred between 0 lux and 30 lux...". The frequency of the measured illumination values in these reports can be readily applied to determine weighting factors which will reflect real consumer environments.

As already indicated, the On-mode power calculated by the ABC formula must be both accurate and repeatable. Different third party laboratories must be able to supply the identical ambient illumination to the ABC sensor such that the power is reproducible. This is a major reason why the IEC 62087 committee chose the 0 lux and 300 lux (or greater) values. Intricate setup and measurement procedures are not needed with the IEC values since it is easy to achieve 0 lux by covering the ABC sensor, and 300 lux (or greater) can be achieved by increasing the illumination source until the ABC sensor becomes saturated.

If ENERGY STAR Version 6.0 specifies absolute illuminance values in the ABC active range, it will also be necessary to provide a detailed measurement procedure. This should take into account at least the following items:

- 1) The illumination source (focused directly into the sensor or diffused from indirect angles)
- 2) The illumination source frequency spectrum
- 3) The illumination source stability over time
- 4) The meter used to measure the illumination source
- 5) The ABC sensor location
- 6) The ABC sensor light collection angle
- 7) The test room wall reflectivity

Given the complexity, time required, and associated accumulative error of making measurements at multiple absolute illumination values, it is recommended that the measurements be limited to 0, 10, and 300 lux.

**Double Prompt Requirement Anytime TV is Changed from Home Picture Mode:**

While it is likely that the vast majority of the users select the “Home” picture mode upon initial setup, Panasonic believes there will be customer complaints if a double prompt is required anytime that an attempt is made to take the television out of the “Home” picture mode at a later time.

If it is decided by ENERGY STAR to require this double prompt, then we would recommend that the user be permitted to disable this double prompt feature. Regardless, the television would be shipped with the double prompt feature enabled by default.

**Luminance Testing Warm-up and Order:**

Panasonic recommends using the same procedure as currently described in ENERGY STAR TVs Version 5.3 Test Method Section 6.2 Luminance Testing. This specifies that the luminance testing occurs immediately after the On-mode power testing. This ensures that there is no interruption between the prescribed warm-up period and the On-mode power testing. This is necessary to ensure repeatable results in the critical On-mode power measurements.

The DOE NOPR places the luminance testing between the warm-up period and the On-mode power testing. These On-mode power results will not be as repeatable as they would be immediately following the warm-up period.

In the special case where a television may not be able to be switched from the Home mode to the Retail mode, a revised DOE NOPR procedure could be used which specifies the luminance testing prior to the On-mode power testing. However, just prior to the On-mode power test, it should be verified that the warm-up criteria (as specified in the DOE NOPR Section 5.2 Warm-up) is still met.

**Networking Features Additional Testing:**

The note following Draft 2 Section 3.4 Standby-Passive Mode Requirements states that the test procedure is requiring the testing of TVs in an internet connected standby. It appears that this is referring to the DOE NOPR Section 5.6.2 Standby-Active, High Mode Test which specifies the test to be performed according to the CEA Test Procedure for Download Acquisition Mode Testing. Panasonic brought this issue up during the February 15<sup>th</sup> ENERGY STAR TVs webinar. It was agreed that a subsequent call would be held in order to clear up any confusion regarding how this test is to be accomplished since Internet Connectivity is not necessarily the same as Download Acquisition Mode (DAM).

There is also some uncertainty relating to ENERGY STAR TVs Draft 2 Section 3.7.2 for Hospitality Televisions that feature an always-on DAM. It is not clear if this test is performed with active DAM connections or not.

**ENERGY STAR Should Retain Its Sole Focus on Energy Efficiency:**

By proposing to add new toxicity and recyclability requirements into ENERGY STAR criteria, the program’s connection with consumers may be threatened. Consumers look to ENERGY STAR as a clear, easy to understand guide to the most energy efficient products available. They do not expect nor necessarily demand that ENERGY STAR qualified products be anything more than energy efficient. There also does not appear to be any direct correlation between the proposed toxicity and recyclability requirements, and what is described by EPA as “poor quality or otherwise undesirable products.”

Also, the EPA concedes that international harmonization cannot be achieved with the proposed new non-energy requirements so they are not included for products sold outside of the U.S. Does this mean that European consumers, for example, do not care about the toxicity or recyclability of their ENERGY STAR products or that they are more accepting of “poor quality or otherwise undesirable products?”

If the specific toxicity requirements must remain in the final specification, Panasonic recommends that all 40 exemptions of the RoHS Directive be included, not just a selective few.

The ENERGY STAR brand in large measure has been successful due to its clear, succinct message of promoting energy efficiency. Adding new criteria unrelated to its efficiency messaging will likely confuse consumers and potentially diminish the ENERGY STAR branding efforts. Consequently, Panasonic recommends that ENERGY STAR not add any additional non energy-related requirements on toxicity or recyclability.

**Proposed Effective Date:**

Panasonic recommends an April 2013 effective date for Version 6.0. This date will better align the specification with new product release timing and allow for engineering resources to be efficiently utilized in getting more efficient designs out to the market.

Panasonic has been a longtime proponent of the ENERGY STAR program and believes its partnership with EPA has provided a valuable tool by which consumers can make better informed choices about their purchases of energy efficient products.

As always, Panasonic appreciates the opportunity to comment on the ENERGY STAR Program and welcomes the opportunity to further discuss our views with you.

Sincerely,

Mark J. Sharp  
Group Manager  
Panasonic Corporation of North America

cc: Owen Sanford