



**To:** Verena Radulovic (EPA)  
Bizhan Zhumagali (ICF Int)

**From:** Chris Hankin  
Senior Director  
chankin@itic.org

**Date:** October 14, 2011

**Subject:** Draft 2 Version 6.0 ENERGY STAR® Displays Specification

The Information Technology Industry Council (ITI) welcomes the opportunity to provide detailed comments regarding the agency proposal referenced above. Our comments on non-energy-use requirements follow-on the remarks made by our members in attendance at the EPA September 27th Workshop, as well as the high-level discussions held at EPA on October 4th.

### **A. Non-Energy-Use Requirements**

ITI appreciates and thanks EPA for the three assurances made during the “Non-Energy-Use Requirements” discussion at the September 27<sup>th</sup> Workshop. These assurances stated that the EPA:

- Does not “aim to create product differentiation around non-energy requirements;”
- “commits to referencing existing standards already in the marketplace”; and
- “proposes that existing reporting efforts & maintenance of quality assurance documentation would demonstrate compliance; not reviewed as part of the Energy Star product certification process.”

However, we do not believe that Draft 2 is consistent with these assurances. ITI opposes the proposed excursions into non-energy-use requirements as contained within Draft 2. Our reasons are five-fold:

- 1. Consumer Brand.** For consumers, ENERGY STAR is the most widely recognized and understood endorsement for electronics over any other energy or ecolabel per a recent Harrison Group study. Consumers around the world understand the concepts behind the ENERGY STAR program – products with greater energy efficiency during their use phase earn the trusted ENERGY STAR label. Research shows that other ecolabels, including those with embedded carbon or lifecycle assessment criteria, cause significant consumer confusion and consumer recognition for these programs is less than 20%. Further Harrison Group research indicates that consumers do not understand LCAs, with consumer understanding ranging from only 10-25% for a given LCA carbon input area (manufacturing, transportation, use, packaging, etc). Adding requirements to the ENERGY STAR program beyond product use efficiency risks undermining

- 2. International Harmonization.** Both ITI and EPA have strongly supported efforts to further align energy efficiency regulations for ICT products, to include our joint efforts at the September APEC Conference held in San Francisco. In this regard, ITI believes that it is very important to focus the program's requirements solely on use-phase energy efficiency. The presence of non-energy criteria in the Display requirements documents risks (1) creating an extra step for various regions to remove the criteria, or (2) providing an opportunity for regions to adopt these criteria as mandatory. It also opens up the option for various regions to reinterpret the criteria to their own regional version (e.g. China RoHS instead of EU ROHS). We think these risks greatly outweigh any potential benefits.

Further, ITI sees as very important the July 6<sup>th</sup> comments filed by the European Commission, stating in regards to Draft 1 Line 337 – Toxicity, “We consider that in the context of EU ENERGY STAR, preparatory work should remain focused on energy consumption in the use phase. Other environmental aspects throughout the life-cycle of products are considered in different EU programmes such as the Ecolabel, the Green Public Procurement and Ecodesign ErP.” Such criticism of the proposed inclusion of other environmental aspects into ICT-related Energy Star specifications is consistent with the comments we are hearing from both European and Japanese government officials in our meetings with them.

- 3. Certification.** While we appreciate EPA's clarification that it is not their intent to have third-party certifier review of any of the non-energy criteria, the assurance is at odds with our experiences and conversations with CBs. Our understanding is that CBs will see need to review and certify against all measurable criteria. Indeed, they will see need to do so whether the criteria involved are based in the Eligibility Criteria or in the Partner Commitments. As such, ITI sees two options: either EPA drops the idea of adding such criteria to the Displays specification, or EPA makes explicit that CBs are NOT to include them within the Energy Star certification or verification processes. On the latter option, while EPA can direct CBs not to verify non-energy related criteria, under ISO Guide 65 CBs are not prohibited from adding additional requirements as they deem necessary to support a product's compliance with all technical criteria. In short, ITI suspects that the EPA cannot guarantee that these criteria will not be subject to certification and verification. Therefore, ITI recommends that EPA adopt the first option, with such criteria to serve as supplemental, optional information at most.
- 4. Manufacturer Costs.** As noted under #3, we expect most CBs to insist on reviewing the non-energy criteria, risking significant costs and delays for manufacturers. Further, other regions adopting Energy Star requirements as the basis of their efficiency regulations may take a different approach and require manufacturers to prove compliance with RoHS, recyclability, packaging criteria, and constraints on use of Fluorinated gasses used in panel manufacturing. Audits conducted by EU regulators for RoHS compliance alone have involved engineers traveling to the regulators, preparing full product bill of material reports and test data packages for all homogeneous materials used in the product, demonstrating compliance assurance systems, etc. Potentially expanding this type of compliance burden to other regions that could adopt Energy Star would have a significant impact on manufacturers overhead/headcount and not offer any actual improvement in the environmental characteristics of the product (which is designed

and like requirements).

- 5. Redundancy or Worse.** Non-energy criteria are already being addressed by other programs (e.g. EU RoHS regulation, IEEE 1680.1, Packaging Sustainability criteria). Repeating these criteria within the Energy Star program requirements only adds an unnecessary layer of complexity to the specification with no environmental improvement. And unlike with EPEAT, there is the significant risk of certification costs and delays already cited above. Finally, there is the even more dangerous risk of conflicts with other programs. Such problems may result from simple difficulties with misinterpretation.

As examples of the problems cited above:

**Specification 4.1.1.** EPA has proposed EU RoHS-like material standards for Displays, noting that “products that currently meet the EU RoHS Directive would satisfy this toxicity requirement.” However this statement is not true for several reasons. First, the proposed mercury level is only 10% of the EU RoHS mercury requirement. Second, there are no exemptions listed as there are in EU RoHS. A more accurate statement would be that products that meet EU RoHS will meet this Energy Star requirement if:

- The mercury standard is harmonized with EU RoHS.
- All the appropriate exemptions are added to the Energy Star RoHS requirement. Displays have used the following and possibly other exemptions:
  - a. Lead contained in electronic ceramic parts;
  - b. Lead contained in glass used for electronic components;
  - c. Copper alloy containing up to 4% lead by weight.
- Any future changes to EU RoHS are immediately picked up by Energy Star
- The compliance requirements, which are not clearly outlined, are interpreted to be the same as RoHS. Will it be clear to third party verifiers that they do not have to obtain any documentation; eg, the full supply chain RoHS restricted material declarations?

EPA notes that most displays are already meeting RoHS, undercutting the justification for an additional requirement. EPA has presented no data showing that an Energy Star RoHS requirement would provide any improvement over the current situation. However, as drafted this requirement will cost ITI members additional time and money to demonstrate compliance. This proposal shows how easily a similar requirement can be both misinterpreted and made very different, to the detriment of Energy Star.

**Specification 4.1.2.** Specification, 4.1.2 states, “Display products shall be designed for ease of disassembly and recyclability where external enclosures, sub-enclosures, chassis and electronic subassemblies are easily removable with commonly available tools, by hand, or by a recycler's automated processes. Products shall identify and provide ease of access to, and removal of, materials with special handling needs.” This is a vague requirement without specific technical and safety exceptions. It is not easy to determine whether a Display is in compliance with this requirement. There are also many safety requirements and other issues that prohibit ease of disassembly in certain situations, but are not addressed as exemptions in this simple statement.

EPA notes that this standard is harmonized with IEEE 1680.1. However the ease of disassembly requirements in 1680.1 are only applicable to institutional products and only address external enclosures, which can generally be removed without entering the electronics where unskilled

A more recent IEEE draft 1680.2 Imaging standard has requirement for ease of disassembly **except in situations where it is not technically or legally feasible**. IEEE 1680.1 is also being revised so it is unclear if the same type of requirement will be in the next draft. It is unlikely that any display could meet the ease of disassembly requirement without exemptions for electronics.

In addition to the need for technical and safety exceptions, the criteria proposed by EPA are subjective and there is no indication of how this requirement will be demonstrated, to include how CBs will certify against it. Given the subjective nature of the criteria, assessment of compliance cannot be applied uniformly throughout the Energy Star program, and the criteria should be eliminated from the Display program requirements. This proposal again shows how easily a similar requirement can be both misinterpreted and made very different, to the detriment of Energy Star and with the problems compounded if CBs are to be involved.

**Partner Commitment #11.** Partner Commitment #11 requires meeting two of eight listed packaging requirements listed. The requirements are so vaguely worded that it will not be possible to clearly confirm that they are or they are not being met. While these packaging requirements are good directional goals, they are too vague to serve as a requirement. It is not clear what type of demonstration of compliance will be required nor how the requirement will be reviewed by the CB. Therefore the criteria should also be eliminated from the Display program requirements.

**Partner Commitment #10.** The requirement for products with LCD panels to source LCD components from suppliers who have demonstrated that, for manufacturing processes that emit fluorinated greenhouse gas emissions (F-GHGs), they are recovering or destroying on an annual basis at least 90 percent of the F-GHGs is another requirement that is not energy-related. As EPA states, LCD suppliers are moving to achieve this already, so it is not clear why EPA needs to add this requirement to the Energy Star Partner Commitments, especially as this requirement brings additional compliance and verification issues that should not be part of Energy Star. ITI recommends removing these requirements as well.

## **B. Power Requirements.**

ITI requests that Energy Star for Displays, 6.0 include a separate category for high-performance displays with appropriate power limits.

As presented in the Energy Star webinar for computers on March 10, 2011, key Energy Star principles were described as "Product performance can be maintained or enhanced with increased energy efficiency" and that Energy Star is a purchasing tool for a "broad array of consumers that reflects energy efficiency across a wide range of products with features and performance that consumers demand".

With respect to high performance displays, these are very relevant principles.

In many product categories, Energy Star specifications include high performance products or technologies and meet the intent of these principles. For example, different performance categories exist for computers, imaging equipment, and set-top boxes based on the technology employed. In most cases, the exact performance metric is not defined, instead, specific technology assumptions are used as a proxy for performance (e.g. number of processors/cores, memory size, and graphics frame buffer width, type of imaging equipment or set-top box, etc.). Due to the difficulty in quantifying exact performance

though there is not a specific test or metric that defines the actual performance gains (e.g. operations per second, quality of a print, etc.).

For Energy Star for Displays 6.0, there is a clear need to include high performance displays as a separate category. Increased power is required in these displays to offer significantly better image quality, higher color accuracy and wider viewing angles when compared to standard TN displays. Similar to high performance workstations, high performance displays are a very small portion of the overall market but are critical for professional users in applications such as design, CAD/CAM, photography, and video editing. High performance displays are significantly more expensive than standard displays (2-3X), and consequently, any energy allowance would only affect a small (but important) group of display models.

Regulators in the EU and Australia have recognized that professional users require the qualities and enhanced utility of high-performance displays and have exempted these displays from mandatory power limits in drafts of European ErP Lot 3 and Australia MEPS using the following definition:

*High performance display: A display using in plane switching (IPS) or vertical alignment (VA) technology and offering the following features:*

- *Native pixel resolution greater than or equal to 2.3 (1920 x 1200) MP*
- *AND viewing angle greater than or equal to 178° (at contrast ratio of min. 1:10)*
- *AND colour gamut greater than or equal to 72 % of NTSC*
- *AND a diagonal size greater than or equal to 24”*

As previously discussed, the technical reason that high-performance display technologies require more power is that IPS and VA panels are less transmissive than standard TN panels and require more power for backlighting to achieve the same "front of screen" luminance as a similar sized TN panel when measured perpendicular to the display surface. The reduced transmissiveness at this measurement angle is the result of a lower pixel aperture ratio of the IPS/VA panels when compared to standard TN panels.

IPS and VA panels project the backlight through the panel in a wider cone, allowing color accuracy to be maintained at wider viewing angles. The wider dispersion of light requires a corresponding increase in backlighting to achieve the equivalent luminance of a TN panel.

It is essential that Energy Star for Displays 6.0 include high performance displays as a separate category to ensure the availability of efficient products with the features and performance required to satisfy an important class of professional users. ITI welcomes the opportunity to work with EPA on establishing this new category.

### **C. Effective Date.**

Should the release of a Final Version 6.0 specification occur later than is anticipated in Draft 2, ITI expects and recommends that the effective date also will be delayed accordingly.