

Display Spec 6.0 Specification Draft 3 Comments		
Section Reference No.	Extract of Requirement	HP / Industry Comments
3.9 Toxicity and Recyclability Requirements	Non-Energy attributes included in Display spec. ver. 6.0 draft three involve EU RoHS like substance restrictions and product design for disassembly and recyclability criteria already specified in the IEEE 1680.1 EPEAT standard.	As ITI has already communicated on behalf of industry, industry (including HP) oppose inclusion of non-energy criteria that are not relevant to the product "use phase" or "directly customer relevant". HP is aligned with the position and letters ITI have submitted to EPA on this subject in response to the EPA's draft Guiding Principals document. Refer to the ITI position (attached) for detailed explanation of the ICT industry's position.
3.3 On Mode Requirements, 3.3 On Mode Requirements, Table 1:	Draft 3 On Mode specifications beginning on line 195 through line 336.	HP appreciates EPA revising the Display On Mode specifications that were proposed in the third draft specification. However, with the most recent proposal for On Mode limits, the limits are still too restrictive for our performance monitors (with IPS panels). The On mode limits proposed for performance displays in the 20", 21.5", and 27" sizes are still too restrictive. We are proposing alternative limits (shown in the tab titled "HP On Mode Proposal").
3.3 On Mode Requirements, 3.3 On Mode Requirements, Table 1:	Draft 3 On Mode specifications beginning on line 195 through line 336.	Also related to On Mode limits for 23" Displays specifically, we request that EPA relax (open up) the limits to 26 Watts.
3.3 On Mode Requirements, Table 1: Calculation of Maximum On Mode Power Requirements	In the Table 1 Field "Product Type and Diagonal Screen Size, d (inches)" listing for Display Sizes, "30.0 ≤ d ≤ 61.0" (for products meeting the definition of a signage display only)	Regarding Table #1 that limits the scope of Displays that can qualify for the On Mode limits in the 30.0 ≤ d ≤ 61.0 size range to only products classified as "Digital Signage". We request that EPA delete reference to "Digital Signage" as there are other types of displays in this size range (such as those used with Workstations) that will need to use the P On Max limits: $(0.27 \times A) + 8.0$.

(PON MAX) (Line 202)		
Section 1 Definitions, A Product Types, Par. 1) Electronic Display (Display), item A.1 Enhanced- Performance Display	<p>(1) Enhanced-Performance Display: A Computer Monitor that has all of the following 14 features and functionalities: 15</p> <p>(a) A contrast ratio of at least 60:1 at horizontal viewing angles of at least 85°, 16</p> <p>(b) A native resolution greater than or equal to 2.3 megapixels (MP), and 17</p> <p>(c) A color gamut of at least sRGB (IEC 61699 2-1).</p>	<p>Regarding the requirements involving displays must be classified as "Enhanced-Performance Display". We request that EPA consider requiring only one of the three criteria be met in order for a Display to be classified as a "Enhanced-Performance Display" category.</p>

EPA Question	<p>EPA is considering requiring Displays to automatically go to a low power mode when a user disconnects the display (such as when they remove their Notebook PC from the docking station when they go home at night). According to Tom Bolioli (Consultant to EPA), a number of Displays still consume substantial power when the PC is disconnected – even when the screen goes to a dark mode. Tom B. also commented that he thinks that some HP and Dell models are able to sense when the PC has been disconnected, although he had not measured power consumption when in the disconnected condition. I told the folks on the call, that PC displays are capable of being power managed by the PC, and do not by themselves have circuitry that automatically places the display into a low power or off mode after being disconnected or a period of user inactivity. And Apple and Dell agreed with my input to EPA. Given that EPA is considering adding a requirement of this type, can you please answer the following questions (that I will include in our written input to EPA):</p> <p>A. Will currently designed displays be able to sense when the PC is disconnected and enter into a low power mode or off mode when the PC is disconnected?</p> <p>B. Or will they still consume substantially more power than the display would (say exceeding Off Mode and Sleep Mode power consumption)?</p> <p>C. How much power do our displays consume when the PC is disconnected?</p> <p>D. Finally, do we have a “mixed bag” where some of our models sense when the PC is disconnected and enter into a low power mode or off mode when the PC is disconnected, while others do not? Approximate percentage (if we have this situation)?</p> <p>3. Re ABC, please provide feedback to EPA on the second slide deck Slide #23 “Proposed ABC Approach”</p>	<p>HP does not oppose addition of a requirement of this type, assuming it is done appropriately (we want to review any specs. developed for a requirement of this type). All of our display products enter the “sleep” mode whenever the display is disconnected from the source (drop either H or V sync). Your statement is correct ... the monitors enter the low power state after being disconnected from the PC. <u>Additional input for EPA):</u></p> <p>1. Question: Will currently designed displays be able to sense when the PC is disconnected and enter into a low power mode or off mode when the PC is disconnected? Answer: Yes, HP displays enter the “sleep” mode (drop V or H sync)</p> <p>2. Question: Or will they still consume substantially more power than the display would (say exceeding Off Mode and Sleep Mode power consumption)? Answer: Same power consumption as “sleep”</p> <p>3. Question: How much power do our displays consume when the PC is disconnected? Answer: RK>> reference the “sleep” in the table below (Ranges from 0.5 Watt to 2.20 Watts - refer to LGD input attached)</p> <p>4. Question: Finally, do we have a “mixed bag” where some of our models sense when the PC is disconnected and enter into a low power mode or off mode when the PC is disconnected, while others do not? Approximate percentage (if we have this situation)? Answer: The LP2480zx is the only monitor that does not include a scalar. All other displays include scalar.</p>

Comments on Test Method (Rev. Feb-2012)		
H Test Materials, par. 2. (beginning on line 221)	2) "Video Electronics Standard Association (VESA) Flat Panel Display Measurements (FPDM) Standard version 2.0 test patterns" shall be used only for products that cannot be tested using the dynamic broadcast-content video signal.	We believe that it is not possible to check the power consumption at each resolution. Recommend that the requirement simply indicate testing with the VESA Flat Panel Display Measurements (FPDM) Standard version 2.0 test patterns.
		We noticed that the test method will require use of the IEC62087 test pattern that is more stringent than the test in the current Ver. 5.1 spec. Use of the new test pattern (that involves more black level being displayed), will result in higher power consumption of the Display - in the range of 1.0 to 2.0 Watts. Has EPA factored this increase resulting from the change in test method, into the data analysis / and spec. limits being proposed for the ver. 6.0 limits?



To: Ann Bailey, Director
ENERGY STAR Product Labeling

From: Chris Hankin, chankin@itic.org
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Date: February 22, 2012

Subject: ENERGY STAR® Strategic Vision and Guiding Principles

The Information Technology Industry Council (ITI) welcomes the effort to update the ENERGY STAR® Program's Vision and Guiding Principles (VGPs). The ENERGY STAR products program has indeed experienced significant changes in the last nine years that merit an update.

Our industry and our products have also changed significantly since 2003, including substantial gains in energy efficiency and productivity. We are just at the cusp of the digital revolution, and we expect continued gains for information and communications technologies (ICT) in these areas – especially as regards their enabling contributions to sustainable growth across the economy. The following comments are intended to take into account not only the large innovations that have already occurred, but also those that we anticipate in the near future.

A. Strategic Vision and Program Design

ITI understands that these two sections are intended to update and expand upon the Introduction and Objectives section from the 2003 VGPs. We appreciate and support the document's continued focus on energy efficiency. We, too, believe that energy efficiency must remain the environmental benefit that forms the basis for determining the select group of products that earn the ENERGY STAR.

However, we believe that three important points have been left unstated in these sections, and that these omissions could send an unfortunate and unintended message. We are fully confident that EPA shares our view on these points, and thus view our recommendation as suggesting you make explicit that which EPA already believes.

The first omission is a key point made in your cover letter but never mentioned in the vision statement itself – the dependence of the program on transparency and a collaborative relationship with industry and other stakeholders. In her November 1st letter to Senators Bingaman and Murkowski, Assistant Administrator McCarthy assured the Senators that EPA both (1) recognizes the tremendous stake that program partners have in how the program is operated, and (2) has decided that collaboration and transparency are a current priority for the ENERGY STAR program. This idea of renewed partnership

with industry is too important a point, and too important a sensitivity with ITI's member companies, for it not to be clearly stated in the new strategic vision.

Second, we believe that the program design section needs to include an explicit commitment to international leadership and convergence, including global efforts to harmonize efficiency test procedures and standards. ITI and its member companies have strongly supported the international leadership that has been achieved via the ENERGY STAR Program in the past. Indeed, we have tried to promote and build upon it and thereby create even greater momentum toward international convergence, e.g., through such efforts as our APEC Workshop last fall on "Aligning Energy Efficiency Regulations for ICT Products." At the same time, we are aware that the third party certification issue caused certain tensions with international partners. In addition, we believe that the inclusion of certain Non-Energy Attributes (NEAs) in ENERGY STAR product specifications could further undermine ENERGY STAR's influence and impact in the global marketplace. Based on recent conversations at high levels within the EPA, we know the agency is committed to international leadership and convergence, and we strongly urge that this point be made explicit in the document.

Third, transformative innovations enabled by ICT will be essential to achieving the clean energy and sustainability targets to which the US and other global governments aspire. The US Government just hosted Rio+2.0 in Palo Alto with global policymakers and innovation leaders with the aim of highlighting this very subject. EPA Administrator Jackson's opening keynote at Rio+2.0 was eloquent on this point, stressing that we have just begun to tap the potential of ICT to contribute to future sustainability, and that we must challenge ourselves to work together to do more. We believe that the Vision and Program Design section needs to add a provision which emphasizes the importance of ICT-enabled, sensor-managed performance, monitoring, and reporting of those products which are amenable to these technologies, and the importance of collaboration with the industry partners and other stakeholders to develop product requirements which reward innovation in ICT products and the use of ICT technologies to improve the performance of non-ICT products.

B. Guiding Principles for Establishing New or Revised ENERGY STAR Specifications.

Principle 2. There is one area upon which ITI must comment at length: the issue of Non-Energy Attributes (NEAs) within Principle #2. While ITI and its member companies recognize the need to include certain criteria in specifications related to the functional performance of products, we believe this should be limited to those criteria that directly impact the function and use of the product by consumers (e.g., screen size, brightness, and screen resolution for monitors, speed and delivered output for computers and printers). We strongly oppose the inclusion of those attributes mentioned under Principle #2 that do not affect the functional performance of the product as viewed by the consumer (e.g., warranty, toxics limits, design for recyclability, data reporting). We believe the addition of these types of NEAs risks: diluting the focus and brand of the program; eroding the international convergence of energy efficiency criteria; complicating certification and verification; increasing manufacturer costs without generating benefits; and, creating redundancy or conflicts with other programs or regulations.

The EPA justification provided for NEAs is "to avoid associating the label with poor quality or otherwise undesirable product models, thereby preserving the influence of the label in the market." This sole justification has also been employed in the just-issued Imaging Equipment Draft 1 Version 2.0 specification, Displays Draft 3 Version 6.0 specification, and Computers Draft 1 Version 6.0, wherein

EPA states that toxicity and recyclability criteria have been inserted to “avoid associating the ENERGY STAR label with poor quality or otherwise undesirable products.”

We are unaware of any evidence that such a problem exists for ICT products -- that EPA has found Energy Star certified displays, printers, or computers that were exhibiting undesirable toxicity or recyclability characteristics. EPA has cited none.

Further, the toxicity and recyclability criteria EPA has proposed for inclusion in the three draft specifications do not correlate with any product quality or performance attributes or characteristics that would be affected by the energy efficiency or GHG emissions of the products. As noted, ITI does not oppose inclusion of NEAs that have a direct customer relevant environmental or functional performance impact. For ICT products, the EPA has already included appropriate requirements that have a direct relationship to the quality/functional performance of ICT products; e.g., educating users about the importance and use of power management features in IT products; mandatory power management requirements (including the ability for users to modify power management settings); network wake response requirements; testing with default (as-shipped) settings; and, standardized test conditions.

We note also that ICT product manufacturers compete vigorously and continuously improve product performance, quality and value of their products. Any problems with poor quality or otherwise undesirable product models would be self correcting in the fast paced and highly competitive ICT product market.

In sum, we currently are aware of no justification for imposing these particular NEAs within our product specifications that would offset the following continuing risks:

- 1. International Convergence.** Both ITI and EPA have strongly supported efforts to further align energy efficiency regulations for ICT products, as evidenced by our joint efforts at the September APEC Conference held in San Francisco. The presence of these particular NEAs in ENERGY STAR risks: (1) creating further momentum towards divergent national Energy Stars; (2) providing an opportunity for other governments to adopt these criteria as mandatory; (3) opening up the option for various regions to reinterpret the criteria to their own regional version (e.g. China RoHS instead of EU RoHS); and, (4) supplying a precedent for other governments to cite when adding new, extraneous and/or protectionist criteria of their own into their energy efficiency regulations. We think these risks greatly outweigh any potential benefits.

In this regard, ITI notes again the comments filed by the European Commission, stating in regards to three earlier draft specifications, “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 these NEAs into ICT- related ENERGY STAR specifications is consistent with the comments we are hearing from foreign government officials in our meetings with them.

In the Displays Draft 3 Version 6.0 specification, the Imaging Equipment Draft 1 Version 2.0 specification, and Computers Draft 1 Version 6.0 specification, EPA states that it has “added language making clear that the non-energy requirements proposed here are not intended for international adoption.” This is of no comfort to ITI and its member companies, as it not

responsive to our criticism and concerns. What we seek is continued US EPA leadership on international convergence on energy efficiency regulation. What we fear is international customers no longer satisfied with US ENERGY STAR compliance, and also further momentum towards governments elsewhere carving out new national exceptions and unique requirements. Other governments globally are already dangerously inclined in this direction – having the US EPA supply a prime exemplar is not helpful.

Certification. While we appreciate EPA’s statement in the Displays Draft 3 Version 6.0 specification and the Imaging Equipment Draft 1 Version 2.0 specification that “for purposes of third-party certification, toxicity and recyclability requirements shall not be reviewed when products are initially qualified or during subsequent verification testing,” we are not convinced that this will prevent CBs from requiring validation of these commitments. As the CBs are independently audited to ISO Guide 65, their accreditors may expect them to demonstrate due diligence in auditing all elements of a specification, including those areas that are not expressly required to be certified, and some of our member companies have already been informed that this may occur with these NEAs. Also, at least one international partner has made comments indicating that they will require compliance with all requirements in the ENERGY STAR program specifications (including the NEAs proposed in the three draft specs). It remains unclear as to how this and other international partners would require manufacturers to demonstrate compliance; i.e., manufacturer self-certification, third party testing, certification and verification, etc.

In short, ITI suspects that the EPA cannot guarantee that these criteria will not be subject to third party testing, certification and verification.

2. **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 cause significant consumer confusion and consumer recognition for these programs is less than 20%. Adding these NEAs to the ENERGY STAR program risks undermining the program’s greatest strength: its clear and positive brand. It also risks having enterprise customers no longer satisfied with US Energy Star certification of a product. They may in the future also need assurances as to compliance with specific national programs as well, diluting the impact of EPA’s ENERGY STAR program.
3. **Manufacturer Costs.** As noted under #2, we expect CBs may 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. 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 from the start to be a global product already meeting EU RoHS, and like requirements).

4. **Redundancy or Worse.** These NEAs are already being addressed by other programs (e.g. EU RoHS regulation, IEEE 1680.1, Packaging Sustainability criteria). Replicating such criteria within the ENERGY STAR program requirements adds a layer of complexity to the specification with no environmental improvement. And unlike with EPEAT, there is the significant risk of 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, a problem that we have already been encountering as the Energy Star office tries to cope with these detailed, complex and technically specific programs. It also raises an issue on process. If the EU makes an alteration to EU RoHS, how does US ENERGY STAR then adapt this change? And how does EPA ensure that its partners have a collaborative and transparent opportunity for comment on what amounts to a change to the ENERGY STAR specifications?

Principle 4. With Energy Star now written into the FAR, ITI recommends that Principle 4 better capture the technology neutrality of the FAR, and in particular the requirement that at least 3 manufacturers/vendors can fill the requirements.

C. Guiding Principles for When to Revise ENERGY STAR Specifications.

ITI appreciates and supports the addition of this section. However, we also recommend that it be amended to explicitly recognize the idea of ending a specification. For some product categories, we are reaching the stage where the program has achieved all the significant consumer benefits that can be achieved via a particular specification. In these situations, finite resources should be directed to other specifications or initiatives as opposed to trying to maintain criteria for products where there are few benefits to be realized.

We also recommend that the document acknowledge that in some cases specifications are not the most appropriate tool, and that other education and/or incentive initiatives may be more beneficial to consumers. In this regard, we think particularly of both data centers and computer storage.

Finally, we recommend that the section on “Technological Advancements” include a new paragraph explicitly recognizing the ICT-enabled energy reduction and efficiency innovation that is occurring and to which ENERGY STAR may need to adjust. This will require significant thought on whether and how ENERGY STAR can adjust to the large technological transformations that are coming, including cloud computing, virtualization, big data, and the wireless revolution. As Mark Mills and Julio Ottino wrote in a recent Wall Street Journal opinion piece, “Information technology has entered a big-data era. Processing power and data storage are virtually free... The Internet is evolving into the ‘cloud’ – a network of thousands of data centers any one of which makes a 1990 supercomputer look antediluvian. From social media to medical revolutions anchored in metadata analyses, wherein astronomical feats of data crunching enable heretofore unimaginable services and businesses, we are on the cusp of unimaginable new markets.”

This transformation is occurring in conjunction with the wireless revolution. There is an unfolding revolution wherein most humans, and untold devices, will communicate wirelessly. Billions of people, and many billions of devices, will communicate, socialize, trade, and perform services in real time. The positive implications for sustainability and growth are massive and central to achieving the sustainability

and growth aspirations of the Obama Administration.

Yet they also mean that computing and communications will be handled via a web of devices and systems, a world that is far more energy efficient but also far more complex to measure and regulate due to the need to understand how individual devices interact with each other. The functionality that may not be considered efficient in a product-to-product comparison may be more efficient in a systems level evaluation; or said differently, devices will need to work within the system and the optimum system efficiency may not be directly correlated with individual device efficiency. This new world of ICT-enabled intelligent efficiency will require newly shared thought between EPA, our industry, and other stakeholders, and it may require an altered ENERGY STAR. For instance, the EPA resources devoted to implementation of EISA Section 453 on data centers may require significant enhancement. Is this an area in which the ENERGY STAR program could take a more active role in the future, working creatively with our industry and others? We would welcome this development.