

**ENERGY STAR Televisions Update Document Comment Summary  
April 2, 2007**

This document is intended to summarize comments and feedback submitted by stakeholders in response to the ENERGY STAR TV Update document, and also includes an EPA response to each comment. This summary includes comments that (1) are not specific to a single manufacturer's product-designs and (2) EPA received permission to make public. As noted, several of the comments received will be better addressed when EPA is able to analyze testing data submitted by stakeholders. Many of the comments are expected to be the basis for discussion with stakeholders during specification development.

Topic	Comment	EPA Response
<b>Normalizing Power Consumption</b>	<p>A stakeholder is concerned that normalizing for screen size will confuse consumers as two TVs with different screen dimensions might consume very different absolute amounts of energy. The stakeholder suggests: 1) that EPA continue its involvement in the FTC EnergyGuide label revision process with the goal of including TVs, and 2) that EPA include absolute energy consumption on the ENERGY STAR label itself. Also, the stakeholder asked if EPA is planning on considering normalizing for resolution.</p>	<p>EPA realizes that there is a growing desire to empower consumers to make more informed purchasing decisions by providing information on the energy consumption of their TVs. EPA remains committed to the ENERGY STAR mark serving as an endorsement label, designed to be an easy way for consumers to recognize those products that are in approximately the top 25% of their category in terms of energy-efficiency. EPA does make energy consumption information for qualified models available on the ENERGY STAR Web site for interested parties. However, EPA is now exploring ways of making a greater level of information readily available to consumers.</p>
	<p>EPA should consider these factors which affect power consumption: audio systems, audio output power, digital &amp; analog tuners, panel luminance and AC/DC outputs for peripherals. Multiple power curves should be developed for On mode, depending on screen sizes, so that larger displays are not discriminated against. Additionally, a stakeholder would like to see the spec normalized for screen size, native resolution and other common resolutions (e.g., 1366 X 768); and also consider whether the unit is Digital Cable Ready, comes with home networking support, and has media card reading capability. It should be noted that as screen size gets smaller, there is an inverse relationship between power consumed by electronic components (goes up) and power consumed by display (goes down).</p>	<p>Based on information submitted by stakeholders during the initial testing phase, EPA will, with stakeholder engagement, move forward with determining the metrics for normalizing power consumption in the Draft 1 specification.</p>
<b>Low Power Modes: Which LP modes exist now/are anticipated?</b>	<p>A stakeholder supports the 1W standard but would like products to be tested in the most energy-consumptive low power mode to ensure products qualify regardless of the set-up mode users select. Two additional questions should be added to the Update document: How long do products spend in the various LP modes? Will a TV automatically switch to a certain LP mode after a prescribed amount of time?</p>	<p>Under the current Version 2.2 TV/VCR specification, manufacturers are required to test their TVs in the most energy-consumptive low power mode to ensure it meets the 1-watt or less requirement to qualify for ENERGY STAR. EPA will strive to gather insight on such issues when soliciting data during the development of the specification. Additionally, EPA expects to discuss such topics during the first TV stakeholder meeting to discuss the Draft 1 specification - currently tentatively scheduled for June 2007.</p>
	<p>A stakeholder advocates a "hard off" requirement separate from LP mode.</p>	<p>A hard off is supported by international government partners. EPA seeks input on the technological feasibility of such an option.</p>

<b>Low Power Modes: Power consumption differences?</b>	<p>It is important to determine which mode the TV-set is tested in, though that may be difficult considering that many brands' modes are brand-dependent.</p>	<p>EPA will consider how to collect and track this information under the new Version 3.0 specification.</p>																								
	<p>A stakeholder states that power consumption depends on whether extra features are active. Standby power use with no features active is &lt;1W. But active CableCARD support or Digital Cable Ready capability adds at least 12W to Standby.</p>	<p>EPA will, with stakeholder engagement, consider additional functionalities during the course of developing the Version 3.0 Specification. EPA will look to stakeholders for data to inform the conversation about the possible impact of enhanced functionality on power use of final products.</p>																								
<b>Low Power Modes: Added functionality from multiple LP modes?</b>	<p>A stakeholder provided the below table:</p> <table border="1"> <thead> <tr> <th>Standby Mode Feature</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>Program guide data download</td> <td>Program guide information available when TV is powered on. Note that this is considered normal system operation for ATSC DTV.</td> </tr> <tr> <td>CableCARD</td> <td>Allows TV use on cable without set top box.</td> </tr> <tr> <td>Quick power on</td> <td>Time shift recording, system control and peripheral support.</td> </tr> <tr> <td>Network connectivity (IEEE 1394, Ethernet, etc.)</td> <td>Awaken for service request, time shift recording.</td> </tr> <tr> <td>Device firmware update or pass-through of system renewability messages (SRMs)</td> <td>Update to TV's firmware or pass through of SRMs to downstream peripherals.</td> </tr> <tr> <td>Peripheral powering (e.g., USB clients)</td> <td>Peripheral support.</td> </tr> <tr> <td>Interactive Digital Cable Ready (OCAP, DSG, etc.)</td> <td>Allows TV use for interactive cable services without set top box.</td> </tr> <tr> <th>Active Mode Feature</th> <th>Function</th> </tr> <tr> <td>Automatic backlight control</td> <td>Reduces backlight level when ambient light level is low.</td> </tr> <tr> <td>Dynamic backlight dimming</td> <td>Reduces backlight level when picture content is dark.</td> </tr> <tr> <td>Ambient light sensing with brightness control</td> <td>Reduces picture brightness (cd/m<sup>2</sup>) when ambient light level is low.</td> </tr> </tbody> </table>		Standby Mode Feature	Function	Program guide data download	Program guide information available when TV is powered on. Note that this is considered normal system operation for ATSC DTV.	CableCARD	Allows TV use on cable without set top box.	Quick power on	Time shift recording, system control and peripheral support.	Network connectivity (IEEE 1394, Ethernet, etc.)	Awaken for service request, time shift recording.	Device firmware update or pass-through of system renewability messages (SRMs)	Update to TV's firmware or pass through of SRMs to downstream peripherals.	Peripheral powering (e.g., USB clients)	Peripheral support.	Interactive Digital Cable Ready (OCAP, DSG, etc.)	Allows TV use for interactive cable services without set top box.	Active Mode Feature	Function	Automatic backlight control	Reduces backlight level when ambient light level is low.	Dynamic backlight dimming	Reduces backlight level when picture content is dark.	Ambient light sensing with brightness control	Reduces picture brightness (cd/m <sup>2</sup> ) when ambient light level is low.
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<p><b>Low Power Modes: Auto cycling for LP modes?</b></p>	<p>Most modes are manually selected, but there is no umbrella answer.</p>	<p>EPA understands that this will vary based on individual product-designs from manufacturers. EPA seeks manufacturer data that enables EPA to understand the range of options.</p>																								
<p><b>Low Power Modes: What is the most common LP mode for shipping?</b></p>	<p>TVs generally ship in active state to produce a bright picture. But several manufacturers report shipping TVs in the lowest power standby mode.</p>	<p>EPA understands that this will vary based on manufacturer, but encourages all manufacturers to ship their TVs in the lowest power-consuming standby mode to ensure maximum savings for consumers.</p>																								
	<p>In addition to low power mode, power saving controls are available in "active" or "on" states, including auto backlight control, dynamic backlight dimming and ambient light sensing with brightness control.</p>	<p>EPA understands that different TV technologies have various ways of adjusting active mode power consumption dependent on light levels, and appreciates that these advancements may lead to significant energy savings.</p>																								

<b>Peripheral Devices: Which ones should be considered?</b>	The following peripheral devices should be considered: electronic program guides, VCRs, DVD players and recorders, hard disk drive DVRs, set top boxes, AV receivers, camcorders, media servers, personal computers, CableCARDS and memory cards. The main consideration in defining a peripheral should be whether the device draws power from the TV. EPA should also consider the implications of increased networking of home computers to TVs.	EPA will carefully consider the peripheral devices to be included under the ENERGY STAR Version 3.0 TV specification or separate ENERGY STAR specifications, as appropriate. EPA seeks data specific to the stated devices and well as market information regarding their current and near-term prevalence.
<b>Peripheral Devices: Duty-cycles and power consumption?</b>	A stakeholder believes that EPA should base "on" mode efficiency levels on the most common consumer purchases, rather than the "most feature-rich" models, which may not qualify as such.	EPA requests testing data on manufacturers' latest models because these tend to be the most similar to new models that will likely be launched under the revised specification. However, EPA will request that a range of TVs be tested, which include feature-rich models as well as more basic models, so a robust data-set can be used to develop the Draft 1 Version 3.0 specification.
<b>Peripheral Devices: Impact on TV's power consumption?</b>	A stakeholder explains that video sources, such as DVD players and set top boxes, do not affect power consumption. CableCARD feature support does, however, draw power from the TV.	EPA will look to both data and discussion with stakeholders to learn more about the power implications of CableCARDS.
<b>Peripheral Devices: What information can be shared on duty-cycles and power consumption?</b>	EPG is the only function for which manufacturers have available data to be shared.	EPA anticipates that the newly developed IEC test procedure should allow additional information to be gathered on the power consumption impacts of additional functions and features, which will help to inform the Draft 1 Version 3.0 specification.
<b>Peripheral Devices: Enhanced functionalities' impact on TV's power consumption?</b>	The addition of capabilities requiring active electronics adds 15+ watts.	Additional information, particularly data, related to active electronics would be useful to aid in developing the Draft 1 Version 3.0 specification.
<b>Duty-Cycle: Sources for duty-cycle information?</b>	Pacific Gas & Electric's December 2006 Study, <i>Consumer Electronics: Market Trends, Energy Consumption, and Program Recommendations</i> <a href="http://www.etcc-ca.com/database/download/ETCC_Report_370.pdf">http://www.etcc-ca.com/database/download/ETCC_Report_370.pdf</a>  The Consumer Electronics Association's Jan 2007 Study, <i>Energy Consumption by Consumer Electronics in U.S. Residences.</i>  The Canadian Bureau of Broadcast Measurements (BBM)  Program guide data providers, cable and satellite TV operators and set top box manufacturers.	These sources, and others, will be reviewed and considered when developing duty-cycles for the new Version 3.0 specification.
<b>Labeling: Electronic labeling as an alternative to physical labeling?</b>	A stakeholder supports electronic and static cling labeling, as well as displaying the ENERGY STAR logo at a TV's start-up.	EPA will work with all stakeholders to develop labeling options under the new specification that meet the needs of both ENERGY STAR partners and the ENERGY STAR program in informing consumers of a product's qualification status.

<b>Labeling:</b> <i>for other labeling alternatives?</i>	<b>Suggestions</b> A stakeholder notes that separate tags, cards and cling labels amount to more waste for companies trying to be more environmentally sensitive. It is preferable to simply label boxes and product manuals.	EPA understands environmental concerns regarding additional labels and printed material in product packaging and intends to work closely with stakeholders to develop alternatives to physical labeling of the product.
	Requiring the product to be labeled with the ENERGY STAR mark in 4 locations increases the manufacturing cost, and would like manufacturers to have flexibility in choosing among the 4 locations for labeling purposes.	The 4 locations were selected to ensure that consumers would easily be able to identify qualified models when making purchasing decisions, be it in-store or on a Web site.
<b>TV Definition</b>	The ENERGY STAR specification for large IT monitors should be merged with that for TVs, as there is overlap between the product categories, especially as monitors grow larger. The term "TV" should also be better defined. If two display standards are developed (as planned), then the stakeholder suggests collecting the following information to distinguish between the two: Does the product have a digital tuner? Is the product 24" wide or above in size? Does the product support Full HDTV resolution of 1920 x 1080? Does the product support High Definition Content Protection?	Based on information submitted by stakeholders during the initial testing phase, EPA will move forward, with stakeholder engagement, with determining the most appropriate way to clearly differentiate between those products that should qualify under the ENERGY STAR TV specification and those products that should qualify under the ENERGY STAR monitor specification.