

Draft 1 Version 3.0 ENERGY STAR® TV Products Specification Comment Summary
September 24, 2007

This document is intended to summarize comments submitted by stakeholders in response to the Draft 1 Version 3.0 ENERGY STAR TV products specification, and also includes an EPA response to each comment. Please note: this summary includes only those comments that EPA received permission to make public.

Topic	Comment	EPA Response
On Mode	A stakeholder requested that TVs be tested in Standard Mode rather than "default setting" because current "default settings" are for retail display, and brighter than what is appropriate for standard home use. The stakeholder recommended a JEITA-type method of power measurement, whereby TVs are tested in Standard Mode, rather than as shipped. Consumers can then choose Standard Mode after purchase.	EPA intends manufacturers to test and qualify their TV models using the settings that are most indicative of home use. Representatives of the UK Market Transformation Programme have stated numerous times to both EPA and its stakeholders that, based on information provided by repair centers, users very rarely modify the default settings of their television set and, therefore, the factory settings are most likely to be used in the home. Similar information has been stated to EPA by various manufacturers in the U.S. EPA encourages manufacturers to use more energy-efficient TV picture pre-sets when shipping their TVs to reach compliance with the proposed specification. Note that in cases where a TV prompts the user for a screen pre-set upon activation of the product, the proposed Draft 2 specification follows Section 11.3.6 of the current Draft of IEC 62087, instructing the tester to choose the "Standard" setting.
	A stakeholder supported policy that power measurements should be made in "default setting" to encourage shipping of products in the most energy-efficient settings.	EPA appreciates stakeholder support for this criteria.
	A stakeholder requested that IEC 62087 Sec 11.3.6 be included in the specification so as to allow TVs to qualify that force a setting to be selected when the TV is first turned on, and the setting selected can be "Standard" as opposed to more retail-specific settings.	EPA agrees with this comment. This was EPA's intent with the Draft 1 specification. However, EPA realizes it may not have been clear since Section 11.3.6 was not specifically cited. EPA has rectified this in the Draft 2 specification and noted that if picture level adjustments need to be made prior to testing, Section 11.3.6 in IEC 62087 should be followed when doing so.
	A stakeholder suggested that the specification allow TVs to be shipped in a bright mode and buyers given direction on how to select the ENERGY STAR compliant mode from the default mode on initial use.	As noted above, EPA believes that few consumers change their TV's default picture settings, based on information provided by repair centers in the UK and by ENERGY STAR stakeholders in the U.S. Therefore, to ensure that consumer expectations regarding ENERGY STAR qualification are met, EPA is requiring that TVs ship with default settings that meet ENERGY STAR requirements.
	Several stakeholders did not support the use of Internet content to determine On Mode power consumption, citing the current use of TVs to view Internet content as very limited and when it did occur, typically to be streaming video, which has a more similar APL to the "broadcast" TV test clip.	EPA agrees with this comment. As such, the Draft 2 specification does not require testing using the Internet content. Average on mode power consumption measurements are based on IEC 62087's "broadcast" TV test clip.
	A stakeholder suggested that models with inferior features within a technology class should not be included in the dataset.	EPA has separated its analysis into resolution bins to take into account one of the highest profile technical features in TVs today: native resolution capability. However, EPA has not specifically excluded any model or technology from being included in its dataset unless it specifically does not meet the definition of a television as defined in the specification, since the ENERGY STAR specification is technology neutral.

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	A stakeholder noted that televisions in the 40-57 inch range are particularly disadvantaged by the active power limit line and suggested there be a special equation for this range.	The current Draft of the specification shows qualifying models up through the 60" diagonal range across several manufacturers and screen technologies. EPA therefore finds no compelling reason to deviate from the straight line specification approach at higher size ranges, except for those TVs with a native resolution of 1080, where this provision has been made.
	A stakeholder suggested setting a maximum energy use ceiling.	Consistent with program principles that have helped to make ENERGY STAR successful, EPA is committed to establishing specifications that do not sacrifice performance or functionality. While EPA is continually striving to lower energy use, setting a maximum energy ceiling would risk undermining this objective by potentially forcing a sacrifice in consumer value.
Off Mode	A stakeholder commented that there was no benefit to including Off Mode requirements, since Standby is less than a watt already and network conditions require that products not be truly Off.	Based on stakeholder feedback, EPA has decided not to include Off Mode requirements in the Draft 2 specification.
	A stakeholder recommended that the Off Mode requirement be removed from the specification as there is no proof of significant energy savings given the cost of the hard-off switch, and potential consumer frustration when they use the switch.	Based on stakeholder feedback, EPA has decided not to include Off Mode requirements in the Draft 2 specification.
DAM Mode	Stakeholders suggested that the power consumption requirements are too restrictive, particularly considering DAM is used for more than just downloading EPG, and also includes software downloads and emergency message/communications monitoring.	EPA has modified the definition of DAM to include "monitoring for emergency messaging/communications." EPA will address whether the requirement is too restrictive after receiving and reviewing the Consumer Electronics Association's (CEA's) proposal on DAM. However, the maximum power consumption allowed in DAM has been raised substantially in this Draft 2 specification, based on stakeholder feedback.
	Stakeholders asked that EPA specify the amount of time allowed in DAM over a 24-hour period vs. 8-hour period to allow for greater flexibility. Since household TV viewing patterns vary, the goal should be to allow flexibility so TV can activate DAM when unit is not turned On.	Based on stakeholder feedback, the amount of time allowed in DAM has been modified to 3 hours over a 24-hour period.
	A stakeholder requested that time allowed in DAM be raised to 8 hours in a 24-hour period to accommodate increased functionality and information content availability that drives new consumer demand for enhanced EPG data, such as images and video.	Based on stakeholder feedback, the amount of time allowed in DAM has been modified to 3 hours over a 24-hour period. EPA will address whether the requirement is too restrictive after receiving and reviewing CEA's proposal on DAM.
	Stakeholders suggested that a wattage requirement of at least 20-30 watts is required during DAM, to support certain functionality.	EPA has modified the wattage requirements to 12 watts during DAM. This may be modified further upon review of CEA's proposal on DAM.
	A stakeholder noted that some technologies may need only 0.1 hrs to complete the DAM function, but would consume 12W during that time. The unit would thus fail the 4W limit, even though it would only use 1.2W/hrs per day.	EPA has modified the wattage requirements to 12 watts during DAM. This may be modified further upon review of CEA's proposal on DAM.
	A stakeholder requested that the DAM requirement be removed from the specification, citing it as unrealistic.	EPA originally included a DAM mode under the Draft 1 specification to address stakeholder requests to allow TVs with EPGs to qualify for ENERGY STAR. Following review of CEA's proposal on DAM, EPA will better understand whether stakeholders still see this as a concern and will be able to better address this specific comment.

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	A stakeholder requested that the DAM be factored into the On Mode power consumption formula instead of setting it at a hard limit of 4W.	EPA is primarily interested in DAM as a means to assure that a TV remains in standby as much as possible when not being viewed. Thus the requirement is intended for periods when the TV is downloading EPG or other data and the TV is not being viewed (i.e. the screen is not active).
Screen Size	A stakeholder noted support for normalizing On mode power use by screen size.	EPA appreciates stakeholder support for this approach.
	A stakeholder commented that power consumption should not be seen as primarily a function of screen size because no relationship exists between screen size and power consumption for DLP technology.	Although there is less of a correlation between screen size and power consumption for rear-projection technologies such as DLP, other technologies such as CRT, LCD and Plasma show a clear increase in power consumption for larger screen sizes. As EPA is pursuing a technology-neutral specification which applies to all technologies, and the majority of these technologies exhibit this relationship, EPA believes it is necessary to base power consumption levels on screen area for all products. This approach also recognizes rear projection models' overall energy efficiency compared to other technologies with large screen sizes.
	A stakeholder suggested the specification include diagonal screen-size equivalents on the x-axis of charts in addition to screen area.	These have been added to the charts included with the Draft 2 specification's release.
	A stakeholder requested that metric units be used instead of square inches to measure screen size.	To accommodate EPA's international ENERGY STAR partners, specification equations have been presented in both standard and metric units (i.e. square inches and square centimeters).
Resolution	Stakeholders asked that the dataset for determining the maximum power consumption equation include resolution and that more data be added for native resolution 1080p TVs, stating that 768p models are over-represented. Furthermore, stakeholders asked that more data be included for large screen LCD TVs.	In this Draft 2 specification, EPA proposes different specification lines based on the resolution of the screen. This approach was developed in response to stakeholder concern that, in addition to screen area, resolution also heavily affects power consumption. The proposed On Mode requirements are based on an enhanced dataset - the current dataset for 1080 models has gone from 24 units to 56 units.
	A stakeholder requested an allowance based on resolution. The stakeholder noted that increased energy consumption for higher resolutions ranges from 30% to 78%, depending on screen size and that achieving energy efficiency for 1080p Plasma models is difficult as luminous efficacy decreases by 40-50% due to the higher resolution.	In this Draft 2 specification, EPA proposes different specification lines based on the resolution of the screen. This approach was developed in response to stakeholder concern that, in addition to screen area, resolution also heavily affects power consumption. The proposed On Mode requirements are based on an enhanced dataset - the current dataset for 1080 models has gone from 24 units to 56 units.
Definitions	A stakeholder suggested that the "television monitor" definition be replaced with: "An electronic product intended to display a video signal from an external tuner or other video source such as a VCR or DVD Player on a CRT, LCD, Plasma display, or other display device. To qualify, the television monitor must be capable of being powered from either a wall outlet or a battery unit that is sold with an AC adapter. For purposes of this agreement, this definition includes analog and digital television monitors. Television monitors with computer capability (e.g., computer input port) may qualify as ENERGY STAR under this specification as long as they are marketed and sold to consumers as television monitors (i.e., focusing on television/video as the primary function)."	EPA has incorporated this change in the Draft 2 specification.

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	A stakeholder requested to separate the "TV/DVD Combination Unit" into: TV/HDD Combination Unit: "A system in which the TV and HDD are combined into a single unit and which meets all of the following criteria: the HDD is included in the television casing; it is not possible to measure the power requirements of the two components separately without removal of the television casing; and the system is connected to the wall outlet through a single power cable" and Digital Versatile Disc (DVD): "A commercially available electronic product whose intended purpose is the production or recording of digitized video signals on a spinning reflective disc media."	In order to provide additional flexibility for manufacturers, EPA has combined all TV combination units into one definition so that products such as a TV/VCR, a TV/HDD, etc all have to meet one definition under the Draft 2 specification. This decision was made to allow forthcoming TV combination units to qualify under the Version 3.0 TV products specification, provided they meet the definition for a "TV Combination Unit" and power limits.
	A stakeholder asked that screen size be defined as "viewable screen area" and require submission of viewable screen dimensions. The stakeholder also asked to include "viewable" before terms: "screen area", "display width" and "display height."	These changes have been incorporated into the Draft 2 specification.
	A stakeholder noted that the "Off Mode" definition is unnecessary.	This definition has been removed from the Draft 2 specification.
	A stakeholder asked to add "TV/HDD" to 2) "Qualifying Products", 3) "Energy-Efficiency Criteria", A) "On Mode/Active Power", Sec 1 (p. 5); A), Sec 2, B) "Download Acquisition Mode", C) "Standby Mode" (p. 6)	This product-type is now included under the term "TV Combination Unit," which appears under all the applicable sections, as requested by the stakeholder.
	A stakeholder asked that a "TV monitor" be distinguished from a TV by the fact that it does not have a TV tuner.	This was EPA's intent with the Draft 1 specification, and has been clarified under the Draft 2 specification.
	A stakeholder suggested aggregating TV/VCR, TV/DVD, etc. under TVs with additional functions because TVs will likely gain more functions in the future.	EPA has incorporated this change in the Draft 2 specification.
	A stakeholder suggested defining On Mode as having sound OR picture rather than sound AND picture.	EPA believes that a TV must display a picture in order to be considered 'On.'
	A stakeholder suggested to define "true Off mode" as "Zero power Off mode" as to be semantically precise.	EPA has not included a definition for Off Mode under the Draft 2 specification.
Test Methodology	Stakeholders supported the use of the Draft IEC 62087, Ed. 2.0 for measuring On Mode power use.	EPA appreciates stakeholder support for use of this test procedure to determine On Mode ENERGY STAR qualification under the Version 3.0 TV products specification.
	A stakeholder requested to delete "and the Internet derived content referred to in section 11.6, 'On mode....signal'" for testing of TVs. The stakeholder explained that IEC internet content video signal was chosen to best model the actual APL of the 100 most popular web pages, not the type of video streaming content viewed on TV.	EPA has incorporated this change in the Draft 2 specification.
Technology Separation/ Neutrality	Several stakeholders asked to maintain technology neutrality as specified in the current Draft 1 specification. Stakeholders noted that particularly with Plasma and LCD technologies, there exists relative parity in overall performance and technology between the two systems and having separate power requirements would be unnecessarily complicated.	EPA appreciates stakeholder support for a technology-neutral specification and has maintained this approach in the Draft 2 specification.

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	<p>Several stakeholders cited the need to separate On mode power consumption equations by technology type that factor in features (including screen resolution) and combination units such as TV/DVD units. Stakeholders noted that ENERGY STAR precedent already exists for separate equations based on technology differentiation, citing the ENERGY STAR refrigerator specification as an example. A stakeholder went on to say that the current equation is "technology biased" and forces consumers to choose between high performance and lower energy use, so they will ignore the ENERGY STAR label in favor of TVs that deliver higher quality pictures and performance.</p>	<p>EPA has separated On Mode requirements based on both screen area and resolution in this Draft 2 specification, based on stakeholder feedback. Irrespective of technology-type, however, all TVs serve the same fundamental purpose. This approach ensures that when a consumer considers one TV with the ENERGY STAR versus another, they can be confident the TVs are equally efficient and the meaning of the label is consistent across technologies. Further, a technology-neutral approach provides flexibility in the future for manufacturers wanting to qualify TVs that utilize screen technologies that are not currently mainstream, such as OLED. Given that EPA's dataset also includes many new, feature-rich TV models submitted by manufacturers, EPA does not believe that the specification ignores high performance models.</p>
	<p>A stakeholder claimed that the current data-set chart is biased in favor of "outmoded" technologies such as CRT and rear projection-based products.</p>	<p>EPA's current dataset is roughly in line with shipment projections for the U.S., based on technology, provided by CEA for 2007 and 2008. EPA thus believes that the dataset is a fair representation of the current TV market.</p>
	<p>A stakeholder suggested that market trends be considered in determining the energy use equation. If, for example, LCDs dominate new TV purchases, then the specification should take this into consideration and set an equation that generates energy savings for consumers.</p>	<p>While EPA appreciates this suggestion, for the reasons outlined above, EPA believes that a technology-neutral specification is the best approach for TVs. EPA's dataset does, however, generally align with technology market data provided by CEA.</p>
	<p>A stakeholder commented that since rear projection display energy consumption remains static as screen size varies, it is inappropriate to include this technology in a data set that makes power proportional to screen size. Projection displays thus depress the slope (0.245), and preclude Plasmas from qualifying.</p>	<p>Although there is less of a correlation between screen size and power consumption for rear-projection technologies such as DLP, other technologies such as CRT, LCD and Plasma show a clear increase in power consumption for larger screen sizes. As EPA is pursuing a technology-neutral specification which applies to all technologies, and the majority of these technologies exhibit this relationship, EPA believes it is necessary to base power consumption levels on screen area for all products. This approach also recognizes rear projection models' overall energy efficiency compared to other technologies with large screen sizes.</p>
	<p>A stakeholder noted that the On Mode power equation that should be technology-neutral does not consider that certain technologies-- E.g., Plasmas-- are less mature than CRTs and rear projection displays. It therefore provides a disincentive to improve the energy efficiency of plasma TVs, and will likely lead to a sharp drop in Plasma TV sales.</p>	<p>By setting a technology-neutral specification, EPA believes that it is ensuring that when a consumer sees the ENERGY STAR label on a TV, it meets the same requirements as other TVs of identical resolution and screen-size that also carry the label, thereby allowing the consumer to make a fair comparison. Further, a technology-neutral approach allows manufacturers flexibility in the future in terms of qualifying TVs that utilize screen technologies that are not currently mainstream and therefore included in EPA's current dataset, such as OLED.</p>
	<p>A stakeholder suggested developing separate equations for HD (720p) and Full HD (1080p) technologies, since the latter technology is newer and more energy consumptive.</p>	<p>EPA has incorporated this change in the Draft 2 specification, which separates requirements based on both screen area and resolution to determine ENERGY STAR qualification.</p>

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Adder Power Requirements	A stakeholder noted that picture quality improvements (i.e., wide color gamut, motion blur improvement, full-HD 1920x1080) can add to a TV's base power consumption, therefore should have allowances or 'adders' under the Version 3.0 TV products specification.	EPA reviewed the information provided by stakeholders on the estimated power draw of these features and conducted research to determine how prevalent they are in the marketplace. Based on information from DisplaySearch, EPA found that Wide Color Gamut is projected to be in over 40% of TVs with a screen size of greater than 30" by 2008, when the Version 3.0 TV products specification is proposed to take effect. Given the quick uptake of this feature, EPA does not believe that it should be deemed a 'premiere' feature and warrant an additional power consumption allowance. Motion blur improvement is also expected to be more prevalent in TVs by 2008. Additionally, based on information provided by stakeholders, this feature has a minimal effect on power consumption, especially when compared with a TV's overall power budget.
Timeline	Stakeholders requested that the Version 3.0 effective date be pushed back to July 1, 2009. One stakeholder claimed that currently, technology is not available for Plasma TVs to meet the proposed requirements.	The timeline for an ENERGY STAR specification becoming effective is typically nine months after being finalized, and EPA intends to stick with this timeline for the Version 3.0 TV products specification, believing it allows manufacturers adequate time to prepare for the new requirements.
	A stakeholder suggested that energy efficiency requirements and timelines for implementation should be harmonized between the U.S. and Europe.	Given that the ENERGY STAR program is voluntary, designed to reward top performers in a given category in terms of energy efficiency, harmonization with programs that have mandatory requirements is limited to test procedure harmonization. EPA understands that harmonization with other voluntary initiatives would benefit all stakeholders and is therefore attempting to do so as much as possible with its international country partners for TVs, particularly with regards to the test procedure used to determine a TV's On Mode power consumption. The timeline for an ENERGY STAR specification becoming effective is typically nine months after being finalized, and EPA intends to maintain this timeline for the Version 3.0 TV products specification, believing it allows manufacturers adequate time to prepare for the new requirements.
Other	A stakeholder noted that Automatic Brightness Control should be encouraged.	EPA has included an additional equation under the Draft 2 specification specifically for TVs that ship with an Automatic Brightness Control enabled as the default, recognizing that these TVs will be used during low ambient light level conditions for a portion of time, thereby using less power, which should be recognized when determining overall On Mode power consumption.
	A stakeholder requested that there be separate Standby Mode pass/fail criteria from On Mode pass/fail criteria, considering that 37% of models met On Mode. The stakeholder believes that the On mode power consumption equation should reflect a true 25% rule for On Mode, along with existing 1W limit for Standby Mode. The stakeholder suggested a new equation: $y=0.245x + 3$.	Given that TVs must meet both the On Mode and Standby Mode criteria in order to be considered ENERGY STAR qualified, EPA is not separating qualification by criteria. EPA considers the proposed specification levels as balancing well the program's principles.
	A stakeholder encouraged EPA to lobby for an expansion of the FTC EnergyGuide label to include TVs to provide consumers sufficient information to make energy-efficient purchasing decisions. If an EnergyGuide label is not applied, then the ENERGY STAR mark should include absolute energy consumption data.	EPA agrees with this stakeholder's view on the importance of making consumers aware of how much energy their TVs use, so that this may be factored into their purchasing decision. EPA does intend to publish absolute energy consumption for qualified TVs on its Web site.