Topic	Subtopic	Stakeholder Comment Summary	U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy (DOE) Response
Definitions	Signage Displays	For greater clarity, one industry group recommended EPA remove the following examples from the definition of Signage Display as they are extraneous to the qualitative and quantitative criteria of the definition: "electronic display intended for multiple people to view in non-desk based environments, such as retail or department stores, restaurants, museums, hotels, outdoor venues, airports, conference rooms or classrooms."	Signage displays must still meet at least two out of the four physical attributes provided to meet the definition of signage display. EPA has retained these examples in the definition to provide greater ability to distinguish signage displays from computer monitors, based on how they are typically used.
Definition	Sleep Mode	One stakeholder suggested that the description of Sleep Mode activation be slightly modified to include the touch functionality as follows: "Sleep Mode may serve the following functions: facilitate the activation of On Mode via remote switch, display touch functionality, internal sensor, or timer; provide information or status displays including clocks; support sensor-based functions; or maintain a network presence."	EPA has clarified the definition of sleep mode to include touch functionality.
Definition	Plug-in Module	One stakeholder commented that the statement that "modules providing additional input options are not considered Plug-in Modules" conflicts with the "Process touch signals" option on line 93 and suggested that the text in line 94 be changed to: "Note: Modules providing any other additional input options are not considered Plug-in Modules for the purposes of this specification".	EPA has clarified the definition of plug-in module, such that additional inputs does not include touch, which is explicitly addressed above.
Scope	Excluded Products	One stakeholder commented that the sentence "Products that are covered under other ENERGY STAR product specifications are not eligible for certification under this specification including Televisions and Computers (Thin Clients, Slates/Tablets, Portable All-in-one Computers)" does not include mention of Integrated Desktop Computers and recommended that this subcategory should either be added to the list of excluded computer types as below or the individual types of computers should be removed.	EPA has added integrated desktops to the list of computer types excluded from the specification.
Full Network Connectivity	Power Management	One stakeholder commented that the following requirement that the display have the "capability to transition from On Mode to Sleep Mode via a signal over an Internet Protocol connection" is unnecessary and will add confusion to meeting the definition of Full Network Connectivity. The stakeholder argued that the ENERGY STAR Displays Test Method V7 Final Draft Section 6.7) B) is sufficient, requiring that the presence of Full Network Connectivity to be determined by testing the Display for network activity in Sleep Mode according to section 6.7.5.2 of CEA-2037-A, Determination of Television Set Power Consumption.	EPA has removed this requirement, instead relying on the test method.
Computer Monitors	Resolution Allowance	One stakeholder commented that each Megapixel of total screen resolution requires 3.37 W and therefore the energy resolution allowance in kWh should equate to 3 W of On Mode power per Megapixel. The stakeholder suggested the Final Draft resolution allowance be revised from 6.13 kWh to 9.2 kWh.	Based on EPA's data analysis in Draft 1 and Draft 2, EPA continues to find a correlation of 2W/MP and has thus maintained the allowance of 6.13 kWh. EPA has revised the TEC limit slightly to ensure more even representation across the size bins (see responses to comments below). As a result, the new TEC limit also achieves greater representation across all resolution bins.
Enhanced Performance Monitors	Definition	One stakeholder group requested that EPA include the enhanced performance criteria for computer monitors as a formal definition in the Definitions section of the Specification "as other entities, utilize and refer to ENERGY STAR program requirements for definitions of products, it is critical to maintain a clear definition of EPDs" noting that it "appreciates EPA's goal to provide flexibility with the definition of EPDs as technology evolves, but believes regular updates of the specification will be able to adjust this definition in a timely manner."	EPA continues to prefers to address and account for enhanced performance displays by describing the set of features that must be present in order for such products to be eligible for a power allowance. EPA maintains that other stakeholder groups are still able to harmonize their own definition for enhanced performance displays with EPA's designated set of criteria for enhanced performance functionality as described in Section 3.3.4 of the Final specification.

Topic	Subtopic	Stakeholder Comment Summary	U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy (DOE) Response
Enhanced Performance Monitors	Criteria	One stakeholder argued that "High brightness and color gamut conformity across a display is a clear indication of a display being of enhanced performance" and therefore requested two additional criteria be added to the Enhanced Performance Display definition : - Brightness and color uniformity of >90% across the image; and - Color and brightness stability at the delivered specified performance across the specific working temperature range and nominal working life.	EPA appreciates this feedback on additional features that may be prevalent in enhanced performance displays. Due to a lack of data, at this time, EPA is not including these additional criteria for products to be considered enhanced performance displays. However, EPA welcomes receiving new data from stakeholders over the coming year and will monitor the market to determine if brightness and color uniformity should be included in a future revision to the specification.
Enhanced Performance Monitors	Allowance	One stakeholder noted that computer monitors that meet the enhanced performance criteria including “Color Gamut support is 32.9% of CIE LUV or greater” can meet the ENERGY STAR Total Energy Requirements at 25% or higher rate without any enhanced performance allowance. As such the stakeholder requests the Final Draft 15% allowance for the monitors meeting these criteria be removed. Additionally it is the stakeholder’s understanding “that the technology used in the lower performance EPDs is widely used in televisions and so a transition across to monitors in a short amount of time is possible.” Additionally the stakeholder pointed out that monitors of this performance level are likely to be considered “normal” under future energy regulations in Europe. Another stakeholder conversely argued that the additional allowances for enhanced performance be increased as follows: 32.9% of CIE LUV or greater (≥ sRGB 99%): 0.25 x (ETEC_MAX - 6.13 × r) 38.4% of CIE LUV or greater(≥ Adobe RGB 99%): : from 0.8 to 1.00 x (ETEC_MAX - 6.13 × r)	EPA is maintaining the current allowance of 15% for EPDs with sRGB color gamut, based on data analysis that a small subset of monitors that meet all three EPD criteria for color gamut, viewing angle and resolution require additional power. EPA recognizes that sRGB color gamut alone is found in a larger subset of its dataset. EPA will continue to monitor the market and review the need for providing additional allowances for EPDs in a future revision to the specification. EPA has also evaluated the dataset of models with 38.4% CIE LUV or greater and has determined that the current allowance of 65% is sufficient for capturing the top-performing models.
Curved Displays		The stakeholder noted that to make a curved display, the transmittance decreases about 40% compared to a flat display, and that to account for it, a 25% x (ETEC_MAX - 6.13 × r) allowance is needed.	EPA appreciates this feedback and explanation. However, at this time, EPA lacks enough data to determine the need for additional power allowances for this feature. EPA also lacks information on any additional functionality provided by a curved display, which would thus warrant additional power allowances. Therefore, EPA will continue to monitor the market and welcomes any additional data on the utility and power consumption of curved displays for consideration in a future revision to the specification.
Computer Monitors	Touch Functionality	One stakeholder requested EPA consider an additional allowance of 20% for touch functionality in monitors. The stakeholder noted that additional power is needed for backlight power, since a wider masking area that hides the touch circuitry causes the light transmittance to decrease by 8%, with additional losses due to logic circuitry.	New data was also provided for monitors with touch functionality. The expanded dataset demonstrates that models with this feature consistently consume a meaningful amount of additional power, thus supporting the addition of a modest power allowance.
Computer Monitors	Size Representation	Several stakeholders urged EPA to select energy requirements reflective of the top 25% of models within each size bin to maximize the benefit to consumers and maintain industry participation. One stakeholder group noted that the Final Draft specification had pass rate of 33% for <14 inch displays, 80% for 14-16 inch displays and 43% for 16-19 inch displays which does “ not appear to meet the objective of ENERGY STAR in identifying highly efficient products for a given category.” With larger size displays, the same stakeholder pointed out that there are pass rates of 19% for 19-20 in displays, 12% for 20-22 inch displays, 24% for 22-24 inch displays, 17% for 24-26 inch displays and 16% for >26 inch displays arguing that pass rates for the larger display sizes, with the exception of the 22-24 in category, are excessively low and that preference for small displays does not realistically meet consumer needs.	EPA received additional data for 223 models, many of which are pending release. The addition of these models and the performance they reflect supports relaxing the TEC limits somewhat to ensure an adequate selection of qualifying models, particularly in key product sizes, namely in the 20-24” and greater than 26” size bins. EPA’s minor adjustments to the TEC limits recognize a modest amount of additional models and recognize the top quartile of products in the key product size bins.

Topic	Subtopic	Stakeholder Comment Summary	U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy (DOE) Response
Computer Monitors	Pass Rate	One stakeholder group expressed concern regarding requirements in the Final Draft that less than 25% of models currently on the market can meet. The stakeholder argued that it "introduces a guessing element into what would otherwise be a data-driven process and while it is true in the past that manufacturers have made advancements to increase the percentage of products on the market that qualify for ENERGY STAR, setting an overly restrictive cap penalizes rather than rewards this behavior." The stakeholder suggested EPA instead "reset limits on an appropriate frequency, approximately every two years, and set appropriate limits based on the 25% goal to make sure that customers can still purchase an adequate number of qualified products."	EPA has adjusted the TEC limit to ensure that the qualification rate reflects the top quartile of products in key size bins containing the majority of currently qualified products. With Displays, unlike with TVs, EPA recognizes that market shifts occur over a longer time period. In contrast, new TV models are released annually. As such, with the Displays specification, EPA seeks to recognize the top quartile of products at the time of finalizing the specification.
Off Mode		One stakeholder commented that the specification states that products do not need to have an Off Mode to be eligible for certification. The stakeholder requested that "monitors" be required to have an Off Mode or another power mode that can meet the Off Mode power requirement of 0.5W.	By moving to a TEC-based requirement, the Version 7.0 Displays specification reduces energy consumption with one overall limit. As such, EPA provides manufacturers with flexibility in reaching lower energy consumption, either by further reducing Sleep and Off mode power and/or by reducing On Mode power. Therefore EPA is not including additional requirements in Off or Sleep modes.
Signage Displays	Sleep Mode Full Network Connectivity	One stakeholder again requested that EPA include a Tier II requirement (taking effect at a later date) lowering the power limit for Signage Display Sleep Mode below 3.0 W, noting that while it is technically feasible for products to meet a 1.0 W limit, a delayed requirement would give manufacturers adequate time to alter products.	At this time EPA is not proposing a Tier II requirement in order to retain flexibility in revising the specification. EPA will continue to monitor the power consumption of signage displays in Sleep Mode and evaluate the opportunity to further reduce power consumption in a future revision.
Signage Displays	Resolution allowanced	One stakeholder argued that a power allowance be included for Signage Displays with UHD (4K) resolution similar to the 50% of total power consumption allowance in the ENERGY STAR Televisions specification.	At this time, EPA lacks sufficient data on 4K signage displays to determine the need for additional power allowances. In addition, EPA has observed that the power consumption of 4K TVs has decreased substantially since the TV Version 7.0 specification was finalized. As such, EPA anticipates further gains in efficiency for 4K signage displays since they employ the same technologies used in TVs.
Signage Displays	Uniformity Metric and Allowance	One stakeholder requested EPA consider uniformity requirements for Signage Display as it is an important aspect of performance and also affects power consumption. The stakeholder suggested a 5 point weighted approach for quantifying luminance uniformity.	Due to a lack of data on the presence of color uniformity in signage displays, EPA is not including color uniformity as a required definition for signage displays. However, EPA will monitor the market to determine if color uniformity is a key feature in signage displays and, if so, if its presence impacts power consumption.
Specification	Editorial	One stakeholder suggested EPA capitalize the word 'display' consistently throughout the specification.	EPA thanks the stakeholder for this feedback and has consistently capitalized "display" to indicate that the term is listed in the Definitions section.
Specification	Editorial	Two stakeholders noted that Line 319 should state PON_MAX is calculated per Equation 6 instead of Equation 7.	EPA thanks the stakeholder for this feedback and has made the editorial change to the specification.
Specification	Editorial	Two stakeholders noted that Line 332 should read "Maximum Sleep Mode Power Requirement (PSLEEPMAX)" instead of "Maximum Sleep Mode Power Requirement (PON_MAX)."	EPA thanks the stakeholder for this feedback and has made the editorial change to the specification.
Specification	Editorial	One stakeholder commented that the term "power consumption" is not technically correct and so should be changed to "power demand".	EPA thanks the stakeholder for this feedback and has made this change to the specification.
Specification	Editorial	One stakeholder noted Line 407 should reference Version 7.0 and not Version 6.0.	EPA thanks the stakeholder for this feedback and has made the editorial change to the specification.

Topic	Subtopic	Stakeholder Comment Summary	U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy (DOE) Response
Test Procedure	Luminance testing	"For a Display with ABC which cannot be disabled, according to section 6.2 D), luminance is measured with light entering directly into the UUT's ambient light sensor at greater than or equal to 300 lux. Is it the intent that when the luminance measurements are done in this case that test method sections 4 F) and G) are followed, i.e. alignment of UUT, lamp type, light source alignment."	DOE has clarified that section 4) G) is only required for On mode testing, not for Luminance testing.
Test Procedure	Luminance meter requirements	"In section 4 I) , I'm not sure why the accuracy of the meter is being linked with the allowed tolerances of the light measurements. I think the last line of this section, Light measurement accuracy shall be within the tolerance specified in 4.J)4). should be deleted."	DOE has deleted the line from the Final Test Method
Test Procedure	Full Network Connectivity	" 'The presence of Full Network Connectivity shall be determined by testing the Display for network activity in Sleep Mode according to section 6.7.5.2 of CEA-2037-A, Determination of Television Set Power Consumption, with the following guidance: 1) The Display shall be connected to a network per Section 5.2 C) 1) c) prior to the test. 2) The Display shall be placed into Sleep Mode in place of standby-active, low.' For UUTs with more than one Sleep mode is it necessary to verify the presence of Full Network Connectivity in all Sleep modes in order to apply the allowance for Full Network Connectivity?"	This test is applicable to all sleep modes. However, only sleep modes that are claiming the allowance for Full Network Connectivity need to use this test for verification.
Test Procedure	Power Factor	The Test Method says to report the power factor during On mode tests. I assume that it is not necessary to report power factor for the On mode tests of the Test Method section 6.4 B), C), and D) for measurements of P12 and P300, which are used solely to calculate RABC, is that correct? I believe power factor is only required to be recorded for PON measurements, correct?	DOE has clarified in the Final Test Method that True Power Factor reporting is needed only for the P_{ON} measurement.
Test Procedure	Luminance for Signage Displays	The section 6.3)A)1) of the Final Draft Test Method begins: "For Signage Displays with viewable diagonal screen size of 30 inches or more" Since the Eligibility Criteria Section 1)A)1)b revised definition for Signage Display allows diagonal screen size to be less than 30-inches in some cases, then the phrase "with viewable diagonal screen size of 30 inches or more" should be removed from the Test Method Section 6.3)A)1). The revised heading would be only, "For Signage Displays". This would allow all Signage Displays to be tested similarly.	DOE has updated the Final Test Method so that Signage Displays, regardless of size, are set to the same luminance levels (65% of manufacturer reported maximum).
Test Procedure	References	Line 14, 401, 412, 416 – IEC 62301 reference "We note that reference is made to 'International Electrotechnical Commission (IEC) 62301 Ed.2.0, "Measurement of Household Appliance Standby Power," ' . The IEC standard is called, 'IEC 62301:2011 Household electrical appliances - Measurement of standby power' and so the reference should be changed. In any case, reference to the IEC specification should be included as published by IEC to avoid any unintended confusion (e.g. IEC 'Number':'Date')."	DOE has updated the Final Test Method to use the correct name and reference for IEC 62301:2011.
Test Procedure	Editorial	Line 27 – Universal Serial (USB) 3.0 "Reference is made to 'Universal Serial Bus (USB) 3.0' which we believe should be updated to 'Universal Serial Bus (USB) 3.1'."	All references to USB 3.0 are used as examples only, but DOE has updated them to refer to USB 3.1.

Topic	Subtopic	Stakeholder Comment Summary	U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy (DOE) Response
Test Procedure	References	Line 112, 276, 277, 306, 308, 330, 332, 356, 379 – IEC 62087 reference "We note that the IEC 62087 standard was updated in 2015 and so reference should be made to this updated standard if appropriate: 'IEC 62087-3:2015 Audio, video, and related equip-ment - Determination of power consumption - Part 3: Television sets'. In any case, reference to the IEC specification should be included as published by IEC to avoid any unintended con-fusion (e.g. IEC 'Number':'Date')."	DOE has not yet evaluated the impact of the recently released IEC 62087:2015. However, DOE has clarified the existing reference to IEC 62087:2011. DOE will evaluate impact of the 2015 revision in the future.
Test Procedure	Battery Operated Products	Line 254 - Battery Operated Products "The ENERGY STAR v7.0 draft specification document states (lines 133 to 135) that 'Dis-plays with integrated or replaceable batteries designed to support primary operation without ac mains or external dc power, or device mobility (e.g., electronic readers, battery powered digital picture frames);' are excluded from the scope of the specification. There-fore, lines 254 to 266 in the test methodology document could be removed."	DOE has removed this section from the Final Test Method.
Test Procedure	References	Line 276, 277 - IEC 62087 Ed. 3.0 "The IEC specification has been updated and so it should be reviewed whether the reference in the test procedure document also needs to be updated. In any case, reference to the IEC specification should be included as published by IEC to avoid any unintended confusion (e.g. IEC 'Number':'Date')."	DOE has not yet evaluated the impact of the recently released IEC 62087:2015. However, DOE has clarified the existing reference to IEC 62087:2011. DOE will evaluate impact of the 2015 revision in the future.
Test Procedure	References	Line 405 – Version 5.2 ENERGY STAR Computer specification "Reference is made to the version 5.2 ENERGY STAR Computer specification. This could be updated to the 'version 6.1 ENERGY STAR Computer specification'."	DOE has updated the reference to ENERGY STAR Computers v6.1 in the Final Test Method.
Test Procedure	Off Mode	Line 419 – Off mode "The test procedure states that 'D) Off Mode power for products without a physical power switch shall be measured with the UUT connected to the Host Machine, with the Host Machine in the power Off Mode'. The final draft ENERGY STAR v7.0 specification defines 'Off mode' as: '3) Off Mode: The mode where the display is connected to a power source, produces no visual information, and cannot be switched into any other mode with the remote control unit, an internal signal, or an external signal. Note: The display may only exit this mode by direct user actuation of an integrated power switch or control. Some products may not have an Off Mode.' As such, there is a disconnect between these two statements since a product could not wake from 'off mode' as defined within the draft final specification without direct user actuation an integrated power switch or control."	DOE has updated the text in the Final Test Method to be consistent with the Off Mode definition.

Topic	Subtopic	Stakeholder Comment Summary	U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy (DOE) Response
Test Procedure	Off Mode	Line 420 – Off mode "The test procedure includes the text 'with the Host Machine in the power Off Mode'. If this whole sentence is retained after review of the comment above it could be changed to, 'with the Host Machine in Off Mode. For a computer Host Machine, Off Mode is defined in the Version 6.1 ENERGY STAR Computers specification'."	DOE has made this editorial edit in the Final Test Method.