

Topic	Subtopic	Stakeholder Comment	EPA Response
General		<p>Several stakeholders agreed with EPA's decision to address issues regarding persistence of energy saving features in the Version 8.0 specification in a quick timeline to impact the 2018 product line. However, two of these stakeholders noted that if the timeline extends significantly beyond what was laid out in the Draft 1 webinar, EPA should also address adjustments to the Ultra High Definition (UHD) adder and power consumption of the High Dynamic Range (HDR) effect.</p> <p>Another stakeholder noted that the Version 8.0 Draft 1 specification will cause most products currently qualified to not be able to meet the requirements. As a result, they requested the relaxation of the proposed approach.</p>	<p>EPA appreciates this stakeholder feedback and intends to finalize the Version 8.0 specification in early Summer 2017 to affect the 2018 model year.</p> <p>In addition, EPA has made modifications to the proposal seen in Draft 1 based on stakeholder feedback.</p>
Scope	Home Theater Displays	One stakeholder agrees with the inclusion of Home Theater Displays in the scope for Version 8.0. Another stakeholder suggested that educating consumers on the difference between a home theater display (HTD) and a television is very important to ensure that consumers are not dissatisfied, especially given the growing number of consumers who are moving away from traditional set-top boxes.	EPA is maintaining the inclusion of HTDs in the scope of the Version 8.0 specification. On the ENERGY STAR TV product pages, EPA intends to provide consumers with a description of how HTDs differ from TVs.
Energy Saving Features	MDD	<p>Several stakeholders characterized MDD as a technology that delivers energy savings only with the IEC test clip, noting that energy saving features should provide these benefits in actual use as opposed to only during testing. Two of these stakeholders suggested that if MDD is an energy saving feature, it should be in effect in all preset picture settings. In contrast, one stakeholder recommended that EPA require MDD be turned off during testing. Finally, one stakeholder recommended incentivizing energy saving technologies that "cannot be turned off, that provide a good viewing experience, and that provide energy savings under all viewing conditions", such as more efficient LEDs. One stakeholder supported the approach to MDD as presented in Draft 1.</p> <p>Several stakeholders requested that EPA clarify the meaning of "typical viewing experiences", including length of scenes, to permit a repeatable evaluation of MDD and avoid customer confusion over varying results. Another stakeholder stated that the goal of the IEC test clip is to provide a uniform standard representative of real-world viewing and recommended that EPA participate in a process to revise this test clip to define typical viewing experiences. Finally, two stakeholders noted that there is unlikely to be agreement on representative viewing.</p>	<p>To address the concern regarding variability of "typical viewing experiences", EPA encourages manufacturers seeking greater assurance to share their assessment of any new energy saving feature with EPA for approval prior to certification. We would expect to see performance data demonstrating savings over a range of typical viewing content (i.e., full length of popular programming such as news, sports, dramas). For energy saving features dependent on content displayed, using any common length of popular programming over a variety of genres should be adequate to determine if the features deliver similar savings across different content. The requirement in Section 3.2.3 is intended to prevent certification with features that can detect specific content in a test method and thus demonstrate savings that are less likely to occur in a real world setting with content different from that of the test method.</p> <p>Other stakeholders recommended that energy saving features should persist across more Preset Picture Settings, as EPA is proposing to do for ABC. EPA agrees and has clarified language in Sections 3.2.5 and 3.2.6 to make the persistence requirements apply to any energy saving features.</p>
Alerting Consumers to Power Consumption Changes		Two stakeholders commented that the requirement to alert consumers to changes in power consumption due to special functions was too broad and requires more clarity. One stakeholder noted that notifying each time power is increased would cause consumer inconvenience (e.g., when increasing the volume). The other recommended listing particular functions that warrant notification and pointed out that this be supported by data (e.g., unclear if HDR, gesture recognition, or voice recognition require more power).	EPA understands these concerns and proposes modified language in Section 3.2.7 where the TV/HTD must provide an alert only when activation of a Special Function disables an energy saving feature.

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ABC and Persistence		<p>Several stakeholders recommended that EPA require the persistence of ABC in all home preset picture settings, while several others agreed with also excluding any HDR-upscaling preset picture setting from the proposed requirement. According to one stakeholder, preset picture settings without ABC result in a significant loss of energy savings.</p> <p>One stakeholder commented that requiring ABC to be enabled in all modes would provide incentive for a quality implementation. Two stakeholders noted their concern that manufacturers could label the non-ABC picture settings in a way that would encourage users to switch to them. One stakeholder requested that EPA add requirements preventing such labeling or otherwise recommend that users disable energy saving features like ABC be disabled. In addition, a stakeholder suggested EPA add language to require that ABC be turned on again after HDR content is played or after a user switches to a different picture setting. Three stakeholders requested that EPA set requirements such that ABC delivers "relatively similar savings and viewing experiences" across preset picture settings.</p>	<p>Multiple stakeholders requested that EPA require ABC be enabled in all Preset Picture Settings, citing that at least one prominent manufacturer is already doing so. EPA recognizes and applauds manufacturers that have ABC enabled in all Preset Picture Settings. However, EPA has also heard from other manufacturers that implementing ABC in all Preset Picture Settings would not be appropriate. Although the proposed requirement remains unchanged from Draft 1, EPA is considering requiring that for TVs with ABC Enabled by Default, TVs with any number of Preset Picture Settings shall have only one or no Preset Picture Setting without ABC enabled by default. With this Draft 2, EPA requests more information from stakeholders for which specific Preset Picture Settings, excluding the picture setting under the Retail configuration and any picture settings that may only be visible with true HDR content, manufacturers are unable to implement ABC.</p> <p>EPA also proposes expanded language under Section 3.2.5 requiring energy saving features (e.g., ABC) to default back to on when entering preset picture settings where the features were initially enabled as shipped.</p> <p>EPA shares stakeholder interest in ensuring that ABC delivers savings across all Preset Picture Settings, but at this time does not have enough information on variances in ABC savings that may depend on Preset Picture Setting configurations to propose such a requirement. EPA will continue to monitor the market to better understand the impacts of ABC in different Preset Picture Settings.</p> <p>Regarding stakeholder concern that consumers will be incentivized to select Preset Picture Settings without energy saving features enabled, the Department of Energy's Test Method Appendix H to Subpart B of 10 CFR Part 430 already requires the TV to enable the most energy consumptive features if consumers are provided with a prompt or information on whether to select them.</p>
Luminance Requirements		<p>Several stakeholders supported the additional luminance requirements in sections 3.6.3 and 3.6.4. One stakeholder cited 100 cd/m² as the minimum screen brightness recommended in the TCO Displays standard, whereas another manufacturer confirmed that the 150 cd/m² at 3 lux requirement would be acceptable.</p> <p>Two other stakeholders requested that EPA allow a tolerance to account for luminance deviations caused by each module's brightness and light sensor. One of these stakeholders noted that a 20% brightness deviation could be generated from light sensors, and without an allowable tolerance, manufacturers would need to set a screen brightness of over 190 cd/m² to meet the requirement. This stakeholder suggested that if an allowance is not provided, EPA should lower the requirement at 3 lux illuminance condition to 80 cd/m² to provide the user with a comfortable viewing experience and energy savings benefit. The stakeholder stated that:</p> <ul style="list-style-type: none"> • A 150 cd/m² minimum could make the luminance curve almost flat, causing limited energy savings benefit from ABC; • This requirement, in addition to the requirement that the average luminance in the default picture setting be greater than or equal to 50% of the brightest selectable picture setting, would increase overall energy consumption and impose a duplicative requirement; and • In some full-HD models, the module brightness is natively low, and thus the TV would not be able to meet the 150 cd/m² requirement. <p>Two stakeholders suggested that EPA remove this requirement and instead define a ratio of the requirement luminance in the 3 lux illuminance condition to the brightest selectable picture setting. One of these stakeholders recommended 30%.</p>	<p>In response to varied feedback, EPA requested additional insight from the Imaging Science Foundation (ISF) on how it arrived at its recommended screen brightness of 150 cd/m² for dark room viewing. ISF provided input based on its 10-15 years of gathering insights and field data that consistently showed viewer preferences for a screen luminance of 150 cd/m² in dark rooms for LCD TVs.</p> <p>Balancing stakeholder input, EPA proposes setting a minimum screen luminance of 125 cd/m² at 3 lux to account for variations in measured screen luminance, as noted by some manufacturers, and to maintain a minimum floor to guard against TVs certified with ABC enabled from shipping too dim. EPA maintains its proposal to set a minimum required luminance instead of a ratio to guard against TVs with comparatively low Brightest Selectable Preset Picture Settings from shipping too dim. EPA welcomes additional feedback and data regarding this proposal.</p>
HDR Upscaling		<p>Three stakeholders commented in agreement to HDR testing and all suggested that the results be made public by model. Two of these stakeholders requested that EPA add requirements for native HDR content and HDR upscaling in the next specification revision, especially once a consensus test clip emerges that contains native HDR content.</p>	<p>EPA appreciates this stakeholder feedback and maintained the testing of the HDR upscaling feature in the Version 8.0 specification. EPA will monitor the market to assess the opportunity to improve energy efficiency of HDR upscaling in a future revision.</p> <p>EPA supports stakeholder efforts to develop an updated test clip that addresses scene cut frequency and is more representative of the HDR-encoded (and native 4K) content increasingly being watched by purchasers of new televisions.</p>

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UHD Allowance		<p>Several stakeholders recommended that EPA include a UHD adder reduction in the Version 9.0 specification revision as long as the timeline for Version 8.0 remains as short as possible. Other stakeholders supported the inclusion of a reduction to the UHD adder in the Version 8.0 specification since UHD models comprise a significant portion of the Qualified Product List. Numerous ENERGY STAR qualified UHDs fall below the adder level, demonstrating that products are easily able to meet the current requirement. Two of these stakeholders suggested lowering the current 50% UHD allowance to 30%, based two different large datasets and analyses of UHD power consumption analyses. One of these stakeholders suggested a 22 W flat allowance as alternative option to lowering the power limits for UHD TVs. Another stakeholder suggested a 25% adder, which they noted would be double the level seen in European TVs, where UHD TVs consume approximately 13% more power than HD TVs. Another stakeholder suggested maintaining the current allowance until the impacts of the other changes can be reflected in the data. Should the UHD allowance be changed in Version 8.0, this stakeholder supported lowering it to 40% and gradually decreasing it through a phased approach.</p>	<p>EPA shares stakeholder interest in reducing the power draw of UHD TVs, however, since its proposal to require a minimum luminance at 3 lux will most likely impact overall power consumption of TV models qualifying with ABC enabled by default, many of which are UHD models, EPA is choosing to wait until the next specification revision to address UHD power consumption limits.</p>
Software Updates		<p>Two stakeholders noted that software updates could potentially modify or disable some energy saving features. As a result, they recommended that EPA address this in the Version 8.0 specification by requiring TVs to continue meeting the requirements following an update.</p>	<p>ENERGY STAR brand owner Partners are required to update their ENERGY STAR certification if a software update changes the television's reported energy consumption. Disabled energy saving features would be uncovered in the course of ENERGY STAR verification testing and would result in disqualification as appropriate.</p>