

Draft 2 Version 6.0 TV Specification and ABC Proposal Comment Response

Topic	Subtopic	Summary of Comments	EPA Responses
3D		One stakeholder noted the increase in the number of 3D televisions and expressed support for working with stakeholders to develop a 3D test clip to more accurately measure their energy consumption.	EPA is interested in the prevalence of 3D televisions. At this time, EPA and DOE are aware of international efforts to develop a test method for 3D televisions and content. EPA will consider addressing 3D once DOE develops a test method for 3D and energy consumption with 3D is better understood.
ABC Qualification		<p>Following the publication of Draft 2 and EPA's Automatic Brightness Control (ABC) Proposal, which contained a revised approach to ABC qualification, several stakeholders noted that the quality of ABC implementations vary and that the proposed approach would provide an incentive without verifying whether the ABC implementation works as intended. Two stakeholders commented that EPA should verify that the On Mode power decreases with room illuminance.</p> <p>In contrast, a third stakeholder commented that ABC should not be tested at all and that all TVs should be tested at fixed luminance. This would allow test results for both ABC and non-ABC TVs to be comparable and would ensure efficient operation under all situations.</p> <p>Another stakeholder commented that EPA should not promote proprietary ABC solutions.</p>	<p>DOE and EPA wish to ensure that testing of the ABC feature, which can deliver energy savings, accurately represents real-world conditions. EPA intends to harmonize with the forthcoming DOE Test Procedure for Televisions, which will address ABC. To move forward with finalizing the specification while also eliminating the risk and uncertainty for manufacturers for the 2013 product development cycle, DOE and EPA have developed an alternative approach for ABC-enabled TVs. Specifically, EPA has proposed a provisional On Mode power calculation that will automatically go into effect and will remain in effect until the final DOE TV Test Procedure is published. Once the test procedure is published, EPA will evaluate its impact on the qualification rate to determine the appropriate transition time to use the final DOE test procedure to qualify products to Version 6.0 in calculating the On Mode Power for all products with ABC enabled by default. DOE and EPA will work with manufacturers to make this transition smoothly. Note, if DOE adopts a final test procedure before the fall of 2012, EPA intends to make this assessment quickly, given that the Version 6.0 will take effect May 2013.</p> <p>EPA anticipates that the Agency will continue to recognize ABC as a way to save energy under typical viewing conditions and will not test all TVs at fixed luminance. Further, EPA agrees that any ABC requirements should avoid rewarding only proprietary features.</p>
ABC Qualification	Allowance Amount	One stakeholder commented that a 20% allowance would be more appropriate than 10% as it would more accurately reflect the power difference attributable to ABC in current products. Another stakeholder disagreed, saying that any type of flat allowance would move the program further away from modeling the actual benefits of ABC use. Finally, a third stakeholder noted that any allowance be based on achievable energy savings and requested that EPA share its basis for providing the allowance.	The proposed 10% allowance was derived based on analyzing and interpolating existing data for products that ship with ABC enabled by default, which demonstrated that an average 10% allowance for On Mode power to serve as an incentive for inclusion of this energy saving functionality. EPA's analysis shows that the energy saving promise of ABC functionality in TVs well exceeds the 10% investment. Therefore, at this time, EPA retains its proposal to provide a 10% allowance for products that ship with ABC enabled.
ABC Qualification	Shipping with ABC Enabled	<p>One stakeholder commented that ABC should be tested only if enabled by default and as long as the manufacturer does not:</p> <ul style="list-style-type: none"> <li>- Prompt the user to disable it,</li> <li>- Disable it later through a software update, and</li> <li>- It is enabled in all picture settings, not just the Home Picture Setting.</li> </ul> <p>According to the stakeholder, the third requirement need not be tested during qualification, but should be checked during verification testing.</p>	<p>EPA does require that products ship with ABC enabled in order to secure the ABC allowance. Discussions with stakeholders has consistently reinforced that consumers rarely adjust the initial set up of their consumer electronics. Thus, EPA has not proposed action other than shipping with ABC enabled.</p> <p>EPA has also not amended the specification to require ABC in all picture settings, as EPA understands that consumers typically maintain the as shipped set up. However, should data on typical viewing conditions indicate that such an approach would provide increased savings, EPA will pursue a change in the next revision to this specification.</p>

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ABC Qualification	Test Conditions	<p>Numerous stakeholders commented on the ABC room brightness measurement points proposed in the DOE NOPR referenced in Draft 2. The suggestions included:</p> <ul style="list-style-type: none"> <li>- 1, 10, 50, and 100 lux,</li> <li>- 10, 50, 150 (or 100), and 300 lux,</li> <li>- 0, 12, 35, and 300 lux, or</li> <li>- 0, approx. 10, and 300 lux.</li> </ul> <p>Two stakeholders commented that 100 lux and 300 lux measurement points are duplicative (the light sensor saturates below 100 lux, such that there is typically no difference in power consumption at the two points), and suggested keeping only one of the high-brightness points. Two stakeholders also suggested dropping the 0 lux point, as 0 lux is unlikely to occur under actual viewing conditions, though another cited CEA data showing significant viewing time near 0 lux.</p> <p>Another stakeholder noted the ease of testing at 0 lux---it is sufficient to cover up the sensor to achieve this condition. 300 lux is similarly easy to achieve. Since any approach to qualifying ABC would be short lived (due to the forthcoming DOE Test Procedure), one stakeholder argued for a return to these test points.</p> <p>In contrast, tests at light levels near 10 lux may be difficult to achieve repeatably. This is the active range of the sensor, where slight variations in conditions will have large impacts on power measurements. On the other hand, another stakeholder noted that this is exactly where an ABC sensor can provide the most benefit and should therefore be tested.</p> <p>Lastly, one stakeholder noted that testing of ABC functionality not be specified precisely to prevent the creation of a special "testing mode" designed to circumvent verification of functioning ABC sensors.</p>	<p>EPA has proposed that products demonstrate a difference in power consumption at 10, 50, and 100 lux.</p> <p>1) 10 and 100 lux are both testing points in DOE's existing NOPR, and EPA seeks with this provisional approach to align as closely as possible with the DOE test method, and</p> <p>2) 10 and 100 lux represent both dim and bright rooms respectively, and 50 lux represents a midpoint between the two, so a difference in screen luminance at these three room illuminance values is to be expected if the ABC sensor is enabled.</p> <p>EPA is proposing this approach only to test that ABC functionality is enabled and that power consumption changes with differences in room illuminance.</p> <p>EPA considered returning to the current method of assessing On Mode power at 0 and 300 lux; however, there remain questions as to how frequently TVs are viewed at 0 or 300 lux, if at all. With this proposal for a provisional approach to addressing TVs with ABC enabled, EPA seeks to build on this knowledge and foster improved implementation of ABC to reflect real-world viewing conditions. Both the CEA and CLASP studies, conducted in 2011, showed that significant TV household viewing occurred close to 12 lux. Therefore, assessing whether the sensor detects a difference in room illuminance at 10 versus 100 lux better reflects real-world viewing conditions than detecting a difference between 0 and 300 lux.</p>
ABC Qualification	Treatment of Non-Functional ABC	<p>One stakeholder commented that ABC models that fail to show differences in power at different room illuminance levels not be allowed to qualify, and that the affected manufacturer be selected for further verification testing.</p>	<p>ABC performance will be tested in an EPA recognized lab. If the performance does not meet the ENERGY STAR requirements, the product will not be eligible for the ABC allowance.</p>
ABC Qualification	Weightings	<p>Several stakeholders commented on the weightings that measurements conducted at various room brightness levels should receive in the specification, with one stakeholder suggesting equal weightings across the measurement points. Two other stakeholders suggested weighting the lower-brightness measurements more heavily based on recent studies of typical viewing conditions.</p>	<p>EPA will not be weighting the On Mode power measured at different illuminance levels, just assessing whether there is a difference between the measurements. Please see the response to the general comments on ABC Qualification, above.</p>
Automatic Standby		<p>One stakeholder commented that the specification should require TVs to enter a standby mode after a maximum of 15 minutes without video or audio input, similar to California's Title 20 regulations.</p>	<p>EPA will consider this approach for the next specification revision.</p>

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DAM		One stakeholder noted that it is unclear whether the Download Acquisition Mode (DAM) power requirement (Section 3.6.2) applies to a product with active DAM connections.	<p>The requirement states that the DAM power shall be measured according to the Standby-passive Mode test (Section 5.6.1 in the DOE NOPR). The NOPR and the specification further define Standby-passive as: "the mode in which the TV is connected to a power source, produces neither sound nor picture but can be switched into another mode with the remote control unit or an internal signal."</p> <p>This is in contrast to Standby-active Mode High, where "the TV is connected to a power source, produces neither sound nor picture but can be switched into another mode with the remote control unit or an internal signal, and with an external signal, and is exchanging/receiving data with/from an external source."</p> <p>Therefore, although it is not explicitly specified, the Standby-passive Mode test should therefore not have any active DAM connections.</p>
Effective Date		Two stakeholders commented that the Version 6.0 effective date should be set for Spring of 2013, specifically April, as that is the beginning of the product cycle for many manufacturers. One stakeholder commented that the effective date could be as late as Q2 or Q3 of 2013, or as early as January if "Version 5.3 is grandfathered until at least Q2 for older products."	EPA aims to finalize the specification in August 2012 for it to take effect in May 2013 and thus capture most of the new models released in early 2013. Based on this timeline, models will no longer be able to qualify to Version 5.3 after December 2012, but models previously qualified to Version 5.3 will be able to continue to use the ENERGY STAR label until the May 2013 effective date.
ENERGY STAR Most Efficient		One stakeholder commented that EPA should clarify the relationship between the ENERGY STAR Most Efficient designation and the requirement levels proposed for Version 6.0. A clear relationship would avoid consumer confusion and help manufacturers and retailers plan product rollout. As an example, the stakeholder suggested that the Most Efficient levels for one year could become the specification levels the following year.	The ENERGY STAR Most efficient program is nested within the ENERGY STAR program. It targets a subset of ENERGY STAR customers---early adopters who seek the most efficient choice, regardless of cost. EPA bases both ENERGY STAR and ENERGY STAR Most Efficient levels on data reflective of the product market in a given year while staying true to the separate goals of the two programs. As such, the requirement levels developed for the ENERGY STAR Most Efficient program in one year are not intended to be a predictor of ENERGY STAR performance in a subsequent year.
Luminance Requirements		One stakeholder commented that luminance in the home picture setting be at least 65% of the luminance in the brightest setting for TVs with ABC enabled by default.	EPA agrees with this approach and proposes that the luminance of models with ABC be tested in the same manner as that of non-ABC models prior to receiving the ABC On Mode power allowance.
On Mode Requirements		One stakeholder requested further explanation of the shape of the On Mode requirement in Version 6.0 and a confirmation that the requirement level continues to recognize the highest performing models within each size category.	EPA applauds the significant gains in efficiency made in recent years and has revised its approach to On Mode power limits since Version 5.3 in recognition of the achievements in product efficiency. Under this approach, larger models must still continue to reflect greater efficiencies. EPA continues to propose levels that capture top performers that also allow for good selection of products in popular, larger sizes.
Other Environmental Benefits	F-GHGs	One stakeholder commented that unless EPA addresses the Fluorinated Greenhouse Gases (F-GHGs or F-Gases) in the ENERGY STAR specification, untreated emissions will continue to be vented to the atmosphere.	In light of the longer timeframes and various factors associated with implementing F-GHG abatement efforts, EPA is exploring alternative near-term approaches for addressing F-GHG emissions reductions that are outside the ENERGY STAR specification.

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Other Environmental Benefits	Toxicity and Recyclability	Many stakeholders opposed the toxicity and recyclability requirements as expressed in Draft 1, and many commented that ENERGY STAR should solely consider energy efficiency. Some of the stakeholders further commented that harmonization would be an issue, particularly due to the numerous exemptions that are included in the RoHS Directive, but which were not present in Draft 1.	While energy efficiency remains the basis upon which top performers are selected, EPA addresses attributes related to other aspects of product performance in ENERGY STAR specifications as applicable to ensure that overall product performance is maintained relative to a non-qualifying product. By including additional attributes, the ENERGY STAR program seeks to avoid associating the label with models of poor quality or models with features that are not compatible with broadly held consumer or societal interests, thereby preserving the influence of the label in the market. In response to stakeholder concern that placement of toxicity and recyclability requirements in the product eligibility criteria could hinder international harmonization, EPA is proposing that these criteria reside instead in the ENERGY STAR Televisions Partner Commitment document, which is unique to the US market. As such, EPA has removed section 3.8, Toxicity and Recyclability requirements from the Televisions eligibility criteria. Further, in response to feedback, EPA notes that it is the Agency's intention to harmonize with EU RoHS and that the toxicity and recyclability requirements are not subject to third-party certification.
Picture Settings	Definition	One stakeholder commented that the definition of Retail Picture Setting is not necessarily the highest energy consuming mode.	The brightest selectable picture setting will be tested in the test method even though it may not necessarily be called "Retail" in the on-screen menu of a particular television.
Picture Settings	Use	<p>Although one stakeholder commented that 50% of consumers do not change their TVs picture settings (and those that do often go back to Home picture setting), another cited a 2011 study that revealed that 46% indeed do, further commenting that dedicated picture settings make it easier to do so.</p> <p>A third stakeholder commented that EPA conduct additional study to further characterize user behavior in this area, and that in the meantime EPA should continue requiring a double prompt, warning users against leaving the Home picture setting due to the unknown energy using characteristics of other picture settings.</p> <p>However, numerous other stakeholders commented that warning a user each time a user left the home picture setting would annoy the customer to the detriment of the ENERGY STAR brand. As alternatives, stakeholders suggested prompting the customer only the first time he or she leaves the Home picture setting or allowing the customer to disable the prompt.</p>	EPA has revised the requirement to display only an informational message each time any setting other than the Home picture setting is selected. EPA aims to minimize impacts on user experience while ensuring that the user is made aware that the Home picture setting is the setting in which the product qualifies for ENERGY STAR
Scope	TVs with Built-in STBs	One stakeholder commented that some TVs have the functionality of Set-top Boxes (STBs) built-in and inquired whether these products are included within the scope of this or another ENERGY STAR specification.	EPA is interested in incentivizing product consolidation when it delivers energy savings. TVs with built-in STBs are included within the scope of this specification, but EPA remains interested in learning more about them and whether to develop specific requirements in a future specification revision.
Test Method	Battery Powered TVs	One stakeholder expressed support for including battery-powered TVs, but noted that the current test method is insufficient as it does not measure battery charger losses.	EPA thanks stakeholder for this feedback and will consider the proposal for a future specification revision.

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Test Method	Light Measurement	<p>Two stakeholders requested that EPA and DOE "provide specific guidance on measuring ambient light levels, such as the location and orientation of light metering device" to promote repeatability, with another adding that EPA and DOE further characterize the light source, room, and meter characteristics.</p> <p>Further, one stakeholder noted that ambient light levels should be measured with the Television turned On.</p> <p>Lastly, another stakeholder noted that television light meters are more directional than the light meters used in room illuminance studies.</p>	DOE and EPA recognize the importance of clarity and specificity allowing for repeatable, consistent testing between products. DOE will continue to investigate this issue but welcomes any data or information related to ambient light measurements. DOE would address any additional specifications on measuring ambient light levels in its rulemaking proceedings for televisions.
Test Method	Network Connectivity	<p>Two stakeholders commented that the test method be amended to require Internet testing, with one specifically requesting measurement of On and Standby power while connected, with the provision of allowances if necessary. However, one stakeholder noted that TVs that can meet the 1 W standby requirement without an allowance already exist and that EPA should survey manufacturers to determine appropriate allowances.</p> <p>Several other stakeholders commented that plenty of uncertainty still surrounds Internet testing, specifically:</p> <ul style="list-style-type: none"> <li>- Internet Connectivity is not the same as Download Acquisition Mode (DAM)</li> <li>- Internet Connectivity test setup should be standardized (with one stakeholder noting that testing should reflect the maximum power use)</li> </ul>	EPA is interested in demonstrating the power use of televisions in alternate standby modes, especially related to internet connectivity. In April, DOE issued a draft addendum to the test procedure for testing TVs in an internet-connected standby, and this addendum has been included in this Final Draft specification.
Test Method	Warm-up	One stakeholder commented that On Mode testing follow Warm-up (as in the ENERGY STAR Version 5.3 test method) and not Luminance Testing (as in the DOE NOPR), with the exception of TVs that cannot be switched back to the Retail picture setting from the Home setting. In that case, the order in the DOE NOPR should be preserved, but with a check that the Unit Under Test has stabilized prior to beginning the On Mode Test.	DOE is concerned that it can be difficult to know ahead of time if the unit under test is unable to switch back to the Retail picture setting from the Home setting. Additionally, at this time, DOE believes it makes sense to test all TVs in the same conditions, and that the luminance testing will have little impact on the stability of the TV prior to the On mode test.
Test Method Uncertainty		Two stakeholders questioned referencing the DOE NOPR, an incomplete test method, which had not been fully vetted by stakeholders and could be subject to change.	<p>As is typical of the TV market, qualification rates under the current ENERGY STAR specification are already high and growing rapidly, a reflection of the continued strides manufacturers are making in energy efficiency, but also an indicator of the need to finalize this specification revision so that new requirements can take effect in time for ENERGY STAR to be a meaningful differentiator of 2013 TV models.</p> <p>The DOE Notice of Proposed Rulemaking is based on the ENERGY STAR Test Method for Version 5.3, which has already been vetted through stakeholder participation. In addition, by harmonizing with DOE's proposed test method, EPA also ensures a smoother transition to the DOE test method once it is finalized.</p>

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Test Method Uncertainty	Retesting Provisionally Qualified Products	<p>One stakeholder expressed support for EPA's proposal not to require retesting of models qualified under the provisional approach once DOE finalizes its test method. Another commented that even though models should not be retested immediately, there should nonetheless be a time limit less than 2 years on qualification according to the provisional method proposed by EPA to limit the potential lost energy savings due to providing an allowance not based on actual savings.</p> <p>Another stakeholder disagreed with the provisional approach entirely, commenting that the approach could lead to confusion and additional testing burden as ABC models provisionally qualified could lose their qualification and will need to be re-tested and re-qualified 180 days after the DOE test method is finalized.</p> <p>Further, the stakeholder suggested that EPA work with manufacturers and certification bodies to ensure that there is sufficient testing capacity to qualify models to Version 6.</p>	<p>EPA has clarified in the specification that products certified to the Version 6.0 specification under the provisional approach for ABC functionality will not need to be retested once the DOE test method is finalized. EPA initiated the revision of the ENERGY STAR Televisions requirements with the explicit intention of addressing anticipated high qualification rates under Version 5. While these high rates are a reflection of the continued strides manufacturers are making in energy efficiency, they also indicate the need to finalize this specification revision so that new requirements can take effect in time for ENERGY STAR to be a meaningful differentiator of 2013 TV models. As such, EPA intends to complete the development of the Version 6.0 requirements by August 2012, and the new specification would take effect in May 2013.</p> <p>EPA will continue to monitor the market and reserves the right to change the specification should technological advances and/or market changes affect its usefulness to consumers, industry or the environment.</p> <p>In addition, EPA will work with CBs to ensure a smooth transition to using the DOE test procedure once it is finalized.</p>
Test Method Uncertainty	Retesting to Version 6.0	One stakeholder commented that EPA should permit manufacturers to test new models to Version 6.0 starting in November 2012, and avoid the need to qualify models twice—first to Version 5.3 currently in effect, and then to Version 6.0 once that becomes effective.	Manufacturers will be invited to qualify products to Version 6.0 as soon as it is finalized and will not need to retest products once the specification takes effect in Spring 2013.
Test Method Uncertainty	Testing Under the Final Test Method	One stakeholder commented that because the test conditions of the DOE test method will not be known until it is finalized, manufacturers will not know in advance whether products would be able to qualify for ENERGY STAR under the final test method. To ensure predictability in the qualification process, the stakeholder requested that EPA delay testing to the new test method by six months after its publication, which is the typical design time for the ABC functionality in a television.	Once the DOE test method is final, EPA will evaluate its impact on the qualification rate to determine the appropriate transition time to use the DOE test method for the Version 6.0 specification.