



NRDC Input on ENERGY STAR Draft 2 Version 8.0 Specification for Televisions

May 19, 2017

On behalf of the Natural Resources Defense Council (NRDC) we respectfully submit our feedback on the EPA’s draft 2 Version 8.0 product specification for televisions. Our comments supplement those which we previously submitted in response to the development and issuance of draft 1.

In summary, we are very supportive of the direction EPA is taking with this revision but remain concerned about the way the specification treats the persistence of energy savings features. Should the current draft remain unchanged, significant erosion of the energy savings Version 8.0 was meant to deliver could occur. Below we provide more detailed input on this and other points.

1. *NRDC supports: a) EPA’s decision to establish a minimum screen luminance level to guard against TVs certified with Automatic Brightness Control (ABC) enabled from being shipped with too dim of a picture, and b) the revised minimum illuminance level of 125 lux at the 3 nits test point.*

During its May 15 webinar, EPA presented data (see table below) which confirmed that some TVs shipped with exceedingly low TV luminance levels at the 3 lux test point, with three of the seven tested models producing levels below <25 nits, a level most would certainly consider unacceptably dim. Such implementations increase the likelihood that these TVs would produce unacceptable viewing experiences for many consumers which increases the likelihood that they will seek a solution such as to disable ABC, or select an alternate picture setting, both of which usually increase TV energy use.

	A2		A1		B2		E4		F1		C1		D1	
	Luminance (Nits)	Avg. Power (W)												
3 Lux Illuminance Condition	14.00	65.73	23.08	48.12	17.81	93.94	72.89	52.69	156.79	71.63	100	78.49	140.18	76.55
Darkened Room Picture Setting	380.25	133.51	199.27	121.73	146.65	136.20	152.37	76.81	188.86	113.65	251.36	121.31	106.19	72.99

In its prior draft EPA proposed a minimum luminance level of 150 nits at the 3 lux illuminance test point. Based on various comments it received, EPA has decreased the minimum luminance level to 125 nits, a level we think will still achieve the desired outcome and represents a reasonable compromise.

2. *Barring receipt of compelling information from manufacturers, the final version of the ENERGY Star Version 8.0 should not allow energy savings features to be automatically disabled when certain picture presets are selected.*

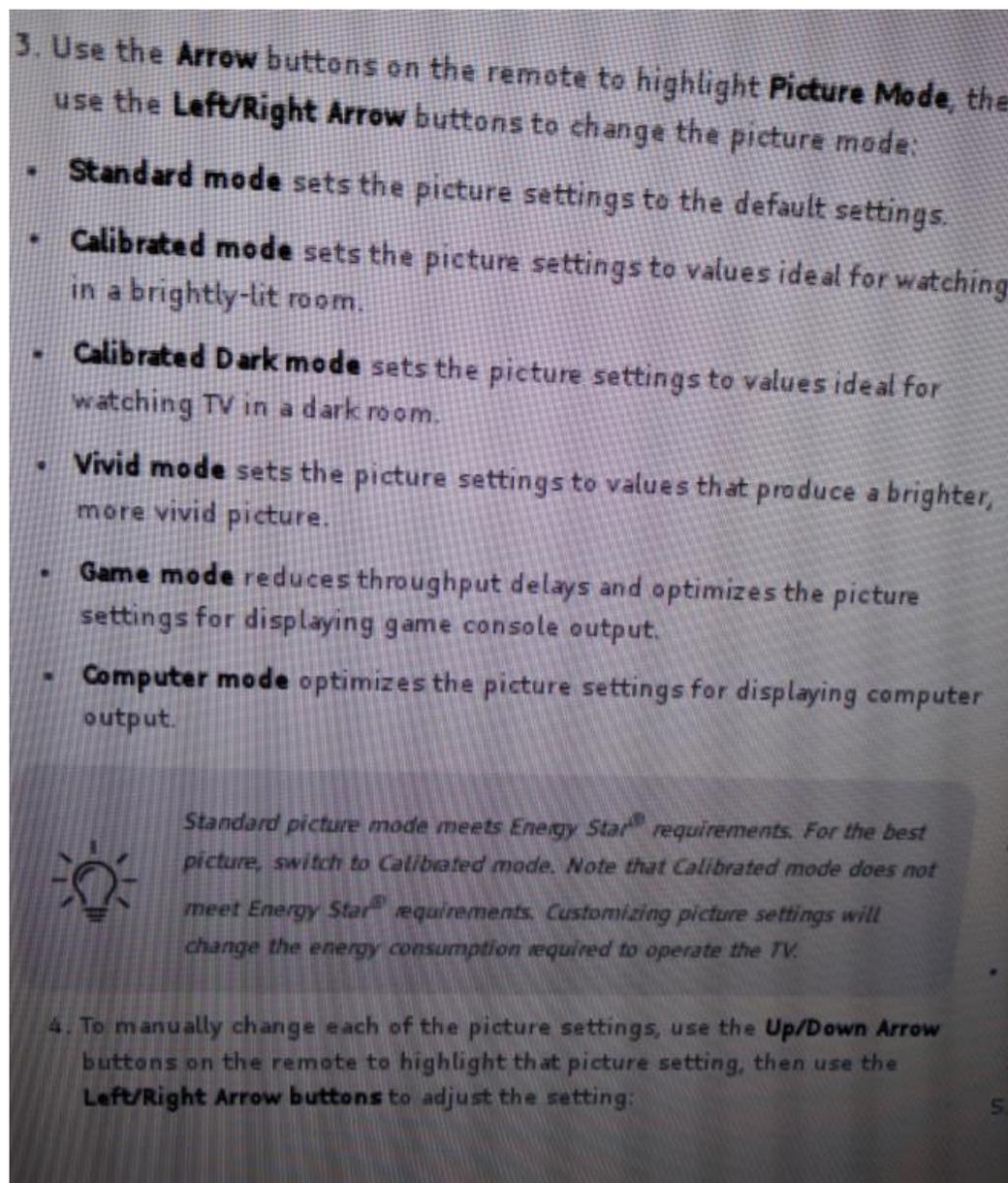
In NRDC's prior comments, we demonstrated how TVs from certain manufacturers automatically disabled key energy savings features, including ABC and motion detection dimming (MDD). While we agree with EPA's proposal to allow TVs to disable these features under two circumstances -- when true HDR content is being played, provided the feature is automatically re-enabled once non true HDR content is being played, or when the retail picture setting is selected -- we have not seen any evidence that justifies allowing TV manufacturers to automatically disable these energy saving features for any of the other preset picture settings. In both its first and second drafts, EPA has proposed allowing one (if 4 or fewer picture presets) or two (if more than 4 picture presets) additional presets.

Barring receipt of compelling information that demonstrates why these energy saving features need to be disabled when a certain picture setting is selected, we strongly encourage EPA to remove its allowance for these energy saving features to be automatically disabled. (As we stated previously, the consumer can at any time choose to disable the energy saving feature at a later time. The only caveat being that the TV shall not at any time prompt the user to disable these energy saving features or to change the picture setting from its default setting. If this is the case, then the TV must be tested with the energy saving feature disabled or in the most power consumptive picture setting.) The last thing EPA wants to do is to allow a TV to ship with energy saving features enabled as a means to receive a very low energy score and receive an unfair competitive advantage, and have a few very enticing presets with names such as "Best Picture" or "Preferred" whereby the energy savings features are automatically disabled and annual energy use of ENERGY STAR labelled TVs skyrockets.

Recently we came across a new TV that encouraged users to select the calibrated picture setting. When we selected this setting, the ABC feature which was enabled by default, was automatically turned off. In digging through the manual we learned that the calibrated setting set the TV to values that were ideal for viewing in a bright room. When calibrated was selected the TV's backlight jumped to 100, its brightest possible level, and ABC was automatically disabled.

This implementation is troubling as this TV is always operated in this higher power consuming state even though it might not always be viewed in a bright room. (Note, unless the consumer took the time to access and scroll through the user manual, they would not have known that calibrated was designed for bright room viewing.) The benefits of this TV's energy saving feature are essentially negated in this case.

A well designed TV with ABC would sense the light levels in the room and would adjust the TV backlight levels accordingly – make it brighter when ambient light levels are observed and dimmer for low ambient light levels.



Should EPA receive additional input from the manufacturers on this point during the comment period, we urge EPA to hold a conference call prior to finalization of this portion of the specification to go over the input it received and to continue the discussion on how to best address these persistence questions in the final specification.

- 3. We support EPA's proposed new requirement that would prohibit language that encourages the user to switch to a non-certified preset picture setting or to disable an energy saving feature at any time after the TV's initial set-up.*

The current DOE test method does a good job at discouraging manufacturers from providing the user with the option to disable energy saving features or to pick a picture setting other than the default during initial TV set-up. If such language or prompts occur during the initial set-up, then the TV is required to be tested with the most energy consumptive feature enabled.

This approach does NOT currently extend to how the TV's software behaves after the initial set-up which leaves the door open for suggestive language, prompts or pop up boxes, post set-up to change a setting or to disable an energy saving feature. This point was discussed during the webinar on May 15 (see [page 24](#)) and EPA is considering prohibiting these sorts of prompts from occurring any time after the TV was initially set up. We strongly encourage EPA to add language to its specification that would include this prohibition and text that states if such prompts occur, that the TV must be retested with the most energy consumptive features enabled.

- 4. We support EPA's approach to addressing the HDR upscaling feature and its requirement for manufacturers to test and report the power use of this feature when it is enabled.*

During the specification revision process it became clear that a growing share of the TV market will in the near future have a HDR upscaling or HDR effect feature. Little is known about the incremental power consumption when this feature is enabled, nor what the spread may be between different TV models. As such, EPA has requested this information as part of its certification process, which we fully support. This data will be instrumental in better understanding the energy impact of this feature and how it should be handled in the next ENERGY STAR TV specification update. Our only request is that EPA make explicit its intention to provide this data on its Qualified Product List (QPL).

- 5. We support the language EPA added that requires energy saving features to automatically default back to on after HDR content has been played, and to apply its rules on persistence across all energy saving features*

and not just ABC.

6. *We support EPA's proposal to prohibit TVs from being certified with energy saving features enabled if the TV produces energy savings results during official testing that are not comparable to those during typical viewing experiences.*

While we agree with EPA's approach that provides manufacturers the ability to submit test results done on "typical content" and get "pre-approval" for the energy savings feature to be on during testing, we recommend EPA add the requirement that this content also be submitted to EPA for their use to review the composition of the clip and perform additional testing.

These requirements should serve as an effective deterrent against manufacturers designing energy saving features that produce much greater savings when the IEC test clip is being played then during normal usage. We also trust that EPA will review the test clips submitted by manufacturers to make sure that this content does indeed appear to represent typical content and is not some handpicked data that contains a disproportionate amount of a type of unique content (i.e. chase scenes with abnormally high frequency of scene changes and rapid motion, or a set of music videos, etc.) that produces a much better power result than more typical/representative content.

7. *We support EPA's addition of language to address software updates and their possible impact on TV energy use.*

In response to requests made by some stakeholders, including NRDC, EPA has added language to their specification that requires partners to update their certification if a software update has occurred that changes the TV's reported energy consumption. This is a very important addition as it eliminates the potential gaming whereby a manufacture could ship their TV in a way that it uses very little energy when first taken out of the box and tested, but uses a lot more energy after the TV receives a software update which could disable energy savings or boost up the brightness of the default picture setting. The new language will help assure this extra energy is captured and would be uncovered during ENERGY STAR's verification testing.

8. *EPA has stated its intent to finalize the Version 8 specification no later than July 2017 and to have an effective date of March 2018. We support this timeline as it provides sufficient time to positively impact the design of the 2018 TVs that will likely enter the market beginning in mid Q2.*

EPA has chosen to have a relatively fast specification update process and to focus the update on "housekeeping" issues such as how to treat the persistence of

energy saving features and new features such HDR upscaling. Provided EPA can stick to its schedule, which provides enough time to influence the 2018 products, we support their approach and decision not to adjust the active mode power levels at this time and to delay that to the next specification update. We continue to urge EPA to eliminate or greatly reduce the size of the power adder for ultra high definition (UHD) TVs, which is currently 50% and is much too generous given recent market data and analysis (see prior comments submitted by NRDC and NEEA on this point), in its next specification update, or if its timeline for finalization of Version 8.0 slips dramatically.

We appreciate EPA's efforts to update the ENERGY STAR specification for TVs and the opportunity to provide our comments and recommendations.

Sincerely,

A handwritten signature in black ink that reads "Noah Horowitz". The signature is written in a cursive style with a long horizontal stroke at the end.

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