

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



**OFFICE OF  
AIR AND RADIATION**

December 2, 2013

Dear ENERGY STAR<sup>®</sup> TV Partner or Other Interested Stakeholder:

With this letter, the U.S. Environmental Protection Agency (EPA) launches the development of the Version 7.0 ENERGY STAR Televisions specification. In addition, in light of the finalization of the Department of Energy's (DOE's) Final Rule on Test Procedures for Television Sets<sup>1</sup> (hereafter referred to as the new DOE test procedure), this letter also relays the Agency's intention to amend Version 6.0 to allow for its use.

**Version 7.0 ENERGY STAR Televisions Specification Launch and Data Assembly**

Given the newly available test procedure, and due to indications that the market share for products meeting Version 6.0 has already increased significantly since the requirements took effect in June 2013, EPA is pleased to announce the launch and timeline for the Version 7.0 ENERGY STAR Televisions specification development process. EPA expects numbers of products qualified to Version 6.0 to continue to grow with the release of new models in the Winter/Spring of 2014. To continue to recognize the top models on the market, EPA will release the Draft 1 Version 7.0 ENERGY STAR Televisions specification in early 2014 and aims to finalize it by fall 2014, with an effective date in Summer 2015.

Manufacturers are encouraged to share any data based on the new DOE test procedure with EPA using the enclosed Excel data assembly template. Any new data, including data submitted to EPA-recognized certification bodies (CBs) that references the new DOE test procedure to qualify to the current specification will be assembled and analyzed in a masked dataset. To the extent necessary, existing data will be adjusted to reflect performance under the new test procedure, and used in developing Draft 1 criteria for the Version 7.0 Televisions specification.

Please send any data via email to [televisions@energystar.gov](mailto:televisions@energystar.gov) by **Wednesday, January 22, 2014**. Also, at this time EPA welcomes stakeholder suggestions on any other issues to be considered during the Version 7.0 specification revision process.

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<sup>1</sup> Recently, DOE published its Final Rule on Test Procedures for Television Sets, *78 FR 63823 (October 25, 2013)*, which became effective on November 25, 2013. According to the DOE Final Rule, manufacturers' energy representations are required to reflect the use of the new test procedure and sampling plan 180 days after publication, which is April 23, 2014. More information is available at: <http://www.regulations.gov/#!documentDetail;D=EERE-2010-BT-TP-0026-0076>.

## Amendments to Current ENERGY STAR Televisions Specification

The DOE test procedure and sampling plan for televisions sets became effective on November 25, 2013. In light of the new DOE test procedure, EPA is modifying the existing Version 6.0 specification. The eligibility criteria remain unchanged for products tested using the new DOE test procedure. The changes, included at the end of this letter, will reflect additions to the sections pertaining to definitions, on mode calculation and luminance measures, referenced test methods, the ABC sensor validation test, and number of units required for testing.

Manufacturers conducting tests of televisions after November 25, 2013 and prior to April 23, 2013, must conduct such test in accordance with Appendix H to Subpart B of 10 CFR Part 430 along with 10 CFR Part 429.25 OR the Notice of Proposed Rulemaking (NOPR) Regarding Test Procedures for Television Sets published in the Federal Register, 77 FR 2864, and represent their energy use according to the test procedure used. However, according to DOE, after April 23, 2013 representations with respect to the energy use or efficiency of television sets must be made in accordance with tests conducted pursuant to the new DOE test procedure (Appendix H to Subpart B of 10 CFR Part 430 along with 10 CFR Part 429.25), and therefore, manufacturers may wish to begin using this new test procedure immediately to avoid duplicative testing to update their energy representations.

To accommodate the reporting of data resulting from the new DOE test procedure, EPA is also updating the Version 6.0 Qualified Products Exchange (QPX) by early January 2014 to a Version 6.1 QPX. To the extent that manufacturers update their products' energy claims in accordance with the new DOE test procedure, EPA-recognized certification bodies (CBs) may update reported power and annual energy consumption (AEC) values via the web service using the Version 6.1 QPX.

Please submit any written comments on modifications to the current Version 6.0 ENERGY STAR Televisions specification to [televisions@energystar.gov](mailto:televisions@energystar.gov) by **Monday, December 16, 2013**. EPA will publish the Version 6.1 ENERGY STAR Televisions specification by January 2014 and it will be effective immediately for certifying new products.

### Summary of Timeline for Next Steps

Date	Milestone
November 25, 2013	New DOE Test Procedure became effective
Today, December 2, 2013	Proposed modifications to Version 6.0 specification to incorporate new DOE test procedure
December 16, 2013	Comment deadline on changes to Version 6.0
End December 2013/ early January 2014	Final Version 6.1 specification and QPX data requirements released
January 22, 2014	Data assembly deadline for test data reflecting use of new DOE test procedure for Version 7.0 specification development
Q1 2014	Draft 1 Version 7.0 specification released
Q3 2014	Final Version 7.0 specification released
Summer 2015	Version 7.0 specification effective

I look forward to working with you throughout this process to develop the Version 7.0 ENERGY STAR Televisions specification. Thank you in advance for sharing data that will enable the ENERGY STAR mark to continue representing the top performers in terms of energy efficiency.

Please contact me at [Radulovic.Verena@epa.gov](mailto:Radulovic.Verena@epa.gov) or (202) 343-9845, or Rachel Unger at [Rachel.Unger@icfi.com](mailto:Rachel.Unger@icfi.com) or (202) 572-9446 with questions or concerns. For any questions pertaining to the test procedure, contact Jeremy Domm, DOE, at [Jeremy.Domm@ee.doe.gov](mailto:Jeremy.Domm@ee.doe.gov) or (202) 586-9870.

Thank you for your continued support of ENERGY STAR.

Best Regards,

A handwritten signature in cursive script that reads "Verena Radulovic".

Verena Radulovic, Product Manager  
ENERGY STAR for Consumer Electronics

Enclosure:  
Version 7.0 Data Assembly Form for Manufacturers

## Amendments to Current ENERGY STAR Televisions Specification

EPA is modifying sections of the Version 6.0 Televisions Specification to add the following language denoted in blue text to allow for the use of the new DOE test procedure. All other existing language remains unchanged.

### 1 DEFINITIONS

- D) **Brightest Selectable Picture Setting** (or Retail Picture Setting): The preset picture setting in which the TV produces the highest luminance **within either the home or retail configuration**.

### 3.3 On Mode Requirements

- 3.3.1 For products with Automatic Brightness Control (ABC) enabled by default and whose performance is validated using one of the test methods outlined in Section 4.3 (i.e. **NOPR Test or Final Rule Test**), On Mode power with ABC ( $P_{ON\_ABC}$ ), as calculated per NOPR Test Equation 1 shall be less than or equal to the Maximum On Mode Power Requirement ( $P_{ON\_MAX}$ ), as calculated per Equation 2.

#### **NOPR Test Equation 1: Calculation of Maximum On Mode Power for Products with ABC Enabled by Default**

$$P_{ON\_ABC} = (0.55 \times P_{300}) + (0.45 \times P_0)$$

Where:

- $P_{ON\_ABC}$  is the calculated On Mode power with ABC enabled by default,
- $P_{300}$  is the measured On Mode power with ABC enabled when tested at 300 lux per Section 5.5 of the NOPR,
- $P_0$  is the measured On Mode power with ABC enabled when tested per Section 5.5 of the NOPR, but with 0 lux entering the sensor.

#### **Final Rule Test Equation 1: Calculation of Maximum On Mode Power for Products with ABC Enabled by Default**

$$P_{ON\_ABC} = (0.25 \times P_{100}) + (0.25 \times P_{35}) + (0.25 \times P_{12}) + (0.25 \times P_3)$$

Where:

- $P_{ON\_ABC}$  is the calculated On Mode power with ABC enabled by default,
- $P_{100}$ ,  $P_{35}$ ,  $P_{12}$ , and  $P_3$  are the measured On Mode power values with ABC enabled when tested at 100, 35, 12, and 3 lux per the Final Rule respectively.

### 3.6 Luminance Requirements

- 3.6.1 **NOPR Test:** Measured peak luminance in the Home Picture Setting ( $L_{HOME}$ ) shall be greater than or equal to 65% of measured peak luminance in the Retail Picture Setting ( $L_{RETAIL}$ ).

3.6.2 Final Rule Test: Measured peak luminance in the Default Picture Setting ( $L_{\text{DEFAULT}}$ ) shall be greater than or equal to 65% of measured peak luminance in the Brightest Selectable Picture Setting ( $L_{\text{DEFAULT\_RETAIL}}$  OR  $L_{\text{BRIGHTEST\_HOME}}$ ).

## 4 TESTING

### 4.1.1. On Mode, Standby-Passive Mode, Luminance, and DAM Testing

4.1.1 When testing On Mode, Standby-Passive Mode, Luminance, and DAM for Television products, the test methods identified in Table 1 shall be used to determine ENERGY STAR qualification.

Table 1: Test Method for ENERGY STAR Qualification

Product Type	Test Method
Ac Mains-powered Televisions	EITHER The Notice of Proposed Rulemaking (NOPR) Test Procedures for Television Sets published in the Federal Register, 77 FR 2864 OR the Final Rule Test Procedures for Television Sets (Federal Register 78 FR 63823 October 25, 2013)
Mains Battery-powered Televisions	ENERGY STAR Test Method for Televisions, Rev. Aug-2010

Note: Hospitality TVs with Download Acquisition Mode electing to use the Final Rule test procedure must also use the ENERGY STAR Test Method for Televisions, Rev. Aug-2010 to test Standby-Active High Mode.

Per the Final Rule Test Procedures for Television Sets, after April 23, 2013 representations with respect to the energy use or efficiency of television sets must be made in accordance with tests conducted pursuant to Appendix H to Subpart B of 10 CFR Part 430 along with 10 CFR Part 429.25.

**Note:** Manufacturers conducting tests of televisions after November 25, 2013 and prior to April 23, 2013, must conduct such test in accordance with Appendix H to Subpart B of 10 CFR Part 430 along with 10 CFR Part 429.25 OR the Notice of Proposed Rulemaking (NOPR) Regarding Test Procedures for Television Sets published in the Federal Register, 77 FR 2864, and represent their energy use according to the test procedure used. However, according to DOE, after April 23, 2013 representations with respect to the energy use or efficiency of television sets must be made in accordance with tests conducted pursuant to the new DOE test procedure (Appendix H to Subpart B of 10 CFR Part 430 along with 10 CFR Part 429.25), and therefore, manufacturers may wish to begin using this new test procedure immediately to avoid duplicative testing to update their energy representations.

## 4.2 Standby-Active, Low Mode Testing

### 4.2.1 NOPR Test:

(The text in Section 4.2.1 remains unchanged).

### 4.2.2 Final Rule Test:

Test according to the Final Rule Test Procedures for Television Sets (Appendix H to Subpart B of 10 CFR 430).

## 4.3 ABC Sensor Validation Testing

- 4.3.1 **NOPR Test:** The average power measured at 50 lux (P<sub>50</sub>) shall increase by at least 5% relative to the average power measured at 10 lux (P<sub>10</sub>), the average power measured at 100 lux shall increase by at least 5% relative to the average power measured at 50 lux (P<sub>50</sub>), and the average power measured at 300 lux (P<sub>300</sub>) shall be greater than or equal to the average power measured at 100 lux (P<sub>100</sub>), as indicated in Equation 5.

### Equation 5: ABC Sensor Validation Conditions

$$\frac{P_{50} - P_{10}}{P_{10}} \geq 5\%, \quad \frac{P_{100} - P_{50}}{P_{50}} \geq 5\%, \quad P_{300} \geq P_{100}$$

Where:

- $P_n$  is the Power consumed for On Mode with ABC enabled at  $n$  lux, with a direct light source

- 4.3.2 **Final Rule Test:** ABC Sensor Validation Test is not required.

## 4.4 Number of Units Required for Testing

- 4.4.1 **For all products,** Representative Models shall be selected for testing per the following requirements:
- For qualification of an individual product model, a product configuration equivalent to that which is intended to be marketed and labeled as ENERGY STAR is considered the Representative Model;
  - For qualification of a Product Family, any product configuration within the family may be considered the Representative Model.
- 4.4.2 **For products tested per the Final Rule,** units shall be selected for testing per the sampling requirements defined in 10 CFR § 429.25, which references 10 CFR § 429.11.