



ENERGY STAR Televisions Draft 1 Version 6.0 Webinar

June 8, 2011

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Agenda



| Topic | Time |
|--------------------------------------|-------------|
| Introduction | 1:00 – 1:15 |
| Data Set and Proposed levels | 1:15 – 1:35 |
| ABC Testing | 1:35 – 1:50 |
| Harmonization with Displays | 1:50 – 2:00 |
| Power Management | 2:00 – 2:10 |
| Networking and Internet Connectivity | 2:10 – 2:30 |
| F-gases in LCD Production | 2:30 – 3:00 |
| Toxicity and Recycling | 3:00 – 3:30 |
| Additional Questions | 3:30 – 4:00 |

Webinar Details



- Webinar and related materials will be available on the ENERGY STAR Televisions PD page:
 - www.energystar.gov/productdevelopment
 - *Revisions to Existing Specifications*
- Audio provided via conference call in:
 - Call in:** +1.877.423.6338 (inside US)
 - Code:** 424891
- Please keep phone lines on mute while not speaking.
- Please refer to the agenda for approximate discussion timing

Draft 1 Version 6.0 Televisions Specification



- The Draft 1 Version 6.0 Televisions specification and related documents were distributed on May 25, 2011.
- All materials related to the specification revision process can be found on the ENERGY STAR Televisions Product Development Page:
 - [Energystar.gov/productdevelopment](http://energystar.gov/productdevelopment)
 - Revisions to Existing Specifications
 - Televisions
- Or here:
 - http://www.energystar.gov/index.cfm?c=revisions.television_spec

Dataset



- To inform this specification revision process, EPA has compiled a dataset of 431 currently qualified models.
 - Models with a release date of Q4 2010 or 2011.
 - Discussion with major electronics retailers indicated that shelves are stocked with only the most recent models and that models usually stay on shelves for a year or less.
 - Dataset contains only models that will be relevant in the summer of 2012 when the Version 6.0 specification is intended to take effect.
 - The 431 models were taken from the 1156 models on the ENERGY STAR Qualified Product List. (Notes: Full QP list includes models with an available date between April 1, 2009 and the present. Additional products have subsequently been qualified and added to the QP list but are not represented in this dataset.)

Proposed On Mode Power Levels



| Version 4.2 | |
|--|---------------------------|
| Effective: April 30, 2010 | |
| Viewable Screen Area, A (square inches) | P_{ON_MAX} (watts) |
| $A < 275.0$ | $(0.190 \times A) + 5.0$ |
| $A \geq 275.0$ | $(0.120 \times A) + 25.0$ |

| Version 5.3 | |
|--|---------------------------|
| Effective: September 30, 2011 | |
| Viewable Screen Area, A (square inches) | P_{ON_MAX} (watts) |
| $A < 275.0$ | $(0.030 \times A) + 5.0$ |
| $275.0 \leq A \leq 1068.0$ | $(0.084 \times A) + 18.0$ |
| $A > 1068.0$ | 108 |

| Proposed Version 6.0 | |
|--|---------------------------|
| Effective: Summer 2012 | |
| Viewable Screen Area, A (square inches) | P_{ON_MAX} (watts) |
| $A < 200.0$ | $(0.055 \times A) + 13.0$ |
| $200.0 \leq A \leq 1068.0$ | $(0.070 \times A) + 10.0$ |
| $A > 1068.0$ | 85 |

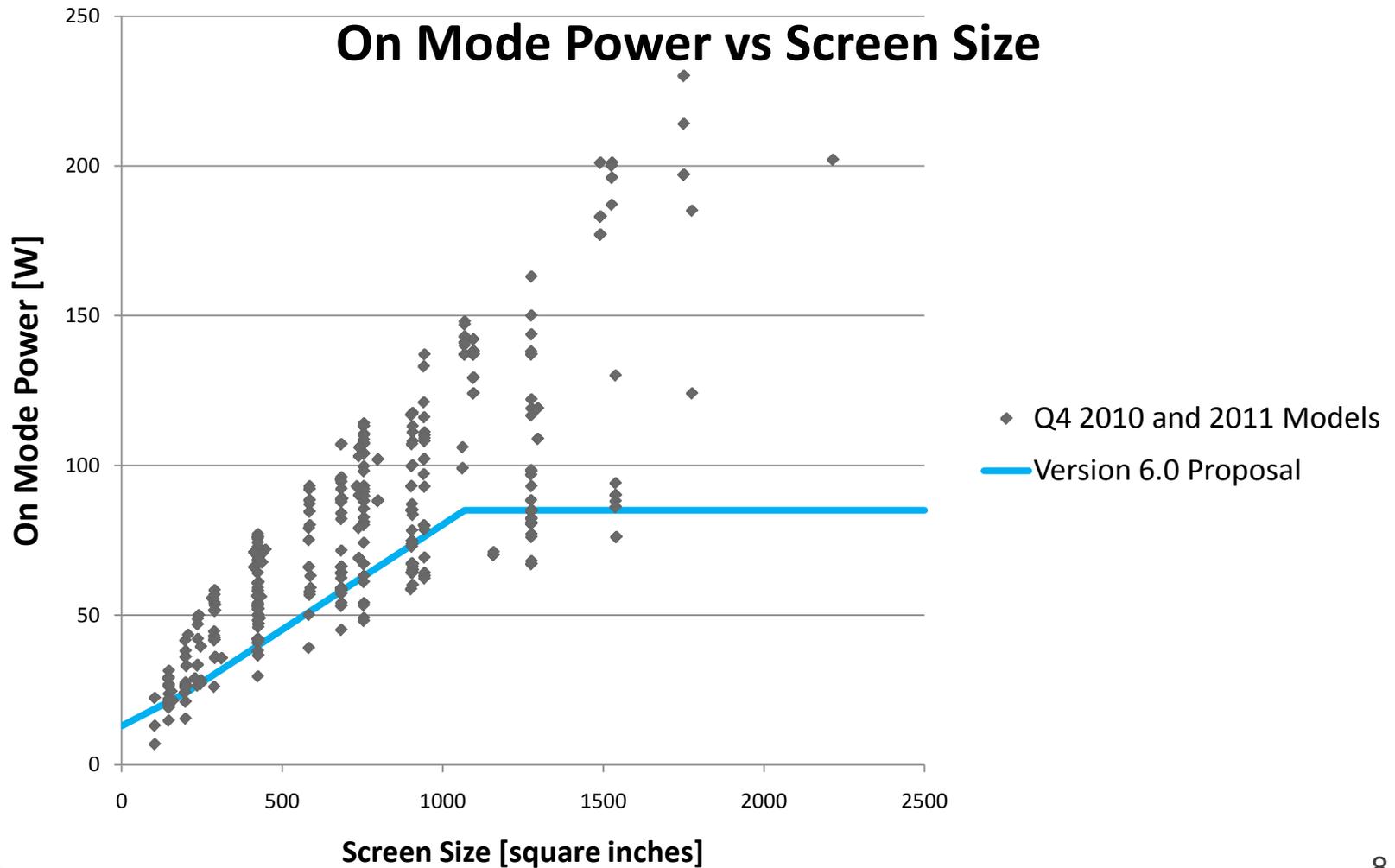
Proposed On Mode Power Levels



- Currently available models from multiple manufacturers meet EPA's proposed Version 6.0 On Mode requirements across all size categories.
 - 88 models representing 20% of the dataset currently meet the proposed requirements
 - Top performing models across all screen sizes are represented
 - EPA distributed a masked version of the dataset used to inform this specification revision to all stakeholders with the Draft 1 Version 6.0 specification. It is also available online.

| Size [inches] | # of Models Meeting Proposed Version 6.0 Requirements |
|---------------|---|
| 20 | 15 |
| 32 | 7 |
| 40 | 10 |
| 46 | 28 |
| 50 | 26 |
| 60 | 2 |

Proposed On Mode Power Levels



Automatic Brightness Control



- EPA is committed to supporting and adopting the Televisions test procedure under development by the U.S. Department of Energy (DOE).
- EPA is proposing the testing of ABC at four different room illuminances; 10lux, 100lux, 150lux, and 300lux.
 - The current ENERGY STAR Televisions test procedure requires testing at 0lux and 300lux

Automatic Brightness Control



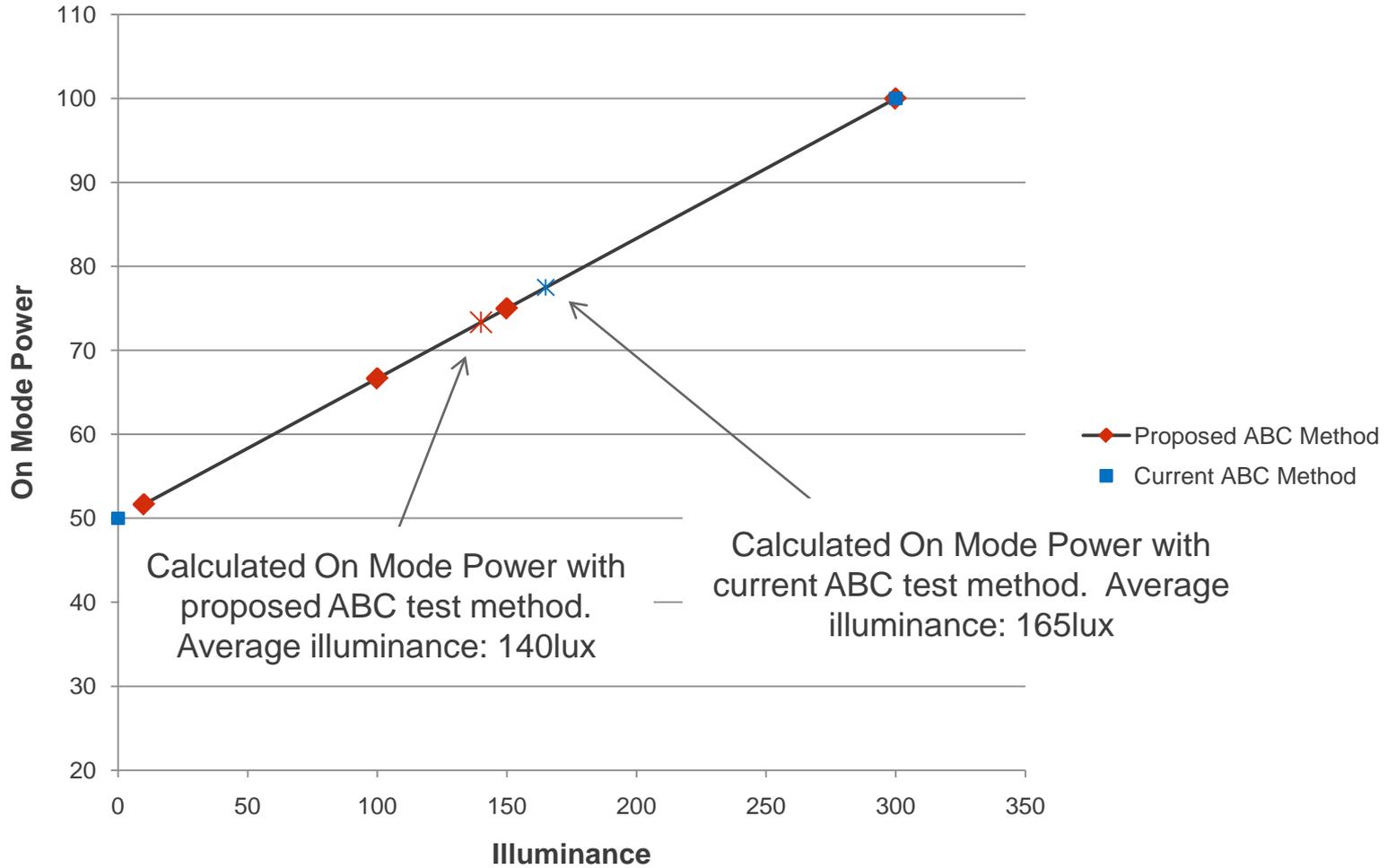
- The testing of ABC has a direct affect on the reported On Mode Power of any model that ships with ABC enabled.
 - With the current ENERGY STAR Test Method, models are tested with an average illuminance of 165lux
 - 45% at 0lux and 55% at 300lux
 - With the new proposal models will be tested with an average illuminance of 140lux
 - 25% at 10lux, 25% at 100lux, 25% at 150lux and 25% at 300lux
- The proposed On Mode power requirements are based on data using the current two point measurements.

Automatic Brightness Control



- EPA has proposed an equation for calculating On Mode Power for televisions with ABC which will equalize the difference in average illuminance.
- $P_{On} = (P_{10} \times 0.25) + (P_{100} \times 0.25) + (P_{150} \times 0.25) + (P_{300} \times 0.25) + 25 \times (P_{300} - P_{10}) / (300 - 10)$
- The highlighted term represents the addition of 25lux multiplied by the average change in power use per illuminance.
- This adjustment allows EPA to base the proposed Version 6.0 requirements on existing data.

Automatic Brightness Control



Networking and Internet Connectivity



- Recent market data shows that a growing number of televisions are currently being shipped with Internet connectivity enabled.
- EPA is proposing that televisions be tested with the Internet Test Loop found in IEC 62087 as well as the Dynamic Content Test Loop to accurately gauge a television's energy consumption while viewing Internet content.
- EPA is also interested in the added power consumption of an active network connection in both On Mode and Sleep Mode. EPA is particularly interested in a proposed method of testing the power use associated with this feature.

Harmonization with ENERGY STAR Displays



- Recognizing the crossover use between televisions and displays, EPA committed to harmonizing the testing of these two ENERGY STAR product categories.
 - These two products categories remain separate and eligibility remain distinct, as there are still differences, mainly intended use, that affect their respective power use.
- Under the development of the Version 6.0 ENERGY STAR Displays specification, EPA has proposed the use of the Televisions On Mode test method for all display products as well as similar ABC and luminance testing.

Power Management



- EPA understands that manufacturers are developing and implementing innovative power management functions for Televisions.
 - Examples include occupancy sensors, proximity sensors, or timer functions.
- EPA would like to encourage their broader use through this specification and encourages industry to share any relevant information on these technologies such as their prevalence in the market, how they are used, and the savings they offer.

Preventing Unintended Consequences



- As ENERGY STAR requirements become increasingly stringent, EPA sensitive to need to guard against unintended increases in GHG emissions associated with manufacturing more efficient technologies.
- While LCDs have proven an effective means to delivering high performance with less energy, producing LCDs requires fluorinated gases (F-GHGs), among the GHGs with the highest global warming potentials.
- For Version 6.0, EPA is proposing to a new Partner Commitment for TV manufacturers, calling on them to source LCD components from suppliers who have demonstrated that they are reducing fluorinated GHG (F-GHGs) emissions in LCD production.

Preventing Unintended Consequences



Proposed requirement:

“As applicable, Partner shall source LCD components from suppliers who have demonstrated that they are recovering or destroying on an annual basis at least 90 percent of the fluorinated greenhouse gases (F-GHGs) used in the manufacturing of, and ancillary operations (such as chamber cleaning) related to the production of LCD panels for ENERGY STAR qualified products.

- Gases covered include CF₄, C₂F₆, C₃F₈, C-C₄F₈, C₄F₈O, CHF₃, NITROGEN TRIFLUORIDE (NF₃), SULFUR HEXAFLUORIDE (SF₆).
- Partners will work with their suppliers to ensure that they use EPA's Protocol for Measuring Destruction or Removal Efficiency (DRE) of Fluorinated Greenhouse Gas Abatement Equipment in Electronics Manufacturing available at http://epa.gov/semiconductor-pfc/documents/dre_protocol.pdf.”

Preventing Unintended Consequences



- Builds on and leverages significant international work accomplished over the previous decade. This requirement was the foundation of the global LCD industry's voluntary commitment established in 2001 through the World LCD Industry Cooperation Committee (WLICC).
- Requires use of EPA's Protocol for Measuring Destruction or Removal Efficiency (DRE) of Fluorinated Greenhouse Gas Abatement Equipment in Electronics Manufacturing, released in 2008, because, it is the only thoroughly field-tested and internationally peer reviewed method available for removing or destroying F-GHGs in LCD manufacturing.
- EPA is exploring the extent to which this requirement could be met through participation in existing initiatives, such as the WLICC, and welcomes stakeholder feedback. What other initiatives exist?

Consumer Value



- In the interest of offering features consumers value, EPA expects to require ENERGY STAR qualified Televisions to meet existing toxicity requirements and be recyclable (i.e. designed for ease of recycling; EPA will also explore including a requirement for recycled content).
- EPA commits to referencing existing standards already met by majority of industry stakeholders (ROHS, IEEE 1680).
- ***Aim is not to create product differentiation around toxicity and recyclability requirements.***

Next Steps



- Stakeholder comments due to EPA
 - June 20th, 2011
- Draft 2 Specification released
 - July 22nd, 2011
- Draft 2 comments due to EPA
 - August 8th, 2011

- Please note these dates are subject to change.

Outstanding questions?

Contact Information



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Thank you!