

CEC Brightness Settings Proposal

**Energy Star® Television Stakeholder
Meeting**
ICF International

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Background

- Power Use of TVs depends upon content and settings – such as brightness
- New consensus test method created (IEC 62087) for on mode power using dynamic test clip (10 min DVD of representative content)
- Current degree of flexibility/lack of clarity about brightness settings



Brightness Settings

- TVs previously shipped fairly bright to ensure good performance on retail shelves (stores are much brighter than homes), but this setting not normally best for home use
- Pre-2008, most TVs did NOT require user to choose initial setting (home, retail, cinema, etc.) in a “forced menu”
- Energy Star and other venues allow testing of power at lower brightness settings – e.g. home setting
- TVs should be tested for energy consumption in the mode most likely to be used by the consumer.



Issue Raised

- Incentive to lower brightness for the 'home' or tested setting, in order to qualify for Energy-Star, for rebates, for publicity, or to comply with mandatory standards
- Results in:
 - Potential consumer dissatisfaction
 - Consumer may then go to menu and pick brighter, higher energy consuming setting or manually increase brightness
 - Expected energy savings become illusory



Options

- Control brightness during testing
 - Establish testing brightness level – either specified level or brightest mode
 - Establish home mode brightness level as % or increment below full brightness or brightest mode
- Control power differences among modes
 - **Allow most consumptive mode power to be no more than X% or increment greater than measured home mode power**



Proposal

- Test television power consumption in home mode or equivalent and,
- Test television power consumption in most consumptive mode on preset menu
- Most consumptive mode is allowed to use no more than 20% more power
- E.g. Most consumptive mode $\leq 1.2 \times$ Home mode.



Why use consumption rather than test brightness?

- The test method for power consumption is now widely used and accepted
- Allows use of dynamic clip which represents common television programming and is hard to “game”
- Expands beyond the current issue of luminance to address general performance in a lower power mode
- Brightness difficult to measure easily, open for gaming
- Measuring brightness complicates test procedure: requires additional setup and equipment



Why a 20% Limit

- Appears to be sufficient to allow manufacturers to compensate for different environments which require different brightness.
- Yet is small enough difference that an overly dim home mode will imply an overly dim maximum mode.
- It is the average difference between home and most consumptive mode dataset submitted for Energy Star® 3.1 spec. (see appendix A)
- Preserves the ability to achieve brighter picture levels in rare circumstances by manually adjusting the brightness levels but NOT via a preset mode

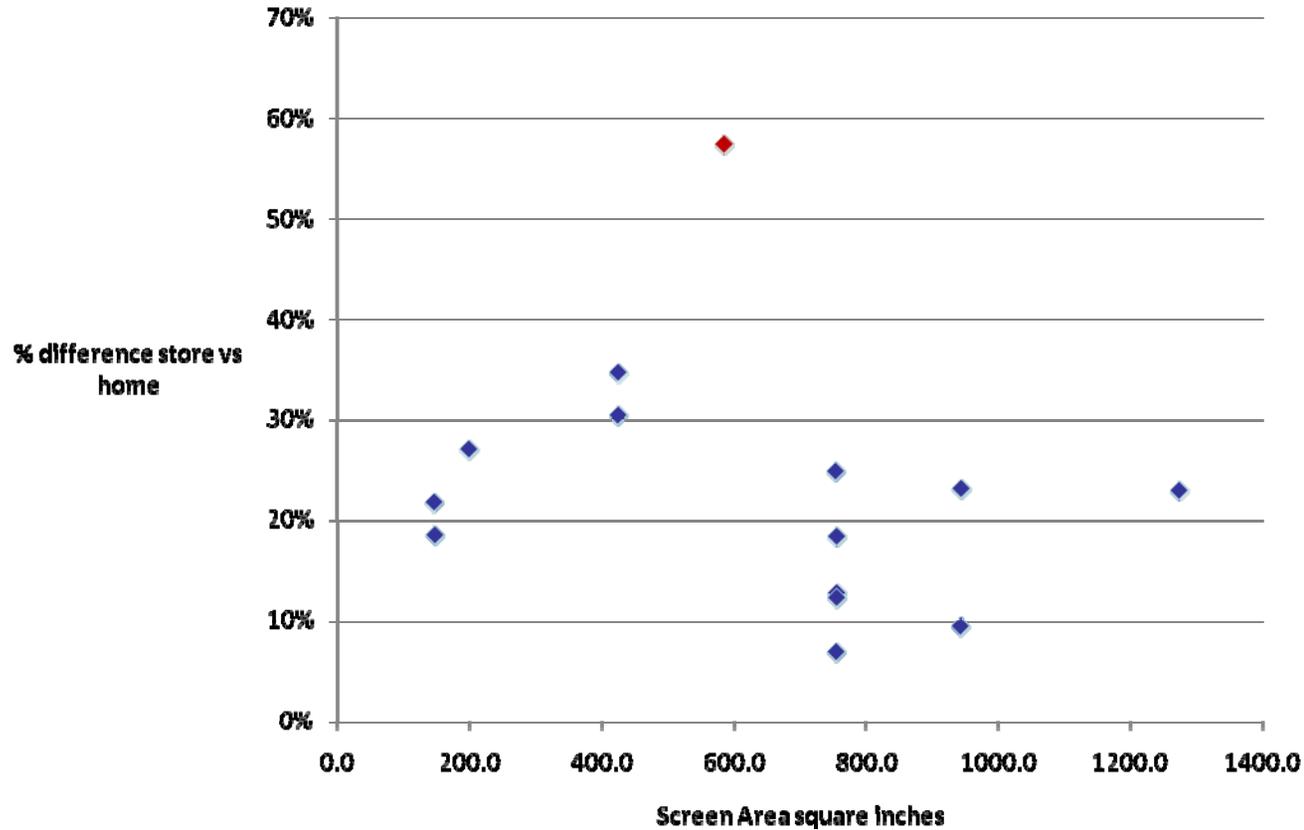


CONCLUSIONS

- Getting the settings right is critical to obtaining certainty in energy savings
- The proposal provided is consistent with EPA's method for reporting power use.
- We encourage ESTAR and other stakeholders, including FTC, to adopt this approach.



Appendix A



Average = 20.19%



Appendix A data

- Scrubbed repeated models to remove bias.
- Eliminated all data more than two standard deviations from mean (red point was 2.714 std deviations).
- Only 14 unique data points reported maximum on mode power vs Energy Star® reported power.

