

August 3, 2007

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Comments on TV Energy Draft Specification (Version 3.0)

Dear Ms. Kaplan:

Panasonic Corporation of North America (hereinafter “Panasonic”), a leader in the manufacture and sale of flat panel and other television technologies in the United States, appreciates the opportunity to comment on the “ENERGY STAR Version 3.0 Draft Eligibility Criteria for Televisions” document. Our comments focus on several key points in the draft, including the rationale and recommendations for five changes which we believe will improve the program: 1) using separate categories by TV technology; 2) recognizing the impact of picture resolution on energy use; 3) permitting standard mode settings for power measurements; 4) eliminating Internet content video signals; and, 5) excluding download acquisition mode at this time.

As a 7-time ENERGY STAR Award winner, Panasonic shares EPA and the Nation’s interest in the development of a robust, fair, and useful ENERGY STAR TV specification that will provide genuine benefits to both the environment and consumers. As currently drafted, however, we believe the proposed specification is at odds with EPA’s expressed desire to act in a “technology neutral” manner in order to recognize the top energy efficient TVs in the marketplace. The “one-size-fits-all” approach in the draft, which considers together all TV technologies, ignores their respective vast differences in design, functionality, performance, and price—indeed, also their prospects for future efficiency improvements.

Therefore, Panasonic urges the EPA to reconsider this approach and instead permit the various TV technologies--nearly all of which Panasonic manufactures--to compete fairly on energy efficiency in their respective market segments, recognizing the choice and value of differing screen sizes, configurations, and feature sets. Clear precedent exists for this alternate approach. For example, in the ENERGY STAR refrigerators’ category, the Department of Energy designed its program to include partial automatic defrost refrigerators, single door refrigerators, and compact refrigerators and freezers. In this instance different qualification values were applied across 18 distinct product classes.

With this objective in mind, Panasonic offers the following comments, which we believe would improve the current draft specification for this important program:

1) SEPARATE CATEGORIES BY TV TECHNOLOGIES -- By requiring all TV technologies to meet a single specification within just 13 months, many of today's newer and still-evolving, high performance technologies will be effectively shut out of the ENERGY STAR program. In turn, this would force many consumers to make the choice between optimal product performance and lower energy use. Panasonic respectfully suggests this is not the choice the EPA should posit to consumers, who want to do the right thing but may not be willing to sacrifice product performance and features. Instead, ENERGY STAR should remain a mark to help guide consumer choice, and not be one that is limited to older, sometimes less desirable and basic-features-only TV models and technologies.

For example, rear projection and some micro-device projection TVs use about the same amount of energy regardless of screen size. Thus, lumping these two technologies together with all others badly skews the draft's qualification formula in favor of technology that, frankly, is already—and in the future is likely more and more to be—taking a backseat to the rapidly growing popularity of the leading flat panel display technologies (*i.e.* plasma and LCD). While they are relatively energy efficient, rear-projection and some micro-device projection displays are often marked by performance characteristics (*e.g.* evenness of brightness and color) that diminish observably as the size of the display increases.

So, unless this particular technology is eliminated from the qualification formula, it is likely many consumers will forego the ENERGY STAR label in their desire to purchase the best possible picture quality, typically offered by flat panel [and, we believe, plasma] displays. The choice for consumers is evident in current retailer advertising circulars. One leading retailer (Circuit City, July 29<sup>th</sup> newspaper advertisement) offered only two of 30 available models of the rear/micro projection technology. Similarly, another leading retailer (Best Buy, July 29<sup>th</sup> advertisement) offered just four of 26 models in the rear/micro projection category. The clear and unequivocal consumer preference for flat panel TVs—whether measured by unit sales, dollar volumes or sales trends—is not reflected in the draft document's prospective ENERGY STAR qualifying roster of models, which is disproportionately populated with micro projection and CRT-technology models.

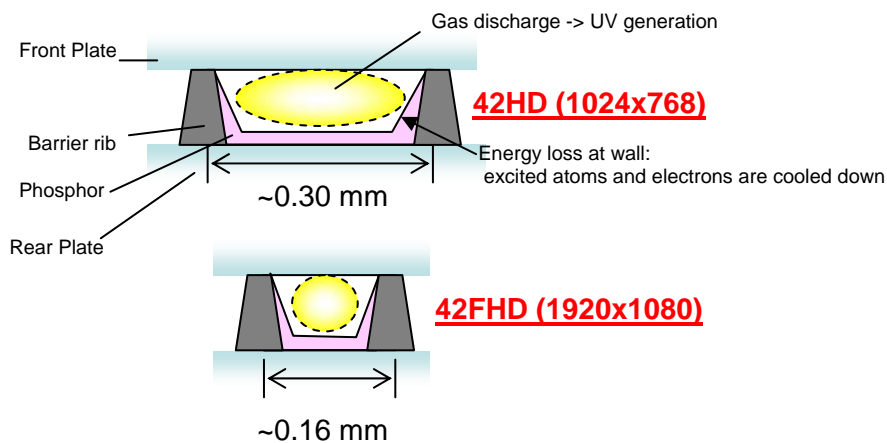
2) PICTURE RESOLUTION-- The draft document's ENERGY STAR TV qualification formula for "on mode" power ignores the direct correlation between display resolution and TV energy consumption. By the time the revised ENERGY STAR specification for TVs takes effect in the fall of 2008, it is highly probable that at least 25%--fully one quarter--of all TV units sold will be 1080p (or Full High Definition) picture resolution. These 1080p displays provide more than twice the resolution capability (as measured in pixels) of earlier flat panel displays (so-called '720p' displays, whose actual vertical pixels typically are 768p).

And as consumers purchase larger (flat panel) displays, they will continue to demand the highest possible picture resolution and increasingly shun lower resolution models. This consumer trend, as evidenced in current Display Search data, will have a direct impact on overall TV

energy consumption. To address consumer demand, Panasonic manufactures and sells 1080p resolution in all plasma model sizes of 42 to 58 inches. Increased energy consumption specifically attributable to the higher resolution ranges from 30% to 78%, depending on screen size. Yet the draft specification version 3.0 does not provide any additional allowance based upon resolution.

Please note that Panasonic recognizes both the rapid market transformation toward 1080p and the importance of making further improvements to the energy efficiency of its flat panel TVs, in particular the plasma models. Yet achieving improved energy efficiency for 1080p models of plasma, which itself is a much newer display technology than LCD, for example, is extremely challenging as luminous efficacy decreases by 40-50% due to the higher resolution and the demands it places upon the plasma display panel design.

#### HOW RESOLUTION AFFECTS EFFICACY OF PDP

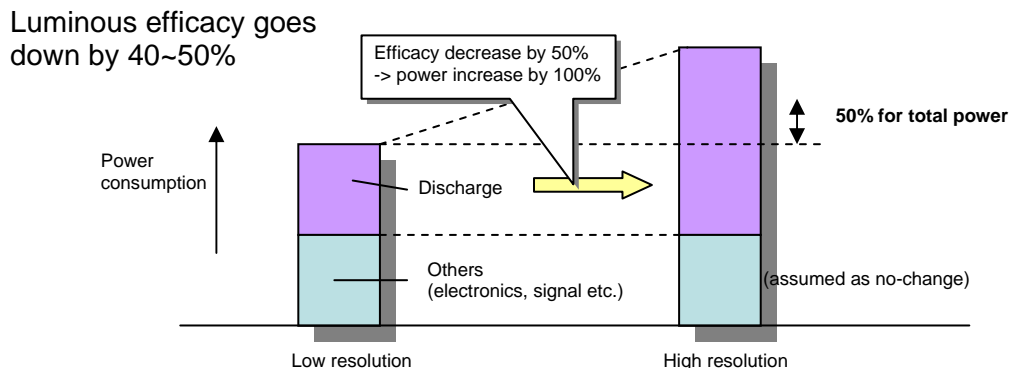


- Smaller discharge volume – increasing energy loss on the walls more energy is necessary to generate UV light
- Smaller aperture ratio – many barrier ribs (which does not emit light) in a unit area

Luminous efficacy goes down by 40~50%

Assuming the discharge power is 50% of the total, 50% lower efficacy means 50% greater total TV energy consumption.

#### HOW EFFICACY AFFECTS POWER OF PDP-TV



Assume discharge power as 50% of total (depending on set, but typical)  
-> 50% lower efficacy means 50% higher TV power

Therefore, Panasonic has an ultra-aggressive, 3-year target plan to dramatically improve the energy efficiency of our plasma TVs, particularly those in 1080p. Such improvements will necessitate major design enhancements and engineering breakthroughs that will take some years to complete. Among these improvements will be thinner barrier ribs, modified electrode configurations, higher concentrations of Xenon gas, and improved low voltage technologies. Again, Panasonic is working to achieve these design improvements but it will be a longer-term effort.

Nevertheless, if unchanged, the current draft specification would permit a disproportionate number of lower resolution or 720p TVs to qualify as ENERGY STAR. Again, in effect, this would be forcing consumers to choose between ENERGY STAR-labeled, lower-resolution models and non-ENERGY STAR-labeled, fully-featured high-resolution models.

At risk is the consumer perception of ENERGY STAR being associated with lower resolution, basic, and often older technology TVs. We believe this would represent the exact opposite direction in which the specification should be moving as we near the Nation's digital television transition in February 2009.

3) PICTURE SETTINGS -- Another important determinant in TV "on mode" power consumption is the "picture mode." Panasonic, along with most manufacturers, offers customers a number of picture setting options based on user picture preference. The picture mode allows users to control the picture brightness, which greatly affects the unit's energy consumption.

In the draft ENERGY STAR specification, EPA stipulates that measurements of “on mode” power consumption be made at “factory default” settings in order to capture “out-of-the-box” energy use. EPA instructs testers to ignore the IEC 62087 guidance that power-saving features be disabled. Yet EPA provides no specific direction on the IEC section on Picture Level Adjustment.

According to IEC 62087 Section 11.3.6, a TV’s activation menu can be applied toward the power consumption measurement. Thus, in the case where a picture setting mode must be chosen upon initial activation, the “standard” mode or equivalent shall be chosen for the qualifying measurement. In the case that no standard mode or equivalent exists, the first mode listed in the on-screen menu shall be selected and used to determine on-mode power consumption of the unit.

Panasonic believes EPA should include Section 11.3.6 in the ENERGY STAR TVs specification. This would encourage manufacturers to ship TVs which would require consumers to select the picture mode upon taking the unit out of the box and turning it on for the first time. Concurrent with this set-up election would be an advisory to the consumer about the benefits of operating the TV in “standard” mode. We strongly believe this approach would help drive far greater deployment of the energy-saving standard mode.

4) INTERNET CONTENT -- Another issue related to measurement procedures is EPA’s proposed use of Internet content video signals. Panasonic urges EPA to drop at this time any reference to Internet content from its current proposed methodology regarding use of static signals for testing. In EPA’s draft specification, the definition of qualifying products clearly describes products as being marketed “focusing on television [and not the Internet] as the primary function.”

The current use of TVs to view Internet content is very limited and to date no real usage data exist to permit proper weighting of viewing Internet content versus other TV viewing. Also, we believe the use of TVs for ‘video streaming’ is already captured in the draft specification, inasmuch as its average picture levels are very similar to dynamic broadcast content. Consequently, Panasonic urges EPA to not try to factor Internet content into ENERGY STAR energy use calculations at this time. As future data on TV internet usage patterns become available, EPA could issue subsequent revisions to ENERGY STAR’s test procedures.

5) DOWNLOAD ACQUISITION MODE -- Panasonic urges EPA to reconsider its 4-watt limit for download acquisition mode (“DAM”). A single hour of downloading over each 8-hour period is unrealistic, based on many current TV designs, with the exact amount of time being determined by firms supplying electronic program guides, not by TV manufacturers themselves. In many cases, more than three hours of downloading content is possible. Consequently, a more realistic limit is very difficult to determine at this time. Therefore, we urge EPA to reconsider the DAM issue in a subsequent ENERGY STAR TV specification and not include it in this proposal.

As earlier noted, the television market is undergoing dramatic and exciting changes. Consumers, as full participants in the digital transformation, are looking to Panasonic and other leading manufacturers to provide the highest quality pictures and features on their TVs. For many consumers, plasma display TVs are synonymous with high performance. And consumers seeking high performance in their new HDTVs should not be forced to accept lower featured, less desirable TVs in order to achieve energy savings. Panasonic firmly believes a balance can be struck whereby energy efficiency can be made both attainable and attractive to consumers without sacrificing TV performance or features. As TV technologies continue to evolve and, in the case of one of the newest—plasma—improve over successive generations, we anticipate ever more energy efficient models will reach the marketplace. Therefore, as our company and others move rapidly in this direction, we ask that EPA help facilitate this process through these recommended revisions to the ENERGY STAR specification in order to encourage, not constrain, continued design improvements.

We appreciate your consideration of our comments, and we would be pleased to discuss them further, at your convenience.

Sincerely,

Peter M. Fannon  
Vice President  
Technology Policy, Government & Regulation

cc: Mr. Stephen L. Johnson, Administrator, EPA  
Ms. Kathleen B. Hogan, Director, Climate Protection Partnership Division, EPA  
Ms. Mehernaz Polad, ICF (ENERGY STAR contractor)