



January 11, 2008

Jackalyne Pfannenstiel, Chairman and Presiding Member
Art Rosenfeld, Commissioner and Associate Member
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Request for Commencement of Rulemaking to Set Minimum Standards for
Televisions in the On-Mode.

Dear Chairman Pfannenstiel and Commissioner Rosenfeld:

Pursuant to the Notice of Committee Workshop RE 2008 Rulemaking Proceedings on Appliance Efficiency Regulations (Docket No. 07-AAER-3), we are writing to request the California Energy Commission to conduct a rulemaking to amend existing minimum efficiency standards for televisions. As you know, these products are regulated by the Commission pursuant to Section 25402 of the California Public Resources Code. Initial standards for televisions, which set minimum efficiency requirements for televisions in the standby mode, took effect on January 1, 2006.

We respectfully request that the Commission commence a rulemaking to set minimum standards for the efficiency of televisions in the on-mode. We ask you to begin this rulemaking this year under Docket No. 07-AAER-3

3M is an international, science-based company with worldwide sales in 2006 of \$22.9 billion. 3M produces thousands of imaginative products and is a leader in scores of markets – from health care and highway safety to office products and energy-saving optical films for LCD displays. In 2004, 3M was named ENERGY STAR Partner of the Year by the EPA and the U.S. Department of Energy. The ENERGY STAR award recognizes 3M's commitment to energy efficiency and for integrating energy management into the company's operational strategies. "Partner of the Year" is ENERGY STAR's highest industrial honor.

As the Commission has recognized, "Energy efficiency tops the list of strategies for accomplishing California's significant greenhouse gas reduction targets because it is a relatively

fast and inexpensive solution. In fact, it has what is called “negative abatement value” — by carrying out energy efficiency actions, energy consumers would both cut emissions and save money.” (2007 IEPR, p. 96) However, the Commission added, “If energy efficiency is to play the critical roles envisioned for it under AB 32, the state must support expanded efforts in all programs. Scenario analyses have demonstrated that cost-effective efficiency programs can allow California to achieve at least a proportional reduction of carbon emissions from the electric sector. These analyses highlight the need to capture *all cost-effective energy efficiency.*” (*Id.*, emphasis in original)

We respectfully submit that the Commission has not captured all cost-efficiency energy efficiency from a category of appliance that is present in almost every home in California – the television.

Request for Rulemaking

The Notice of Committee Workshop announced that the California Energy Commission’s Efficiency Committee (Chairman Jackalyne Pfannenstiel, presiding member, and Commissioner Art Rosenfeld, associate member) will conduct a workshop to seek comments from interested parties regarding the scope of the next rulemaking to amend the Appliance Efficiency Regulations (Title 20, California Code of Regulations, Section 1601 through Section 1608). The notice solicited proposals from the public regarding possible new or amended appliance standards that offer additional significant energy savings, to be considered in the initial rulemaking or subsequent phases.

The Notice states “that proposals for new standards must include complete details on the nature of the standards, and the energy and cost savings that would result, in order to be considered.” However, the notice does not explain what information constitutes “complete details”. We assume that the Committee is requesting information necessary to show that a proposed new standard would meet the requirements of California law. California law requires that the Energy Commission’s appliance efficiency standards (1) apply to appliances that use a significant amount of energy on a statewide basis, (2) be based on feasible and attainable efficiencies or feasible improved efficiencies, and (3) be cost-effective based on a reasonable use pattern (i.e., not result in added total costs to the consumer, considering both any increased costs of the efficiency improvement and the reduced utility bill costs resulting from the improved efficiency, over the design life of the appliance). [Public Resources Code Section 25402(c)(1).]

In this letter, we will propose a new standard and show how the three key criteria for a new standard are met.

The Proposed Standard

We propose that California adopt as a minimum efficiency standard for televisions in the on-mode, the Final Energy Star TV products specification that will be issued in February 2008. We propose that the California standard be made effective in 2009.

On December 17, 2007 the U.S. Environmental Protection Agency (EPA) issued the Draft Final Version 3.0 ENERGY STAR TV products specification. EPA initiated its review of the specification for Television products in January 2006 and has issued two prior versions of the specification for review and comment. The specification has undergone extensive review by numerous industry and consumer representatives. Comments on the Final Draft are due by January 18, 2008 and EPA intends to distribute the Final Version 3.0 ENERGY STAR TV products specification to stakeholders on February 4, 2008. The proposed effective date of the specification is November 1, 2008.

Under the Draft Final Version of the specification, to qualify as ENERGY STAR, all TVs, TV Combination Units, Television Monitors, and Component Television Units must not exceed the maximum On Mode power consumption (P_{Max}) found from the equations in Table 1, based on the unit's native vertical resolution and visible screen area. As an example, maximum allowed power consumption for TV products of various screen sizes is provided below in Table 2.

Table 1: On Mode Power Level Requirements for TV Products¹

Tier 1: Effective November 1, 2008		Tier 2: Effective September 1, 2010		
Screen Area	Maximum On Mode Power Consumption (A expressed in inches ²) Maximum On Mode Power Consumption (A expressed in cm ²)	Maximum On Mode Power Consumption (A expressed in inches ²)	Maximum On Mode Power Consumption (A expressed in inches ²)	Maximum On Mode Power Consumption (A expressed in cm ²)
Non-High Definition TVs (i.e. ≤ 480 Native Vertical Resolution)				
All Screen Areas	$P_{Max} = 0.120 * A + 25$	$P_{Max} = 0.01860 * A + 25$	TBD	TBD
High Definition and Full High Definition TVs (i.e. > 480 Native Vertical Resolution)				
A < 680 inch ² (<	$P_{Max} = 0.200 * A + 32$	$P_{Max} = 0.03100 * A + 32$	TBD	TBD

¹ The maximum On Mode power consumption is expressed in watts and rounded to the nearest whole number. In the following equations, A is the viewable screen area of the product, found by multiplying the display width by the display height. Equations are provided in standard units (inches²) as well as in the metric equivalent (cm²).

4,387 cm ²)				
680 inch ² ≤ A < 1068 inch ² (4,387 cm ² ≤ A < 6,890 cm ²)	$P_{Max} = 0.240 * A + 27$	$P_{Max} = 0.03720 * A + 27$	TBD	TBD
A ≥ 1068 inch ² (≥ 6,890 cm ²)	$P_{Max} = 0.156 * A + 151$	$P_{Max} = 0.02418 * A + 151$	TBD	TBD

Table 2: Average Tier 1 On Mode Power Level Requirements for Example TV Screen Sizes

Viewable Diagonal Screen Size (inches)	Aspect Ratio	Viewable Screen Size in Inches	Screen Area in Inches (cm ²)	Maximum on Mode Power in Watts	
				480 Lines of Native Vertical Resolution	768 or 1080 Lines of Native Vertical Resolution
20	16.9	17.4 x 9.8	170.5 (1,100)	45	66
32	16.9	27.9 x 15.7	438.0 (2,826)	78	120
42	16.9	36.6 x 20.6	754.0 (4,865)	115	208
50	16.9	43.6 x 24.5	1068.2 (6,892)	153	318
60	16.9	52.3 x 29.4	1537.6 (9,920)	210	391

Significant Energy Consumption of Televisions

There is no question that televisions consume a significant amount of energy on a statewide basis. A Preliminary Television Market and Industry Research paper prepared for EPA in January 2006 found that:

“Even though televisions continue to spend the majority of time in standby mode, the energy consumed by them for the few hours a day that they are active accounts for 80 – 95% of their annual energy consumption. In fact, some of the larger TVs on the market today use as much energy as a new refrigerator (e.g., 500 kWh/year). Further, EPA estimates that currently, all US televisions consume 69

TWh/year, costing consumers \$5 billion annually to power their sets. In 2010, it is projected that this number will rise by approximately 75% and US televisions will consume 121 TWh/year, costing consumers over \$8 billion annually to power their sets.” (pp.5-6)

Because California has 10% of the nation’s population, these numbers suggest that California consumes approximately 7 TWH/year of electricity to power televisions and that this number will rise to approximately 12 TWH/year in 2010.

Technical Feasibility

The proposed EPA Energy Star Standards for televisions are based on feasible and attainable efficiencies. Among the guiding principles of the Energy Star program is that the specifications are (1) Cost-effective (see below), (2) that performance is maintained or enhanced, (3) efficiency is achievable with nonproprietary technology, and (4) that product differentiation and testing are feasible. EPA estimates that 27% of models will meet this standard and that 71% of the manufacturers represented in EPA’s data set have products that could currently meet the proposed ENERGY STAR On Mode requirements.² If this many products can meet these higher efficiency levels, then clearly these standards are feasible and attainable.

Cost-Effectiveness

EPA finds the cumulative five year savings (2008-2012) to be \$657 million (2006 \$), assuming just 25% market penetration of ENERGY STAR televisions. The energy saved nationally in this 5 year period would be 7,051 million kWh – roughly equivalent to the energy needed to power Utah for a year and the carbon saved nationally would be 1.3 million metric tons.

For the LCD TV industry, there are multiple factors which affect the energy efficiency of a television including resolution, panel technology, bulb technology, dynamic dimming technology, response rate, ambient light technology, etc.

Incremental costs to meet the Energy Star standard are difficult to assess due to the variety of factors that negatively and positively impact energy efficiency. However, the fact that 27% of commercially available televisions meet the Energy Star standard is an indication that the associated costs have market acceptance.

² Final Draft, p. 6

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There are numerous technologies available which enable set-makers to reach the Energy Star standards. 3M is willing to provide additional details on available technologies and our estimates on incremental costs to assist in this analysis.

Conclusion

There is compelling evidence that a new television standard will save a significant amount of energy, is technologically feasible and cost-effective. Moreover, the magnitude of savings is substantially greater than the estimated savings from the current standard for televisions in the standby mode. Given these facts, we respectfully request that this request for a rulemaking be granted and that you begin a new rulemaking for televisions in the current docket.

Sincerely,



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