Consumer Technology Association™

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March 5, 2019

Senator Norman Needleman and Representative David Arconti
Chairs, Energy and Technology Committee
Legislative Office Building, Room 3900
Hartford, CT 06106
In-person and Via Email to ETtestimony@cga.ct.gov

Re: CTA Comments on HB No. 7151 – An Act Concerning Energy Efficiency Standards

Dear Senator Needleman, Representative Arconti and Members of the Energy and Technology Committee:

The Consumer Technology Association™ (CTA) appreciates the opportunity to provide comments to the Energy and Technology Committee regarding specific components of House Bill No. 7151 (H.B. No. 7151) that are problematic. **CTA respectfully requests the removal of outdated energy efficiency standards for consumer electronics products (specifically compact audio players, digital versatile disc players, digital versatile disc recorders, and televisions), the exclusion of computers and computer monitors, and removal of the broad authority language granting the Connecticut Commissioner of Energy and Environmental Protection the authority to adopt regulations for any products, including consumer electronics.** While CTA appreciates the Legislature's leadership in the area of energy efficiency, the approach to energy efficiency achievements outlined is H.B. No. 7151 is concerning given policies and initiatives currently exist for consumer electronics that result in real savings for consumers, while at the same time protecting consumer choice and industry innovation.

CTA is the trade association representing the U.S. consumer technology industry, which supports more than 15 million U.S. jobs. Our membership includes more than 2,200 companies – 80 percent are small businesses and startups; others are among the world's best known manufacturer and retail brands. For many years, CTA has advanced energy efficiency with a variety of initiatives related to public policy, consumer education, research and analysis, and industry standards. Regarding public policy, we advocate for approaches that are national, voluntary, market-oriented, globally harmonized, flexible to keep pace with technology, and friendly to innovation and economic growth. Our industry has achieved real results – more consumer products than ever are using *less energy*. We continue to look forward, not backwards, in terms of energy efficiency achievements.

CTA does not support the authority granted in H.B. No. 7151. Consumer technology products are already an energy efficiency success story as demonstrated in our comments below. We object to the language granting authority to the Commissioner of Energy and Environmental Protection to adopt regulations to establish minimum energy efficiency standards for any product, including consumer electronics. This approach would not necessarily result in more energy efficiency savings for Connecticut consumers but it would increase the regulatory burden for industry.

H.B. No. 1715 grants both the existing and new authority to the Department to establish mandatory regulations for virtually any electronic or electrical product. For high tech products, such government standards are not only damaging to technology innovation and design, they ultimately harm consumers and limit their choice of consumer electronics products, features and services. CTA believes that it would be more prudent for the Legislature to retain oversight on the products that it determines need to meet minimum energy efficiency standards, if any.

Additionally, CTA does not support Section 1(d)(3)(B) which requires consultation with "other interstate energy efficiency collaborative organizations" outside of the Multi-State Appliance Collaborative already listed in the legislation. It is assumed that the Department has the expertise on staff to determine necessary energy efficiency standards for products and that cross-collaboration with other states is all that is necessary. The inclusion of this language opens the door for any non-governmental organization to be consulted without similar deference given to the industry which would ultimately be regulated under the law.

Consumer electronics are already an energy efficiency success story. A recent study commissioned by CTA and produced by Fraunhofer USA finds the number of tech devices in U.S. homes has increased 21 percent since 2010, but those devices now account for *25 percent less* residential energy consumption over that same time.[1] This landmark energy efficiency achievement is due to the consumer tech industry's investments in lightweight materials and energy efficient technologies, as well as the convergence of multi-functional devices and continuous innovation. These achievements weren't accomplished through mandated state or federal requirements.

The California standards currently in Connecticut law and found in Section 1(d)(1)(P through R) of H.B. No. 7151 for compact audio players, digital versatile disc players, digital versatile disc recorders, and televisions were outdated when they were adopted in California a decade ago. Several years ago, CTA (at the time under the name Consumer Electronics Association) hired third-party consultants to review the California Energy Commission (CEC) justifications for its regulations for consumer electronics. Excerpts from those reports and CTA comments with key components highlighted in yellow are enclosed with these comments. The study found that, "Most of the original analyses use outdated power draw values to develop an energy consumption baseline that, in many cases, does not appear to reflect the performance of typical new devices." As such, the study found that the standards set by CEC would not yield the projected energy and cost savings originally intended by the regulations.

Additionally, California's regulations have not proven to be the real driver of energy efficiency for these consumer electronics. Rather, the major strides in energy efficiency are driven by competition, consumer demand, and voluntary, market-oriented programs such as ENERGY STAR. Televisions are an excellent example of consumer technology's commitment and achievements. A television's annual in-home energy consumption declined 30 percent from 2013 to 2017 – the average cost to power a television in the U.S. is now less than five cents a day.[2] LCDs alone consume 76 percent less energy (per screen area) in 2015

[1] Urban, Roth, Singh, & Howes. "Energy Consumption of Consumer Electronics in U.S. Homes in 2017". December 2017. Available at: http://www.cta.tech/cta/media/policyImages/policyPDFs/Energy-Consumption-of-Consumer-Electronics-in-U-S-Homes-in-2017.pdf

[2] Urban, Roth, Singh & Howes. December 2017.

than they did in 2003.[3] These achievements are yielding real savings for consumers without government mandates.

The current law and Section 1(d)(3) require that any efficiency standards adopted:

(i) would serve to promote energy conservation in the state,
(ii) would be cost-effective for consumers who purchase and use such new products, and
(iii) would not impose an unreasonable burden on Connecticut businesses.

It is worth noting that the existing requirements for compact audio players, digital versatile disc players, digital versatile disc recorders, and televisions do place an unnecessary regulatory burden on businesses without promoting energy conservation or delivering any energy efficiency savings for Connecticut consumers as these products have moved far beyond the California standards which were outdated at the time of their adoption in both California and Connecticut.

A similar argument can be made for the requirements outlined in Section 1(k)(1)(G) requiring computers and computer monitors to meet the CEC requirements recently adopted. The products sold in the California market will be sold to Connecticut consumers as well. The consumer technology industry does not manufacture or market products to specific states. Rather, they manufacture and market products on a U.S. or even North American market ensuring that the energy efficiency savings experienced by Californians will also be gained by Connecticut consumers. Copying of the California standards does not yield energy savings but rather increases compliance costs for manufacturers. As an industry, CTA's members would prefer to focus resources where we can make meaningful progress on energy efficiency and continue to look forward, not spend resources demonstrating compliance for products already available to Connecticut consumers.

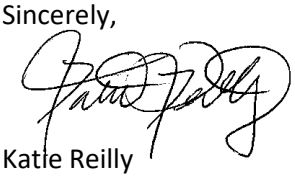
Conclusion: CTA and its members are firmly committed to energy efficiency across our industry. For the past 15 years, the industry has worked aggressively on energy efficiency. We're one of the only sectors that actively tracks the energy usage of our products as quantified in CTA's triennial energy efficiency studies. We continue to work with policymakers across the U.S. and globally to urge innovation-friendly, voluntary and market-oriented approaches to energy efficiency for consumer electronics that have proven successful. We've also developed new approaches –industry-led voluntary agreements– that go beyond existing programs to capture additional energy savings in rapidly-evolving product categories.

Industry and policymakers share the goal of energy efficiency and conservation, but there are many paths to that goal. We do not believe that the approach outlined in H.B. No. 7151 is the path to get there. CTA respectfully requests the Committee remove the standards for compact audio players, digital versatile disc players, digital versatile disc recorders, televisions, computers and computer monitors as well as the language granting authority to the Connecticut Department of Energy and Environmental Protection to adopt regulations for any product, including consumer electronic products.

[3] Urban & Roth. "LCD Television Power Draw Trends from 2003 to 2015". May 2017. Available at: http://www.cta.tech/cta/media/policyImages/policyPDFs/Fraunhofer-LCD-TV-Power-Draw-Trends-FINAL.pdf

Please do not hesitate to contact me with any questions or requests for additional information.

Sincerely,



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Enclosure

CC: Senator John W. Fonfara, Vice Chair
Representative Raghib Allie-Brennan, Vice Chair
Senator Paul M. Formica, Ranking Member
Representative Charles J. Ferraro, Ranking Member
Representative Tim Ackert
Representative Bill Buckbee
Representative Holly H. Cheeseman
Representative Christopher David
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Representative Stephen R. Meskers
Representative Ronald A. Napoli
Representative Chris Perone
Representative William A. Petit
Representative John E. Piscopo
Representative Jonathan Steinberg
Representative Peter A. Tercyak
Representative Michael Winkler

Excerpts from a third-party review of CEC's justification for its regulations for consumer audio and video products (CEC rulemaking in 2005-2006)

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Innovation since 1886

Assessment of Analyses Performed for the California Energy Efficiency Regulations for Consumer Electronics Products

Final Report to: Consumer Electronics Association (CEA)

2 February 2006

Report prepared by: TIAX LLC
Reference D5503

Excerpts from a third-party review of CEC's justification for its regulations for consumer audio and video products (CEC rulemaking in 2005-2006)

3. Conclusions and Recommendations

TIAX has performed an assessment of the cost-effectiveness analyses used to support the California energy efficiency regulations promulgated for televisions, DVD players and recorders, compact audio products, digital television adapters (DTAs), and external power supplies (EPSs). This section summarizes the key findings of the assessment and recommendations based on the findings.

3.1. Conclusions

The key findings of the study are organized by device type. In all cases, the studies cited by the CEC in the development of the standards are referred to as "the original analysis," while TIAX's analysis is referred to as the "re-analysis."

3.1.1. Consumer Electronics – Televisions, Compact Audio Products, DVD Players & Recorders, Digital Television Adapters

Most of the original analyses use outdated power draw values to develop an energy-consumption baseline that, in many cases, does not appear to reflect the performance of typical new devices. Furthermore, the validity of the incremental cost estimates for non-compliant televisions, DVD players and recorders, compact audio products and DTAs cannot be assessed because the original analyses do not provide citations for the source of the estimates, nor do they lay out the design changes or design path applied to meet the standard. This basic flaw precludes meaningful cost-effectiveness assessments for these products, i.e., it is not possible to conclude that the standards are either cost-effective or not cost-effective.

Televisions: The original analysis relied on older power draw data that does not represent typical new products. A more comprehensive and recent data set yields a lower value (3.9W versus 7.3W) that decreases the first-year energy savings by about 70%, from 68GWh to 21GWh. In addition, no source or explanation is provided for the $3 incremental cost for a typical new non-compliant unit to meet the standard, nor is a design path outlined to achieve the savings that would enable assessment of incremental cost estimate. Consequently, TIAX believes that an accurate and verifiable incremental cost to achieve the standard for non-compliant units is not yet known and, therefore, a conclusion that the television standby power standard is cost-effective is premature.

Compact Audio: The original analysis relied on a limited sample (19 units) of measurements from 1999 or earlier that do not appear to represent the standby power draw characteristics of typical new compact audio products. Notably, the EnergyStar® program for compact audio products came into existence in 1999 and accounted for 28% of units sold in 2004. Most EnergyStar® units consumed less than 1W in standby mode

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compared to the 9.8W average used in the original database. Although it has significant uncertainty, an initial best-estimate of 3W average standby power draw decreases the estimated first year energy savings by about a factor of ten, from 56GWh to 5GWh. The savings estimates also have further uncertainty because they rely upon a usage estimate developed from a statistically non-significant survey (30 people at LBNL). Furthermore, no source or explanation is provided for the estimated $1 incremental cost for a typical new non-compliant unit to meet the 2W standby power standard, nor is a design path outlined to achieve the savings that would enable assessment of the incremental cost estimate. Consequently, TIAX believes that the incremental cost to achieve the standard for non-compliant units is not yet known. This and the high uncertainty in the per-unit energy savings of the standard, precludes a conclusion that the compact audio product standards are cost-effective or are not cost-effective.

DVD Players and Recorders: The original analysis relied on several dated or potentially flawed assumptions that bring into question the projected energy savings and cost-effectiveness of the standard.

- *Standby Power Draw* –The original analysis uses values measured in 1999 or earlier for a limited number of units (20). Since 1999, the installed base of DVD players and recorders has increased approximately 15-fold. Furthermore, about 62% of units sold in 2004 were EnergyStar®-compliant units that draw an average of about 1W as compared to the 4.2W level used for the original analysis. Thus, the standard will not achieve any energy savings for the majority of DVD players and recorders sold.
- *Annual Hours in Standby Mode* – The original analysis uses a rough assumption developed without data. A survey conducted since then suggests that the annual hours may be overestimated by approximately a factor of two.
- *Energy Savings* – Based upon the re-analysis of standby power draw and annual hours in standby mode values, TIAX estimates that the standard will realize approximately 1/3rd of the projected first-year savings, or 4GWh[39].
- *Incremental Cost* – No source or explanation is provided for the $1 incremental cost estimate, nor is a design path outlined to achieve the savings that would enable assessment of the incremental cost estimate. Consequently, TIAX believes that the incremental cost to achieve the standard for non-compliant units is not yet known. This precludes a meaningful cost-effectiveness assessment and questions the CEC conclusion that the standards are cost-effective.

[39] A more precipitous decrease in energy savings does not occur because the annual sales of DVD players and recorders in California increased by more than 50%.

Excerpts from a third-party review of CEC's justification for its TV regulations (CEC rulemaking in 2009)

The September 2009 Regulations Proposed by the California Energy Commission: 1) fail to satisfy the consumer cost standard imposed by the California Public Resources Code; and 2) are likely to result in increased costs to California consumers

C. Paul Wazzan, Ph.D.*

Dawn Eash, M.S.

Abstract

The California Energy Commission ("CEC") seeks to impose on-mode standards for power consumption of televisions (*e.g.,* watts used) subject to Section 25402(c) of the California Public Resources Code ("CPRC"). The CPRC requires that standards must "not result in any added total costs to the consumer over the design life of the appliances concerned." In September 2009, the CEC proposed regulations that allegedly would result in consumers saving $8.1 billion in energy costs. We find that the CEC analysis suffers from grave computational and conceptual errors. We further find not only are consumers unlikely to save dollars from reduced energy costs; they are rather more likely to incur dollar costs and to suffer from reduced access to technologies and innovations.

November 2, 2009

*This paper was commissioned by the Consumer Electronics Association. The authors are with LECG in Los Angeles, CA. Corresponding author is Wazzan who can be reached at 310-556-0622 or pwazzan@lecg.com.

Excerpts from CEA comments to CEC regarding CEC's TV regulations (CEC rulemaking in 2009)

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Via e-mail
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November 2, 2009

California Energy Commission
Docket No. 09-AAER-1C
Docket Unit
1516 Ninth Street, Mail Station 4
Sacramento, CA 95814-5504

Subject: Comments Regarding Draft 45-Day Language on Appliance Efficiency Standards for Televisions and Related Documents [Docket No. 09-AAER-1C]

To the Members of the California Energy Commission:

The Consumer Electronics Association ("CEA") respectfully submits these comments in opposition to the Notice of Proposed Action, Proposed Amendments to Appliance Efficiency Regulations, CEC Docket No. 09-AAER-1C (Sept. 18, 2009) ("NOPA").

CEA opposes the Commission's mandatory performance-based restrictions on energy consumption as detrimental to innovation, consumers, and industry. The Commission bases its proposed regulations on a stacked deck consisting of demonstrably false assumptions, admittedly stale and outmoded data, basic mathematical errors, and conceptual mistakes, that both exaggerate the "problem" to be solved and overestimate the potential energy savings. The regulations violate California law. They will cost consumers far more than they may save and will interfere with consumer enjoyment of one of today's most dynamic and desired products.

The regulations are unnecessary. Energy consumption by today's digital television models approximates the energy required for two light bulbs. That's it: two average light bulbs. And through continuous improvements, manufacturers are bringing those levels even lower. Contrary to the disinformation spread by certain proponents of regulation, digital TVs are hardly the electronic equivalent of gas-guzzling Hummers.

CE manufacturers already have dramatically reduced the amount of energy used by digital televisions – without regulation. Starting years before the CEC began investigating potential TV energy consumption regulations, consumer electronic ("CE") manufacturers

NRDC, "Cable and Satellite Set-Top Boxes: Opportunities for Energy Savings" March 2005 at 2.[4]

A more credible source, the Energy Star website, cites a figure far smaller than the 10 percent figure relied upon by the Commission: "There are about 275 million TVs currently in use in the U.S., consuming over 50 billion kWh of energy each year — or 4 percent of all households' electricity use."[5]

In short, the Staff Report overstates the magnitude of TV energy consumption (*i.e.*, the reason supporting its desired regulation) by approximately 150%. This error fundamentally skews the rest of the Report. By overstating the amount of actual energy consumption, the Report begins the debate by uncritically assuming "facts" most favorable to regulation. Thus, the Staff Report proceeds from assumptions highly prejudicial to TV manufacturers and consumers, who are being asked to shoulder the cost and burden of the regulations. Had the Report proceeded from a more credible assessment, or from actual evidence, it would have been clear that the magnitude of the problem was not nearly so great as to justify a draconian regulatory mandate.

B. The data used by the CEC to support the regulations are stale and out of date.

Throughout the NOPA and the Staff Report, the CEC cites the tremendous strides made by consumer electronics manufacturers in voluntarily reducing the energy consumption of digital televisions. As noted above, voluntary efforts from December 2007 to October 2009 have improved the energy efficiency of digital TVs by more than 41 percent. While this too begs the question of why any regulation is needed, it highlights a critical flaw in the CEC's methodology. To estimate potential energy savings with any reasonable degree of accuracy, the CEC should rely on current data reflecting the effects of these voluntary efforts. But to the contrary, the CEC continues to use data that is long out of date. Consequently, the CEC grossly exaggerates both the extent of the problem it claims to solve, and the alleged potential energy savings that it claims would result from regulation.

The primary source for CEC's conclusions as to the potential savings from the regulations is, again, the July 3, 2008 CASE paper from Pacific Gas and Electric. While CASE is now more than one year old, CASE further relies on data sets that have not kept pace with current products. For example, the PG&E CASE paper:

- Uses energy tests performed by the online technology site, CNET. While the CNET site may provide valuable information for consumers considering purchasing a

[4] Indeed, not even the NRDC apparently stands behind their 10% claim. An August 2009 NRDC presentation to California legislators claims that TV energy consumption is ">5%" -- again with no citations.

[5] *See* http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=TV

particular model of television, the site does not supply statistical data that reasonably could be relied upon by regulators. The CNET data set includes TVs that may be as old as 2004-2005 model TVs. As CNET's current website states, "This chart contains 150 TVs tested by CNET for power consumption between roughly January 2006 and April 2009." http://reviews.cnet.com/green-tech/tv-consumption-chart/?tag=nav Tests performed in January 2006 necessarily would have included older model TVs built before Energy Star 3.0. And obviously, the July 2008 CASE paper could not have included any of the recent TV models that achieved better energy performance.

- Cites to a data set from the UK Market Transformation Programme, titled "An Energy Efficiency Index for Televisions" from February 12, 2007, which also included TVs marketed years before Energy Star 3.0. Although the data for this set came from manufacturers, the authors observed that it was likely that TV energy use was not measured using consistent standards.
- Neglects to indicate that the data PG&E relied upon do not test TVs in the same way. Many of the tests could not have been conducted under the same standard as the Commission now uses, inasmuch as IEC 62087 did not even exist in a first Committee Draft until March 2007, and was not published until October 2008.
- Estimates TV purchasing trends using a 2007 study from a consulting group, "DisplaySearch Global TV Shipment and Forecast Report"
- Admits that specific TV models may have been used more than once in compiling its figures. There is no identification of which models, what types of TVs, or what results were used in the calculations. CASE at 7.[6]
- Admits that its savings estimates do not account for natural market improvements of nonstandard units, or corresponding efficiency improvements of the TVs that do qualify under proposed standards.
- Concedes that the data plots based on these older TVs in Figure 3 of the paper are "not necessarily indicative performance for all plasma TVs on the market today and in the near future"; and notes further that even as of July 2008, many leading plasma manufacturers marketed TVs that satisfied energy standards. CASE at 11.
- Admits with respect to each of its calculations that its estimate of energy savings "does not account for natural market adoption of higher efficiency models" or the increasing prevalence of Energy Star model TVs. *See* CASE at 16; CASE Table 8 at p. 17; CASE Table 9 at p. 18; and CASE Table 10 at p. 19

Indeed, although the CEC Staff Report places its primary reliance on the CASE paper, on the front page of the CASE paper even PG&E itself warns against such reliance:

> "**Neither PG&E nor any of its employees makes any warranty,** express or implied; or assumes any legal liability or responsibility **for the accuracy, completeness or usefulness of any data, information, method, product, policy or process disclosed in this document**… ."

[6] While the CASE paper states that the complete annotated data set "is available to interested stakeholders upon request," PG&E has not provided that data to CEA despite written requests.

increasing prevalence of Energy Star model TVs. *See* CASE Table 8 at p. 17; Table 9 at p. 18; and Table 10 at p. 19.[8]

The CEC cannot fairly or objectively base crucial policy decisions on such facially inaccurate figures. TV manufacturers collectively have invested scores, if not hundreds, of millions of dollars to improve the energy performance of today's digital TVs. These manufacturers stepped up to the plate long before the Commission began this process. Manufacturers deserve to have their achievements recognized and accounted for by the CEC in hard, reasonable, and reliable numbers before the Commission decides that regulation is necessary or justified.

D. The Staff Report contains serious mathematical and conceptual errors that negate the essential findings claimed to support the regulations.

The essential finding of the CASE paper and accepted by the Staff Report – that the proposed regulations will save Californians $8.1 billion in energy costs – is wrong. Putting aside the demonstrable flaws in the underlying facts as described in the preceding sections, the number was miscalculated because of a fundamental mathematical error, and artificially inflated by a conceptual error. The specific errors and their consequences are detailed in the attached analysis by LECG, summarized below.

1. <u>The Staff Report's mathematical misinterpretation.</u>

The CASE paper estimates annual incremental energy savings which cumulate to 6.5 TWh per year. As noted above, the estimated savings themselves are inflated by use of a baseline that effectively assumes Energy Star TVs only came to market in 2011. Regardless of that bias, PG&E's estimated savings occur only in 2022, after a complete turnover of TVs that do not meet the regulatory mandates. The CEC misinterprets this finding and assumes that the annual cost savings for *each* year between 2011 and 2022 are 6.5 TWh per year.[9]

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[8] Further conceding the irrelevance of the CASE estimates, PG&E was compelled to raise the bar to its 2009 retailer rebate program because *too many televisions exceeded Energy Star standards by 15% or more*, far more quickly than PG&E expected. "The program started in January paying retailers $20 for each TV sold that is 15 percent more efficient than Energy Star, but it moved the target to 30 percent more efficient than Energy Star 'as we saw more and more products qualifying,' said Tim Michel, PG&E senior program manager." Consumer Electronics Daily, Nov. 2, 2009, at 2. Thus, while one reasonably can question PG&E's wisdom of limiting a program that successfully was reducing energy consumption, PG&E's actions further demonstrate the tremendous voluntary manufacturer response to energy savings.

[9] The California utilities acknowledge that the purported energy savings is achieved only in the final year, yet perpetuates the error by applying that savings to each prior year. *See* Utilities October 13, 2009 Support Letter: "The proposed TV standards will generate an estimated 6,515 GWh in energy savings annually *after all existing stock is replaced.* … The overall energy cost savings for our customers is expected to be *approximately $8.1 billion*." http://www.energy.ca.gov/appliances/2009_tvregs/documents/comments/California%20Utilities%20Joint%20Support%20Letter%20for%20TV%20Standards.pdf (emphasis added).