Subject: Comments Regarding Draft 45-Day Language on Appliance Efficiency Standards for Televisions and Related Documents

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.

Response:

These comments are not new and have been made repeatedly throughout this rulemaking and rejected, on the record.

CEC staff has reviewed the record, including research data, and technical analysis for the proposed television regulations and has determined that there is nothing in the record to support CEA's position that the Commission's mandatory performance-based restrictions on energy consumption is detrimental to innovation, consumers, and industry

CEA has not provided any evidence in the record that any of the innovations in the current market place for television would have been prohibited from being offered on television being sold today if the proposed standards were in effect. Some of these innovated technologies being sold today include internet TV's, IPod TV's, 3D TV's, and LED backlight LCD TV's.

The Energy Commission deliberately designed the efficiency standards to only limit energy use of the television's monitor, audio, and power supply energy consumption. This limitation is due to the standards required test procedure, which sends a specific signal to the television, and the resulting energy consumption due to this signal is measured. (See IEC 62087 test procedure) The test procedure specifically excludes any other signals from being transmitted to the television that would consume energy. As the record shows, no signals from any option such as internet TV's, IPod TV's, 3D TV's

are measured because these features are to be turned off during the test procedure. (See test method for IEC 62087: Features that are covered see sections 11.4.3-11.4.7. Features to be to turn off see section 11.4.5.).

The efficiency standards do not place any restrictions on a manufacturer as to how many innovated options they may include on their television, nor do they place restrictions on the energy consumption of any of these innovative features. Because of these facts in the record the Energy Commission has made a determination that the proposed regulations do not interfere with innovated options such as internet TV's, IPod TV's, 3D TV's.

One of the newest innovations now being marketed by manufacturers are LED backlighted LCD televisions. LED's are used as backlighting for the LCD panels replacing fluorescent lamp tubes that are used in most LCD televisions being sold today. The LED technology is extremely energy efficient and the record shows that these televisions far exceed the efficiency levels required by the 2013 Tier II efficiency standards. Another new innovated technology is from Sony who have developed very energy efficient high intensity florescent lamps to be used as backlighting for their LCD televisions. Neither of these new panel technologies could have been prevented from being developed for the market today because the efficiency standards test method requires that a specific signal be sent to the panels with the resulting energy consumption measured. Because these new panel technologies use less energy the resulting energy consumption measurements would only reflect the less energy consumed by these highly efficient technologies. The efficiency standards are performance based and there are no restrictions that would have prevented the manufacturing of LED back lighted LCD televisions, the high intensity florescent lamp backlighting, or any technology method the manufacturer chooses.

Even when speculating as to future innovations not yet thought of, the Energy Commission has determined that due to the nature of the test procedures, i.e., requiring energy consumption to be measured for a specific signal input with all other signal inputs turned off, the efficiency standards will not interfere with future innovations that may be developed by manufacturers. The Energy Commission has reviewed CEA's analysis on the Commission's energy savings estimates and consumer economic analysis. As discussed in more detail below CEA's analysis has misinterpreted the Energy Commission's energy savings estimates and consumer economic analysis.

Furthermore, CEA has wrongly used consumer credit card financing used to purchase a television as the discount rate in estimating the cost savings for the homeowner due to the energy savings from using a more efficient television. Although this error was pointed out to CEA during the legislative hearings on October 21, 2009, it was not fixed in the comments provide to the Energy Commission on November 3, 2009.[1] (**See Legislative Hearings DVD???)** CEA has not provided in the record any sales data, existing or projected to support their opinion the Energy Commission's estimates are not an accurate estimate of existing and projected television energy consumption and potential cost saving for the homeowner and the state.

In summary, the Energy Commission has not found any evidence to support CEA's claim that the Efficiency standards will be 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.

Response:

These comments are not new and have been made repeatedly throughout this rulemaking and rejected, on the record. There is nothing in the record supports that the proposed regulations are flawed, using obsolete data, and leading to overstated assumptions. The record shows that the proposed regulations are based on 2007 data from CNET, Market Transformation Program (MTP), Public Interest Energy Research (PIER), European Information and Technology industry Association (EICTA) as the baseline.[2] The record also shows that the baseline has been supplemented with new studies and data from ENERGY STAR and CNET. Staff has continued (latest date Oct. 30, 2009) to obtain the latest ENERGY STAR data to evaluate the credibility of the original baseline. Staff has determined that the new data not only adds support to the 2007 baseline but this data has strengthened the Commissions finding that proposed energy efficiency regulations are credible and feasible. This has been demonstrated by the fact the new data has also proved that the PG&E studies used for proposing standards were accurate and creditable. The assumptions used to model energy savings are widely used

[1] http://www.energy.ca.gov/appliances/2009_tvregs/documents/index.html
[2] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF Page 35

and accepted by scientific community.CEA statement is unsupported opinion, and CEA has not provided any evidence to support their opinion. [3]

The Energy Commission has determined that the new data has corroborated PG&E studies that were used for proposing standards were accurate and creditable. This has been demonstrated by the fact the new data has also proved that the PG&E studies used for proposing standards were accurate and creditable. The assumptions used to model energy savings are widely used and accepted by scientific community.CEA statement is unsupported opinion, and CEA has not provided any evidence to support their opinion. [4]

Furthermore the Energy Commission finds that the assumptions used to model energy savings in its studies are widely used and accepted by scientific community. CEA statements are not supported by facts in the record. CEA has not provided existing or projected sales data to support a conclusion that the Energy Commissions studies out-of-date and cannot be used or they are flawed and don't represent a reasonable estimate to support the adoption of the efficiency standards. [5]

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.

These comments are not new and have been made repeatedly throughout this rulemaking and rejected, on the record.

As required by Public Resources Code section 25402(c) the Energy Commission has established a record that shows that the proposed standards will save a significant amount on energy on a statewide basis. These estimates were based on estimated existing energy consumption for television and estimated potential energy savings using feasible existing technologies that are already in the market place.[6]

CEA has not provided to the record any past and estimated sales data to show that the Energy Commissions estimates are inaccurate are not based on credible data. CEA has not provided any evidence that the proposed standards, are not feasible using existing technologies on television being sold today, are not cost effective to the consumer and

[3] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF
[4] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF
[5] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF
[6] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF

do not save the homeowner energy. The record supports the Energy Commissions determination that the incremental cost to meet the proposed standards is negative or zero using existing feasible technologies.[7] Based on its record the Energy Commission has determined that consumers would benefit from the lower price of energy efficient televisions and reduced cost of their electric bill. [8]

In summary, the proposed television regulations comply with the Public Resources Code and the Administrative Procedures Act requirements. (See findings in NOPA and ISOR; Docket Number 09-AAER-1C) CEA's opinion that "The regulations violate California law" is not based on the facts that have been established in the record.

The record shows that efficiency technologies that are used in some of today's television if used on all television will not interfere with consumer enjoyment. CEA has not provided evidence that the television their members sell today that use efficiency technologies are interfering with the enjoyment of the consumers that bought those televisions.

CEA state that:

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.

Response:

Based on the facts and evidence in the record the Energy Commission has determined that proposed television regulations are necessary for California. They will save a significant amount of energy on a statewide basis, are based on feasible existing technologies and are cost effective for the consumer. (See Staff report pages xxx and (See findings in NOPA and ISOR; Docket Number 09-AAER-1C) After the proposed regulations Tier I and Tier II become effective California consumers will save approximately $1 billion a year. [9]

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[7] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF Page 14, paragraph 2.
[8] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF Page 15, paragraph 3.
[9] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF Page 15 Paragraph 3

The Energy Commission has determined that energy consumption of today televisions models are extremely high without the use of existing efficiency technologies. There are many examples in the data that show that current television models that are manufactured and sold in the market today consume excessive amount of energy.[10] CEA members Example: Panasonic submitted their comments and data in the record on November 2, 2009 [11] showing that many of their television models that are inefficient. CEA stated in their comments "television models approximates the energy required of two light bulbs" is misleading because it not specify what wattage (two 150 watt bulbs?) was considered and to what size television (15 inch TV?). The record clearly establishes that the average television is a 37 inch flat screen using 110-130 watts of energy. CEA has not provided any sales data to support their two light bulb analysis or to show that the Energy Commissions established record for average television size and energy consumption is not a reasonable estimate for the proposed efficiency standards.

CEA statement that through continuous improvements, manufacturers are bringing those levels even lower has not been supported by existing and estimated future sales data. As the record shows the current trend for efficiency improvement in television, using Energy Star data is flat and it supports a reasonable conclusion that the market is not removing the least efficient televisions.

CEA stated in their comments "Contrary to the disinformation spread by certain proponents of regulation, digital TVs are hardly the electronic equivalent of gas-guzzling Hummers."

These comments are not new and have been made repeatedly throughout this rulemaking and rejected, on the record. CEA has not provided any facts as to how the information provided by proponents of the regulations should be considered disinformation. Furthermore, the record shows that the Energy Commission engineers continually research information provided to them to substantiate the information. As an example, staff engineers continue to evaluate the most recent Energy Star efficiency

[10] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF Page 14, paragraph 2.Page 18, para 3

[11] http://www.energy.ca.gov/appliances/2009_tvregs/documents/comments/TN%2053963%2010-02-09%20P.%20Fannon%20for%20Panasonic%20Comments%20on%20TV%20Proposed%20Regulations.pdf

data and the Energy Commission efficiency staff report for database information of television.[12]

For example: The Energy Commission staff engineers evaluated ENERGY STAR data for compliant televisions comparisons: When customers look at 52 inch ENERGY STAR compliant televisions some use 100 watts and cost $20 per year to operate and other use over 300 Watts and cost $80 per year to operate. A 52" insignia (Best Buy's brand) consumes 329 watt and average cost to the consumer to operate this television is $88 per year. After the Tier II regulations take affect the same size insignia, if available, will cost the consumer less than $44 per year at the rate of 14¢ per kilowatt. The regulation would save at least $440 over the 10 year life of this television.

Another example is staff engineer's comparison of non-ENERGY STAR 52 inch television show that a non ENERGY STAR television may use from 335 watts to over 500 Watts of energy. These televisions would cost the consumer from $88 to $133 per year to operate at a cost of 14¢ per Kilowatt and $886 to over $1330 over the ten year life of the television respectively.

CE manufacturers already have dramatically reduced the amount of energy used by digital televisions – without regulation.

Response:

The record does not support this CEA opinion. Staff analysis of the record has shown that the trend for the CE manufacturers program and voluntary efforts have not reduced the energy consumption in the last ten years. The analysis of the data shows that there is continuous growth in the television energy consumption.[13] (See Ken Riders analysis as cited above) The Energy Commission has determined that CE manufacturer's efforts as stated by CEA are insufficient and will not stop the television energy consumption growth in California. CEA has not provided existing and projected sales data to support their opinion. However the Energy Commission has determined that the proposed regulations will stabilize the growth in television energy consumption.

[12] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF Page 12
[13] http://www.energy.ca.gov/appliances/2009_tvregs/documents/index.html

Starting years before the CEC began investigating potential TV energy consumption regulations, consumer electronic ("CE") manufacturers began developing and implementing improved energy-saving digital TV technologies.

This statement may be true however when staff has analyzed the record for manufacturer's implantation of improved energy saving digital TV technologies staff found that more than 30% of the televisions do not meet the proposed Tier I in 2011. The proposed Tier I standard will require 100% of televisions sold in California to meet the standard which is a 30% increase in energy savings from what is being sold today. Furthermore, the record shows that the rate of efficiency improvement from 2008 to 2009 is quite small and is not great enough for all televisions to meet the proposed Tier 2 standard by 2013.[14] (**see Ken Riders analysis)**

The latest figures from Energy Star list more than 1,240 television products that comply with the Version 3.0 On Mode efficiency as well as Standby Mode requirements for televisions.

This is a true statement but does not take into consideration those television that do not meet Energy Star Version 3.0 that would be covered under the tier I efficiency standards. This statement also does not reflect that the Energy Star data since shows no change towards television energy consumption declining. CEA uses this statement to support that the ENERGY STAR 3.0 and voluntary efforts already are succeeding without regulations ignores such factors at Energy Star program does not require inefficient televisions to be removed from the market or that the trend from 2008 does not support that television energy consumption declining.

In less than two years, the energy efficiency of Energy Star digital TVs has been improved by more than 41 percent. These successful efforts occurred not because of any government mandates. They resulted from competition among manufacturers to reduce costs to consumers in the global marketplace.

These comments are not new and have been made repeatedly throughout this rulemaking and rejected, on the record. CEA in their previous presentation stated that 29.3% average power savings (weighted all size), and 41.4% efficiency improvement.

The record shows that this statement is misleading and CEA is reporting overestimated efficiency improvement. The Energy Commissions estimates of energy consumption

[14] http://www.energy.ca.gov/appliances/2009_tvregs/documents/index.html

between the years 2007 and 2009 have increased. On its face CEA's statement seems flawed, because it does not seem possible to make a calculation for a 29.3% power saving while having a much higher 41.4% efficiency improvement.

CEA in their comments stated that[15] "Energy consumption is one element affecting consumers purchasing decisions. But as shown in a recent CEA research poll, it is fifth on consumers' list beneath price, features, warranty terms, and size. If energy consumption were the only consideration, then the most efficient technologies also would be the most popular."

CEA further stated in its comments that energy efficiency of the televisions is "resulted from the competition among the manufacturer to reduce the cost to customers in the global marketplace."

According to CEA's survey and statement, it is clear that energy efficient televisions are low priority for the television manufacturers. Television manufacturers number I priority is cost reduction. Obviously, television manufacturers have little incentive to manufacturer energy efficient televisions. The Energy Commission staff has determined from the record that manufacturing of energy efficient televisions is technically feasible and, cost effective. It is obvious that regulations are required to accomplish television energy efficiency.

CEA statement that "these successful efforts occurred not because of any government mandates," has no credibility.

ENERGY STAR qualification is an incentive program that is administered by the Federal Department of Environmental Protection Agency and is a governmental program. Governments in many countries such as European Union, Australia, China, India, and Japan already passed regulations mandating limits on television energy consumption. In order to sell their products the manufacturer are required to reduce the television energy consumption. Although Energy Star program does promote technologies it cost consumers a premium. CEA statements to the Legislative subcommittee on October 21 2009 were that although the cost to manufacturer an efficient television may be the same as an inefficient television they charge a premium for an Energy Star labeled television to recover to their research and development costs.

[15] http://www.energy.ca.gov/appliances/2009_tvregs/documents/comments/TN%2053944%2011-02-09%20CEA%20Comments%20Regarding%20Draft%2045-Day%20Language%20on%20Appliance%20Efficiency%20Standards%20for%20TV.pdf page 19

The record supports the Energy Commission's analysis that the cost to manufacturer a television to meet the efficiency standards will not result in an incremental cost increase to manufacturer the efficient televisions. Furthermore, the record has established that there will be no added Energy Star premium to the customer because meeting the efficiency standards levels does not qualify the television as an Energy Star program. The results for the customers buying televisions meeting the efficiency standards are annual energy savings due to increase energy efficiency at a purchase price that is the same as a similar optioned inefficient television being sold in California today because there will be no Energy Star premium cost added by the manufactures.[16]

Additionally, the record shows that Energy Star program will not transform the entire market to more efficient televisions being required by the efficiency standards. There would be a significant loss of energy savings in California with a Energy Star program only. This report uses the basis from the PG&E study to show energy savings in a voluntary market. Page 18, Figure 4: Projections for Portion of Annual Sales Meeting Energy Star v 3 and 4 specifications Clearly shows the lost energy savings in this voluntary program. The graph for LCD v 3.0 shows that about 95 percent of the television will meet our Tier I efficiency which is based on EnergyStar version 3.0. The Tie 1 standard will achieve 100% EnergyStar compliance for television being sold in California which is an additional 5% energy savings from the voluntary program for years 2001 to 2013.

The line for LCD v 4.0 is for EneryStar version 4.0 which is similar to the Tier II efficiency standards which will be effective beginning in 2013. The graph for the LCD v 4.0 from 2013 (shows only a 45% compliance) through 2018 and beyond shows a maximum compliance level to 70% and then levels off with no more increase in compliance levels. Tier II (which is equivalent to EnergyStar version 4.0) requires 100% compliance starting in 2013. There is a significant additional energy savings from 2013 through the Tier II efficiency standard asrepresented by the area above the LCD v 4.0 line up to the 100% line. In addition to the analysis in the Staff Report, this table is additional support that the Tier I and Tier II standards will obtain a significant additional energy savings above what the voluntary EnergyStar projected savings are: tier II achieves an additional 52.5% savings in 2013 for 4 million sales, an additional 47.5% savings in 2014 for 4 million savings, an additional 42.5% savings in 2015 for 4 million sales, an additional 35% savings in 2016 for 4 million sales, an additional 32.5 % savings in 2017 for 4 million sales, and then an additional 30% savings from 2018 on for 4 million sales annual. This assumes 4 million sales each year, tier I = LCD v 3.0 and tier II = LCD v 4.0. The actual savings after 2013 probably would be LCD v 4.0 minus LCD v 3.0 times the percent savings.

The CEC is not properly accounting for these TV energy savings that contribute substantially to the state's greenhouse gas emissions reduction goals.

[16] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF Page 36, paragraph 2

Staff analysis and graphs of television energy use in the Staff Report includes the accounting of TV energy savings and demonstrate a significant trend of increased household energy consumption by televisions. CEA has not provided sales data to show that the Energy Commission's energy consumption estimates that show an increase from 3% to 10% in residential energy consumption in the last 10 years are not reasonable. These increases in energy consumption, which the Energy Commission has determined to be significant, have occurred with the existing voluntary measures in place and in the absence of regulatory measures to slow or stop this growth. There is no evidence in the record that voluntary programs can stop the expected energy consumption increase to 18 percent in 2023, as reported in the Staff Report. Staff analysis shows that without adopting regulations the reduction in energy consumption and GHG's cannot be accomplished.

In addition the Energy Commission has agrees with the ENERGY STAR program when they state that its voluntary program only encourages innovation but does not remove energy wasting television, which must be done by regulations.

Moreover, the kind of performance-based regulation proposed by the Commission will be detrimental to consumers, innovation, and every business that manufactures, sells, and relies on availability of the highest quality digital televisions at the lowest prices. Considering the importance of televisions as the central source for home entertainment, information, and education, and the tremendous gains already achieved by TV manufacturers, regulation based on artificial and arbitrary energy use limits is both utterly unnecessary and foreseeably harmful.

The energy consumption limits in the proposed regulation are based on thorough analysis, solid evidence, and data and have been found to reduce a significant amount of energy use on a statewide basis, are feasible with existing technologies, and are cost effective for the consumer and will have minimal effect on businesses in the State. (See Staff Report and supporting documentation and NOPA and ISOR for Docket 09-AAER-1C.) The Energy Commission believes that the proposed regulations will stimulate technology progress, and innovation towards more energy efficient televisions.

Staff analysis and graphs of television energy use in the record clearly demonstrate a significant trend of increased household energy consumption by televisions with only voluntary measures in place. (See Staff Report) CEA has not provided any sales data of the energy use of televisions being sold in California to support their position that the Energy Commission's energy consumption estimates are not reasonable. CEA has not provided any evidence that the proposed standards will be detrimental to consumers, innovation, and every business that manufactures and sells televisions. The standards do not require new innovative technologies. The record shows that the standards are based on existing technology that is currently be

manufactured and sold in California. All that the standards require is that the inefficient televisions being sold today be manufactured with existing technology to make them more energy efficient.

CEA urges the Commission to take a bold step. Stop viewing mandated energy use limits as the only means to address energy efficiency regulation. Combining voluntary industry efforts – which already have drastically reduced the energy consumption of digital televisions – with new initiatives to educate and encourage consumers to conserve TV energy, and new requirements related to energy-saving features, the Commission and industry can cooperatively realize the desired energy savings without impeding technological progress or consumer enjoyment.

The statutory obligation of the Energy Commission cannot be delegated. The Energy Commission's authority to regulate televisions is derived from the Warren-Alquist State Energy Resources Conservation and Development Act, which is located in the California Public Resources Code. *(Section 25000, et seq.)* The Warren-Alquist Act provides direction to the Energy Commission in the adoption of appliance efficiency standards:

FIRST: Electrical energy is essential to the health, safety and welfare of the people of California and to its economy, and it is the responsibility of the Energy Commission, as a state agency, to ensure that a reliable supply of electrical energy is maintained. *(derived from Public Resources Code section 25001)*

SECOND: There is a concern that the rapid rate of growth in electrical energy consumption due to wasteful and inefficient appliances if left unabated will result in serious depletion or irreversible commitment of energy, land and water resources, and potentially threatens the state's environmental quality. *(derived from Public Resources Code section 25002.)*

To fulfill its obligations under the Warren-Alquist Act, the Energy Commission has determined that appliance efficiency standards such as the proposed television standards reduce overall electricity demand and therefore the overall need for new power plants and helps system operators in several ways. First, reduced demand increases system reliability, as less demand means less strain on the electricity system since less energy has to be generated and delivered. Second, because California's renewable energy goals are based on a percentage of retail sales of electricity, reducing overall electricity demand means less renewable energy that must be generated to meet that percentage goal. Third, fewer renewable plants needing to be built will reduce the operational and reliability issues associated with those less power plants.

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Summary of Comments

Point I: The CEC Staff Report findings rely on flawed assumptions, erroneous calculations, and outdated technical data that do not support the proposed regulations.

There is nothing in the record that supports the assertions that the proposed regulations are flawed, use obsolete data, or lead to overstated assumptions. The record shows that the proposed regulations use as a baseline 2007 data from CNET, Market Transformation Program (MTP), Public Interest Energy Research (PIER), European Information and Technology industry Association (EICTA). (see Staff Report page XX) The record also shows that the baseline has been supplemented with new studies and data from ENERGY STAR and CNET. (See Staff has continued (latest date Oct. 30, 2009) to obtain the latest ENERGY STAR data to evaluate the credibility of the original baseline. Staff has determined that the new data not only supports the 2007 baseline, but that this data strengthens the Commission's findings that proposed energy efficiency regulations are credible and feasible. This has been demonstrated by the fact the new data The Energy Commission has determined that the new data corroborates the accuracy and credibility of the PG&E studies that were used in formulating the proposed standards. This has been demonstrated by the fact the new data Furthermore the Energy Commission finds that the assumptions used to model energy savings in its studies are widely used and accepted by the scientific community. CEA statements are not supported by facts in the record. CEA has not provided existing or projected sales data to support a conclusion that the Energy Commission's studies are out-of-date and cannot be used, or they are flawed and do not represent a reasonable estimate supporting the adoption of the efficiency standards. [17]

The CEC Staff Report provides no meaningful and relevant data on which the Commission can base energy performance regulations.

The CEC Staff Report provides the necessary support, analysis, evidence, and data for the Energy Commission to make its findings under Public Resources Code section 25402(c) to adopt the efficiency standards for television. CEA has provided no California sales data to show that the Energy Commission's energy savings are not reasonable estimates on which to base its findings. CEA has not provided any evidence to show that the Energy Commission's findings on the technological feasibility for meeting the standards (which are based on existing technologies being marketed today) are not feasible, not available and not being sold in today's market, and that these technologies cannot be utilized to make inefficient televisions sold today efficient enough to meet the proposed standards. Furthermore, CEA has not provided any manufacturing cost data to show that the Energy Commission's findings of no incremental costs to manufacture more efficient television using existing technologies is not a reasonable finding.

[17] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF

First, despite the CEC's recognition that television manufacturers have made substantial reductions in energy use in the last two years alone, the Staff Report relies on outdated energy use studies and the July 2008 Pacific Gas & Electric Company ("PG&E") "CASE" report, that concededly exclude any new models with lower energy consumption. This inflates the baseline, which in turn exaggerates the potential savings estimates.

The record clearly supports that the conclusion that voluntary energy efficiency programs suggested by CEA has not worked. Household television energy consumption has risen from 3% of total energy use in 2001 to approximately 10 % in 2009, and is expected to increase to 18% in 2020. (See Staff Report pg xxx) The Energy Commission believes these estimates clearly support the need for regulations to, first, stop the increase that has occurred under industry voluntary programs, and, second, to lower the overall household energy use to 2001 levels. As stated above, there is nothing in the record to support the assertion that the proposed regulations are flawed, use obsolete data, and lead to overstated assumptions. The Energy Commission estimates are clearly shown in its Staff Report and supporting data. Furthermore, CEA has provided no California sales data to show that the Energy Commission's estimates are not reasonable**.**

Second, the Staff Report indisputably makes mathematical and conceptual errors that improperly calculate potential energy savings.

Staff has reviewed its analysis in the Staff Report and has found no errors as suggested by CEA. The methodology used in calculating energy consumption and savings has not changed from the methodology used in previous appliance efficiency rulemakings. This methodology is scientific, widely accepted and used by engineers, scientists, economists, and energy consultants in the United States and worldwide.

From statements made by CEA at the California Senate Subcommittee hearing on October 21, 2009 (about double counting see DVD from hearing), it appears that CEA misinterprets Table 8 from PG&E's July 3, 2008 proposal in stating that there are mathematical and conceptual errors that improperly calculate potential energy savings. (See Codes and Standards Enhancement (CASE) Initiative For PY2008: Title 20 Standards Development Title: Analysis of Standards Options for Televisions, July 3, 2008) Table 8 provides a column titled "1st yr. incremental savings from Tier 1 (GWh/yr)." This provides the incremental energy savings from the baseline television having to meet the Tier 1 efficiency levels. Table 8 also provides a column titled "1st yr. incremental savings from Tier 2 (GWh/yr)". This provides the additional incremental energy savings from the Tier 1 efficiency level to the Tier 2 efficiency levels. Finally Table 8 provides a column titled "1st yr. incremental savings from Tier 1 & 2 (GWh/yr)," which is the total first

year savings. Note that for year 2011 and 2012 there are no incremental savings for Tier 2, which is reflected in the total incremental savings for those years being Tier 1 only. CEA apparently misinterpreted Table 8's incremental savings as cumulative savings, which is not correct. The Energy Commission has used this methodology for regulating dozens of appliances for energy and water consumption all through an open rulemaking under the California Administrative Procedures Act. The record demonstrates that the energy consumption and savings estimates are accurate and based on scientific and widely-accepted methodology.

When just these math errors are corrected, the Staff's estimated savings of "$8.1 billion" collapses to a far smaller number: $2.4 billion – approximately the same amount of savings that the Staff estimates from the purely voluntary Energy Star program. When calibrated to reflect energy savings achieved *after* the July 2008 CASE paper, that number reduces further to $548 million. These and other errors are described in the attached report from C. Paul Wazzan, Ph.D. and Dawn Eash, M.S. of LECG, "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" (hereinafter "LECG Report").

Because of these errors, the Staff Report:

- **Overstates the "baseline" measurement of energy consumption by today's digital TVs**
- **Overestimates the potential savings from the regulation through 2022 when compared to that inflated baseline**
- **Understates the energy efficiencies gained by CEA's proposed alternative approaches**
- **Skews the results in favor of regulation, when a fair measurement would show that the savings do not justify the costs to consumers.**
- **Lacks current, hard data to support the regulation**
- **Prejudices TV manufacturers and consumers who are being asked to shoulder all costs of the regulations. Therefore, the Commission's proposed regulations would violate the fundamental requirement of California law by imposing greater costs on consumers. When the potential energy savings from the proposed regulations are more reasonably calculated, the costs to consumers outweigh the benefits. Today's energy-saving TVs can cost hundreds of dollars more than comparable models, but any potential savings from the regulation would be offset by an $17 increase in the price of televisions. Moreover, by denying consumers access to the full line of television models, the impact on consumers, manufacturers, and retailers would cost California more than 4,000 jobs and approximately $46.8 million in tax revenue.**

As discussed above, the methodology used by the Energy Commission in calculating energy consumption and savings has not changed from the methodology used in previous appliance efficiency rulemakings. This methodology is scientific, widely accepted and used by engineers, scientists, economists, and energy consultants in the United States and worldwide. The Energy Commission has found no error in double counting, as suggested by CEA.

CEA also asserts that the Energy Commission used a faulty discount rate of 3% in its energy savings estimates. Dr. Paul Wazzan presented his analysis to support CEA's analysis in the Senate Subcommittee hearing on October 21, 2009. The Energy Commission has determined that CEA wrongly used consumer credit card financing used to purchase a television as the discount rate in estimating the cost savings for the homeowner for energy savings from using a more efficient television. Although this error of using credit card financing was pointed out to CEA during that hearing, CEA did not change alter this comment, provided to the Energy Commission on November 3, 2009. (See Legislative Hearings DVD???)

CEA has not provided in the record any energy saving analysis where the estimated cost of energy used consumer credit financing rates for the discount rate. As the record shows, the use of the 3% discount rate is based on report and has been the basis of countless energy cost estimates by the Energy Commission and was found to be a reasonable discount rate for the efficiency standards for televisions.

As stated above, the Energy Commission has established in the record that the cost to manufacture energy efficient televisions is negative to zero, and because the standards do not require meeting ENERGY STAR levels, there will be no premium added to the television by the manufacturers. Therefore the standards are cost effective to the consumer as required by Public Resources Code section 25402(c). With this evidence, the Energy Commission has determined that consumers will benefit from the lower price of energy efficient televisions, as well as the reduced cost of their electric bills. The Energy Commission does not believe the proposed standards are prejudicial to manufacturers or retailers. The record shows that the incremental cost to manufacture energy efficient televisions is negative to zero, that the technology to meet the standards is already on the retailer's shelves. There are no facts in the record to show that the Energy Commission is being prejudicial to manufacturers or retailers. The record clearly shows the Energy Commission followed the requirements under the California Administrative Procedures Act and the Public Resources Code. (see NOPA and ISOR; 09 AAER -1C)

Point II: Mandatory limits on the energy performance of digital TVs will stifle future innovation and harm consumer and state interests in the highly dynamic and competitive technology market.

The proposed regulations require very conservative efficiency levels to be met, as many manufacturers already have televisions that comply with the proposed standards. Because the levels can be met with existing technologies there is no need to develop new technologies. However, the standards also do not prevent innovation as demonstrated in the record showing that technologies such as LED backlighting and HCFL technologies (see paragraph below) are not prevented from being used by adherence to the standards.

There are over 1,000 television models that meet the proposed Tier 1, and 300 models today meet proposed Tier 2. New innovative technologies such as light emitting diodes (LED), hot cathode fluorescent lamp (HCFL), and organic LED's (OLED) that are available in the California market today far exceed proposed Tier 1 and Tier 2 regulations. Staff analyzed the market data and innovative technologies and has determined that these innovated technologies, which are energy efficient and far exceed the proposed energy efficiency standards, could not have been banned, and in fact would be more prevalent in California's market if the proposed efficiency standards were already in effect.

Over the last decade, digital televisions have undergone a remarkable transformation in terms of technological innovation, performance, size, and price. Energy-hogging analog cathode ray tube TVs that dominated the market ten years ago now have been displaced in the market by thinner, sharper, lower-priced, and lower-energy digital TVs across a multitude of technologies: DLP, LCD, and plasma, and more under development.

The Energy Commissions does not find support in the record for these statements. The statement ignores the fact the cathode ray tube (CRT) televisions are being replaced with larger size flat screens that have up to 40% larger screen area, resulting in larger energy consumption. The staff report found that 25 inch CRT televisions are being replaced with 37 inch flat screens. (See Staff Report pg xxx) Over the last decade, residential television energy consumption has jumped from 3-4% to approximately 10%. The record shows that since the introduction of flat screen plasma's and LCD televisions, energy consumption jumped from 3-4% to approximately 10%, and without regulations it will grow to 18%. (See Staff Report pg xxx)

As we noted at the October 13th hearing, the Commission's regulations would stifle innovation in new screen technologies. Had the CEC's proposed regulations been in place in 2001, the millions of plasma and LCD TVs currently in consumers' homes and retailers' shelves never could have come to market. When a TV technology first is developed, it undergoes a decade or more of development before it is ready for market, and years of refinement to improve its performance and lower its cost. Manufacturers need those early sales to learn whether there is sufficient demand for the product to warrant further

investment, and to obtain the revenue necessary to fuel those improvements, and to create cost-reducing development and manufacturing technologies. Without the ability to market new products to "early adopters," industry cannot innovate. That is as true for TVs as it is for PCs, semiconductors, cameras, iPods, and dozens more products that bring value and enjoyment to consumers' lives.

This comment is purely speculative and not true. In 2001 the Energy Commission would not have adopted these regulations because it would not have been able to make the necessary finding under the Public Resources Code for significant energy savings, feasibility, and consumer cost effectiveness . However, the Energy Commission can now make such findings. The Energy Commission today has made the finding that home energy consumption has skyrocketed from 3% to 10%, that the manufacturers sell very efficient televisions (using 100 watts) and very inefficient televisions (using 600 watts) and that the cost to make the efficient televisions can actually cost less to manufacturer because the more efficient televisions use less parts.

Furthermore, history has consistently shown that innovations will continue to happen through technology and that there are many paths for such innovation. In late 1990's cathode ray tube (CRT) televisions were converting to flat surface, and picture quality was improving. CRT TV is used to display high definition digital signal with great quality. Manufacturers introduced flat screen plasma, DLP's and LCD televisions. DLP and plasma televisions lost their market share to LCD televisions. CCFL LCD televisions are losing their market share to LED and LCD televisions. Innovations take their own path. For example, the manufacturing of energy efficient surface-conduction electron-emitter display (SED) that offered richer colors, faster response, and a better picture quality was stopped by Toshiba and Cannon. SED TVs were never produced although to many this was a loss of a great television technology.[18] It is impossible to speculate as to what might happen to the next DTV technology, with or without regulations. The Energy Commission has determined that the proposed regulations ensure that whatever path industry takes that the older energy-wasting televisions will be removed from the market.

The Energy Commission already regulates 23 different appliance product categories. There is no evidence that any of those regulations have prevented technologies and innovations for those product types. For instance, the refrigerators available in other countries do not have innovations which are not available in California.

Mandating levels of energy performance such as those proposed in the NOPA will stifle technological innovation in the most dynamic and advanced digital entertainment products in consumers' homes. Put simply, televisions are not like toasters -- or air conditioners, clothes washers, ovens, refrigerators, or other "white goods" appliances that channel energy to utilitarian purposes.

[18] http://www.reghardware.co.uk/2007/05/25/sed_tv_delayed_again/

Staff does not find this statement to be accurate because the standards that are proposed have been found to be feasible with existing technology, they are designed with the use of a test procedure that does not affect or stifle innovation nor do they effect the options available on the television, and finally they have been found to be cost effective for the consumer.

Staff understands that televisions are not toasters —or air conditioners, clothes washers, ovens, refrigerators, or other "white goods" appliances that channel energy utilitarian purpose. However, there are many televisions being sold in California that are inefficient and consume excessive and unnecessary energy, and these televisions can be upgraded with existing technology to use less energy. The regulations will allow only the sale of energy efficient televisions of the same size, with the same features, same or better picture quality and will not cost more than inefficient televisions being manufactured today. The Energy Commission has determined that these standards are a win-win for consumers and a win-win for California.

Consumers acutely perceive the differences in audiovisual characteristics such as sharpness, color, brightness, saturation, refresh rate, viewing angle, and sound quality among television sets and display technologies, and these differences can matter deeply to consumers. That is particularly true in California where hundreds of thousands of professionals earn their living in the motion picture, television, game development, and high technology industries.

Staff has found no evidence in the record that the standards would interfere with audiovisual characteristics such as sharpness, color, brightness, saturation, refresh rate, viewing angle, and sound quality among television sets and display technologies. The standards are designed to remove from the market energy wasting television which will be replaced by efficient televisions that cost the same and have the same options, but cost less to operate.

Subjecting all display technologies to a "one size fits all" performance standard ignores that television technologies are neither static nor monolithic. At a time when companies each are investing tens of millions of research dollars to develop new display technologies Thus, as we responded at the October 13th hearing, there is no inconsistency in the CEA position. Even under a best case scenario where regulations have no adverse impact on innovation into energy saving technologies, or technologies ancillary to the screen, the regulations unavoidably will impede development and marketing of new screen technologies whose energy efficiency may not meet the performance mandates at the time of commercialization, but whose efficiency would be improved substantially over time.

There are approximately 4 million televisions sold in California each year and it is estimated that 24 million CRT's will be replaced in the near future with larger flat screen television. With the television efficiency standards in place, the Energy Commission has determined that there will be a savings to California citizens of approximately 1 billion dollars a year in avoided wasted energy use. As the record demonstrates, the standards are designed to replace energy-wasting

televisions being sold today with the more efficient televisions, which are also available in today's market. The Energy Commission has determined that there is a significant amount of energy being wasted, which can be prevented by requiring the use of existing efficiency technology. New innovative television technologies such as HCFL, LED LCD, OLED, DLP and plasma available today are highly energy efficient and far exceed the proposed regulations. Electronics and lighting are two major components used in flat screen televisions. These two components are far more efficient that those manufactured 5-10 years ago, and will be more efficient in the future and will not be impeded in these developments by the standards. Another fact is that television manufacturers are moving towards making thinner televisions. Consequently, thinner and smaller electronic parts with lower power consumption will be needed. CEA statements do not reflect the fact that the record establishes that energy efficient technologies in the near future will far exceed the standards. Over the last ten years the residential television energy consumption has grown from 3-4% to 10%, without regulations, and there appears to be no end to residential television energy consumption growth. To bring residential television energy consumption to early 1990's levels television regulations may need to be revised in the near future.

The proposed regulations would:

- **Increase the costs to consumers of television receivers**
- **Increase costs to manufacturers of research, development, and manufacture of digital TVs**
- **Reduce consumer choice by denying retailers access to popular television models**
- **Constrain innovation into new display technologies and product features**

The record does not support the statement that there will be an increase in cost to the consumer or to manufacturers from the standards.

The record supports the conclusion that there will be negative or zero cost to television technologies because they are already being sold in today's market. Furthermore, there is no sales data to show that the more efficient televisions required to meet the Tier 1 and Tier 2 standards will result in an added premium for the consumer. As the record demonstrates, manufacturers add a premium price to ENERGY STAR labeled televisions in order to recover their research and development expenditures. The record also shows that the Tier 1 and Tie 2 standards do not require meeting efficiency levels for ENERGY STAR, and therefore there will be no added premium for the consumer. The proposed standards will simply cause inefficient televisions to be replaced by energy efficient televisions. The record demonstrates that compliant energy efficient televisions will have the same size, same or better picture quality, same or more features, longer life, and will save consumers money in operating costs. The Energy Commission

staff visited Best Buy stores and found that ENERGY STAR compliant televisions (Tie I compliant) cost less compared to last year's non-ENERGY STAR models.

The record also shows that the proposed regulations will not hinder innovation and new product features for two reasons. First, the inefficient televisions will be replaced energy efficient televisions of the same size, same or better picture quality, same or more features, longer life, and will save consumers money in operating costs. (see xxx) The basis for this finding is that International Electrotechnical Commission (IEC) test method 62087 required under the standards only measures audio and video energy consumption and requires that additional features be turned off and not measured during testing. Thus the Energy Commission has determined that any new innovative features can be turned off during the test, and their energy consumption, are not impacted by the regulations. This means that the standards do not effect additional features because their energy use is not required to be measured by the required test method.

Choosing a new television is one of the most important buying decisions consumers make. Given information about the benefits and costs of owning a particular model television, consumers know how to judge for themselves the best value for the money. The Commission should focus its efforts to encourage consumer education, not to constrain consumer choice.

As the record shows, the efficiency standards will not constraint consumer choice. The standards simply require that inefficient televisions be made more efficient. They do not hinder options that can be made available by the manufacturer. Thus the consumer can pick any television with whatever options they want, knowing that whatever television they pick it will meet minimum energy efficiency levels. Furthermore, with the standards requiring energy consumption labeling for the first time, customers will now have the information before them at the time of purchase as to the energy use of each television being sold; it will no longer be a mystery.

Point III: The Commission should adopt alternative measures that, in conjunction with industry's voluntary efforts and existing market-oriented programs, will yield energy savings at least as great, if not greater, than would otherwise be achieved by regulating power consumption – but without the costs to consumers, business, and innovation.

The Energy Commission staff has reviewed the alternate measures, and staff analysis of the record shows that the trend for the alternative measures, voluntary efforts, and existing market-oriented programs will not meet the level of efficiency for televisions in California set forth in the proposed standards. More than 30% of the televisions will not meet the proposed Tier 1 in 2011. The rate of efficiency improvement from alternative measures, voluntary efforts, and existing market-oriented programs is not great enough for all televisions to meet the proposed Tier 2 standard by 2013. CEA's statement that "alternative measures that, in conjunction with industry's voluntary efforts and existing market-oriented programs, will yield energy savings at least as great, if not greater, than would otherwise be archived by regulating power consumption" is not supported by the record.

The record shows that existing voluntary measures for television efficiency has resulted in an increase in energy consumption in the home from 3% in 2001 to 10% in 2009, with an estimated 18% levels in 2020. CEA has provided no sales data of televisions in the California market to show that the Energy Commission estimates are not reasonable. Furthermore the Fraunhofer Center for Sustainable Energy published a study that was included in CEA's comment package for televisions (See appendices of CEA Comments shows that the voluntary ENERGY STAR program falls significantly short of achieving the energy savings that would be achieved by the efficiency standards.

The Commission can achieve its energy savings goals without harming the highly dynamic TV industry through the following steps:

1. Support compliance with the federal ENNERGY STAR program. In just the first years of the ENERGY STAR 3.0 program for TVs, manufacturers reduced power consumption on average by 29.3%, and improved efficiency by 41.4%. CEA encourages the CEC to continue to monitor the successes of the manufacturing industry in lowering energy consumption, and consult with the industry on ways to improve performance.

As discussed above, the record shows that these statements are misleading as it appears to tieefficiency improvements to overall energy savings. Prior to November 2008, ENERGY STAR only required standby energy use of 3 watts or better to meet the qualifications. In November 2008, ENERGY STAR qualifications (Version 3) added power consumption to the standby requirement. The modest power consumption requirement did not require any hardware changes for television. ENERGY STAR Version 3 has been met with software changes that dim the panel and use less energy. ENERGY STAR Version 4 (equivalent to the Tier 2 level), which will be effective in May of 2010 will require hardware changes to the television based on technology that is being use on some televisions today.

The Energy Commission estimates that the energy consumption of televisions between the years 2007 and 2009 have increased, even though CEA states that of ENERGY STAR digital TVs have been improved by more than 41 percent. There appear to be some missing pieces to CEA's statements, as ENERGY STAR improvements have not stopped the increase of residential energy consumption. The below is the argument we should use from CEA's Fraunhofer Center which support our position that the Voluntary EnergyStar program does not get to 100% compliant for Tier 1 and Tire 2 .

Those missing pieces are that ENERGY STAR qualification is an incentive program that is administered by the U.S. Department of Environmental Protection Agency. Governments in many countries, such as those in the European Union, Australia, China, India, and Japan already passed regulations mandating limits on television energy consumption. In order to sell their products the manufacturers are required to reduce the energy consumption of their televisions.

Although the ENERGY STAR program does promote technologies it cost consumers a premium. CEA stated in the Senate Subcommittee hearing on October 21 2009 that although the costs to manufacturer an efficient television may be the same as to manufacture an inefficient television, they charge a premium for an ENERGY STAR-labeled television to recover to their research and development expenditures.

The record supports the Energy Commission's analysis that the cost to manufacturer a television to meet the efficiency standards will not result in an incremental cost. Furthermore, the record has established that there will be no added ENERGY STAR premium to the customer because meeting the efficiency levels will not qualify the television for the ENERGY STAR program. The results for the customers buying televisions meeting the efficiency standards are annual energy savings due to increased energy efficiency, and a purchase price that is the same as a similarly-optioned inefficient television being sold in California today, because there will be no ENERGY STAR premium cost added by the manufactures. (See Staff Report pg xxx)

Additionally, the record shows that the ENERGY STAR program will not convert the entire market to the more efficient televisions being required by the efficiency standards. There would be a significant loss of energy savings in California with an ENERGY STAR-only program. CEA's comments include a report by Fraunhofer Center for Sustainable Energy that used basis from the PG&E study to show energy savings in a voluntary market. Page 18 of the Fraunhofer report, Figure 4: Projections for Portion of Annual Sales Meeting Energy Star v 3 and 4 specifications shows the lost energy savings in this voluntary program. The graph for LCD v 3.0 shows that about 95 percent of the television will meet our Tier 1 efficiency, which is based on ENERGY STAR Version 3.0. The Tier 1 standard will achieve 100% ENERGY STAR compliance for televisionS being sold in California, which is an additional 5% energy savings from the voluntary program for years 2001 to 2013.

The line for LCD v 4.0 is for ENERGY STAR Version 4.0, which is similar to the Tier 2 efficiency standards which will be effective beginning in 2013. The graph for the LCD v 4.0 from 2013 (shows only a 45% compliance) through 2018 and beyond shows a maximum compliance level to 70% and then levels off with no more increase in compliance levels. Tier 2 (which is equivalent to ENERGY STAR Version 4.0) requires 100% compliance starting in 2013. There is a significant additional energy savings from 2013 through the Tier 2 efficiency standard as represented by the area above the LCD v 4.0 line up to the 100% line. In addition to the analysis in the Staff Report, this table supports that the Tier 1 and Tier 2 standards will obtain a significant additional energy savings above those derived from the projected ENERGY STAR savings.

2. Adopt mandatory functional requirements that will lower energy consumption. CEA supports a Commission adoption of two regulatory requirements that digital TVs sold in California include "forced menus" and automatic shut-off. These features can reduce energy consumption by 190 GWh per year or more, without mandating unrealistic performance levels.

CEA's proposed mandatory functional requirements of forced menu and automatic shut-off are needed and are included in the proposed regulations. California's residential television energy consumption from the 1970's to late the 1990's remained between 3-4%. In the late 1990's, when industry introduced the flat screen plasma's and LCD televisions, the energy consumption jumped to approximately 10%, and without regulations it will continue to grow up to 18% by 2023. The Energy Commission has made a determination that voluntary efficiency measures have resulted in household television energy consumption to increase from 3% in 2001 to 10% in 2009, and that regulations are required to stop this growth in energy consumption. As discussed in the Staff Report, the expected energy savings calculations come from energy consumption performance levels for audio and screen energy use, plus these two efficiency measures. These proposed measures alone are insufficient to lower the rate of television energy consumption growth.

Moreover, CEA and the authors Kurt W. Roth Bryan Urban of "Fraunhofer Center for Sustainable Energy Systems" report on page 8, and 9 propose that "by automatically switching off TVs that are left on after a period of time without user input, assumed to be three hours" would save 190 GWh's a year. The Energy Commission does not believe requiring televisions to automatically shut off after three hours in needed or appropriate. This requirement would interfere with a consumer watching a 3-hour game or playing a game on the TV and is not changing the channels and the TV shut off in the middle of the action. Furthermore, the Energy Commission has no authority to regulate the use of television.

The Fraunhoer report authors and CEA ignore the fact that most of televisions on the market today are connected via a set top box (cable or satellite box). The set top boxes, if there is no user input such as changing the channels etc., are programmed to shut off after four hours. This three-hour TV shut off mismatches with the four-hour set top box shutoff, and thus this idea is unworkable.

3. Educate consumers about energy efficient use of TVs. The greatest and fastest gains can be achieved by changing consumers' behavior with respect to the tens of millions of TVs already in their homes. Simple steps such as encouraging consumers to lower the brightness settings of their current TVs and to turn off TVs not in use can save as much as 555 GWh per year – more than half of what the Commission estimates its regulations would achieve.

The televisions currently on the market are inefficient and unnecessarily consume excessive power. Even if the Public Resources Code gave the Energy Commission the authority to educate consumers to change their behavior, this alone would not reduce the growth in television energy consumption. As shown in the record, there are many energy wasting television being sold in California and no education program can change the energy consumption level of a 600 watt consuming television into a 100 watt consuming television, as required by the standards. Furthermore, without the labeling requirements of the standards the consumer will not be educated as to the energy consumption of the various televisions they are looking to purchase. CEA's proposed brightness settings measure is already included in the proposed regulations. The regulations specify luminance control requirements for all televisions sold in California to

have not less than 65% of the peak luminance of the "retail" mode, or the brightest selectable preset mode, of the product.

CEA's proposes that "Simple steps such as encouraging consumers to lower the brightness settings of their current TVs and to turn off TVs not in use can save as much as 555 GWh per year –more than half of what the Commission estimates its regulations would achieve." CEA has not provided any data or information to the record that would establish that these savings levels can be achieved, whereas the Energy Commission's energy savings will be achieved because they are mandatory and all televisions sold in California must meet these energy savings levels.

CEC should support and defer to the Federal Trade Commission's ("FTC") efforts already well underway to adopt nationwide uniform energy use labeling standards for electronics products, including digital TVs.

Today when consumers shop for a new television there is no information on the television informing the consumer of the television's energy use or operating costs, so the consumer cannot make comparisons between similar models. As an example, a customer looking at 52 inch Sony televisions that have an ENERGY STAR logo, the customer has no way of knowing that one uses 105 watts of energy and the other uses 329 watts of energy. The higher wattage-consuming televisions would cost the consumer $57 dollars per year to operate and $570 over the life of the television. In addition, the non-ENERGY STAR 52 inch televisions next to these may use from 335 watts to over 500 watts of energy and cost the consumer from $88 to $133 per year to operate and $886 to over $1,330 over the life of the television. While "white goods" such as refrigerators and clothes washers provide this information at the point of sale via the yellow Energy Guide labels required by the FTC, no such information exists for televisions.

The FTC label regulatory process is lengthy and it takes years before the FTC develops labeling requirements for products. The labeling requirements in the proposed regulations, in the interim, will help California buyers choose the most energy efficient television. California labeling requirements will be pre-empted once any FTC requirements become effective. Furthermore, testimony from the National Resources Defense Counsel at the October 21, 2009 Senate Subcommittee hearing indicated that CEA is lobbying against physical labels being put on televisions that would provide energy consumption information for the buying customer. This testimony further underscores the level of uncertainty regarding the prospect of the FTC adopting labeling requirements for televisions.

4. Reward consumers for buying energy-efficient televisions. Incentive and rebate programs can reduce energy use by encouraging consumers to trade-in or retire less efficient TVs for newer, more energy-efficient models. Such efforts are estimated by California utilities and CEA to reduce energy consumption by as much as 70 GWh per year. Many of these savings are described in the attached peer-reviewed report by Kurt Roth and Bryan W. Urban of the Fraunhofer Center For Sustainable Energy Systems, "Assessment of the Energy Savings Potential of Policies and Measures to Reduce Television

Energy Consumption, Final Report to the Consumer Electronics Association" (hereinafter, "Fraunhofer Report").

The programs mentioned by CEA are beyond the scope of authority of the Energy Commission under the Public Resources Code. There is no program in place to encourage consumers to trade in or retire less efficient televisions for newer, more energy-efficient models. The energy savings identified in the Fraunhofer report are not a cost effective measure. The Fraunhofer report, on page 31, proposes a one-year program duration and a $50 incentive for 200,000 televisions. This equates to $50 x 200,000 = $10 million in investment. The energy savings generated from this proposal are approximately 10 GWh. The cost of 1 GWh is approximately $14, 000, and this equates to $14,000 x 10 =$140,000. CEA is asking the State of California to spend $10 million to save $140,000. The record shows that the Energy Commission's energy savings of 1 billion dollars per year is far superior to this CEA proposal.

POINT IV: Additional Proposed Regulations, Including those Concerning Power Factor and Product Labeling, Should Be Rejected as Costly and Ineffective.

The Commission's proposed regulations concerning TV power factor would prove expensive for manufacturers. As the Commission and the U.S. Environmental Protection Agency admit, any actual savings realized by consumers from power factor regulation would be negligible. Consequently, the Commission's power factor proposals do not satisfy the statutory prerequisites to regulation.

The record supports that the power factor requirements are feasible, cost effective, and will save the consumer money in reduced energy costs. The technical support for these findings are based on a scientific study in the record provided by PG&E. (See Codes and Standards Enhancement (CASE) Initiative: Title 20 Standards Development Title: Energy Savings Estimate for Power Factor Correction in Televisions Prepared by: Paul Bendt, PhD, Ecos Consulting, April 13, 2009.)

The Energy Commission had determined that the power factor requirements will reduce energy loss due to the excessive resistance that causes heat buildup in the house wiring, which results in wasted energy and higher electric bill costs to consumers. The study shows that a poor power factor is a burden to consumers, directly in excess kWh charges for home energy use, and indirectly through massive systems maintained by utilities to provide high-quality power in spite of the system defects caused by low power factors. Both costs are passed directly to ratepayers. CEA has not provided any feasibility studies, or energy savings analysis and cost estimates that show the PG&E study is not a reasonable estimate of energy savings and cost effectiveness.

CEA supports a uniform national labeling program that sensibly provides consumers with product information, without imposing unrealistic costs and requirements on manufacturers or retailers. The Commission should reject micromanagement of type size and placement in favor of the many, more sensible, marketplace alternatives successfully

used for TVs and other products that will provide consumers the information they need prior to purchase.

Product labeling requirements in the proposed regulations are necessary and will help California buyers choose the most energy efficient television. Without energy disclosure labeling, consumers will not be able to choose the most energy efficient televisions. The cost of labeling, as provided in the record, has been determined not to be a burden to industry. (See NOPA and ISOR 09-AAER-1C)

Today when consumers shop for a new television there is no information on the television informing the consumer of the television's energy use or operating costs, so the consumer cannot make comparisons between similar models. As an example, a customer looking at 52 inch Sony televisions that have an ENERGY STAR logo, the customer has no way of knowing that one uses 105 watts of energy and the other uses 329 watts of energy. The higher wattage-consuming televisions would cost the consumer $57 dollars per year to operate and $570 over the life of the television. In addition, the non-ENERGY STAR 52 inch televisions next to these may use from 335 watts to over 500 watts of energy and cost the consumer from $88 to $133 per year to operate and $886 to over $1,330 over the life of the television. While "white goods" such as refrigerators and clothes washers provide this information at the point of sale via the yellow Energy Guide labels required by the FTC, no such information exists for televisions.

The FTC label regulatory process is lengthy and it takes years before the FTC develops labeling requirements for products. The labeling requirements in the proposed regulations, in the interim, will help California buyers choose the most energy efficient television. California labeling requirements will be pre-empted once any FTC requirements become effective. Furthermore, testimony from the National Resources Defense Counsel at the October 21, 2009 Senate Subcommittee hearing indicated that CEA is lobbying against physical labels being put on televisions that would provide energy consumption information for the buying customer. This testimony further underscores the level of uncertainty regarding the prospect of the FTC adopting labeling requirements for televisions.

* * *

In summary, the CEC has failed to demonstrate that the proposed regulations meet the statutory criteria. The regulations would impose higher costs on consumers than any rationally-measured potential energy savings. By stifling innovation, the regulations further would interfere with the efficacy of digital TVs for the California consumer. A fair assessment of the facts shows that voluntary market-oriented efforts, in concert with reasonable regulations requiring forced mode menus and automatic shut-off, will result in savings at least as great as those anticipated by the CEC. Consequently, the regulations

cannot be justified and should not be promulgated by the Commission. The costs to consumers, and the unavoidable damage the regulations will cause to technological progress, design freedom, retailer interests, and consumer rights, clearly outweighs any foreseeable benefit.

The Energy Commission disagrees with CEA's assertion. The record demonstrates that the proposed regulations are technically feasible using existing technologies in today's market, cost effective to the consumer, save a significant amount of energy on a statewide basis, and meet the requirements of the Public Resources Code. The record demonstrates that the incremental cost to manufacture energy efficient televisions is negative and/or zero and should not result in higher costs to the consumers.

The record shows that the proposed regulations will not hinder innovations, as the newer television technologies are highly energy efficient and any added innovative features when testing energy consumption will be turned off or disconnected during testing.

As stated above, the energy savings from volunteer and market-oriented programs are insignificant and have failed to stop the growth of television energy consumption for the last several years. The forced menu and automatic shut off features described by CEA are already included in the proposed regulations and Energy Commission cannot double count these savings.

CEA COMMENTS

Point I: The CEC Staff Report findings rely on flawed assumptions, erroneous calculations, and outdated technical data that do not support the proposed regulations.

This comment is not new and has been made repeatedly throughout this rulemaking and has been rejected on the record. As stated above and throughout this response to comments, CEA has not provided any sales or technical data to show that the Staff Report is not based on reasonable assumptions, calculations and updated technical data. CEA's statement is unsupported by the record.

Under California Resources Code § 25402(c), the Commission cannot issue regulations without a clear finding, *inter alia*, that the regulation will not burden consumers with added costs. Pursuant to the California Administrative Procedures Act, such a finding must be supported by substantial evidence. As shown below, the Staff Report provides no such foundation for its regulations.

The Energy Commission's proposed television regulations meet all the requirements of California Public Resources Code Section 25402(c) and the California Administrative Procedures Act. The Energy Commission the issued 45 day language for adoption under the authority provided by California Resources Code Section 25402 (c). The Energy Commission

staff determined by their analysis, based on the information and data in the record, that the proposed regulations are technically feasible, cost effective, and will generate significant energy savings. The record further establishes that the proposed regulations will not be burdensome to the consumers and should not add any cost to replace inefficient televisions with energy efficient televisions. CEA opinion is without basis, as there is no evidence in the record to support the CEA's assertion. (See Staff Report and supporting documentation and the NOPA, ISOR for Docket 09-AASER-1C)

The CEC Staff Report relies almost exclusively on the conclusions supplied by the July 2008 PG&E "CASE" paper. Aside from the questionable value of relying solely on a non-peer reviewed report submitted by a stakeholder with obvious vested interests, CASE suffers from manifold errors, stale data, and fallacious assumptions. The CASE paper provides no reliable estimates of energy consumption or energy savings. Consequently, it provides no sound foundation for the regulations. Knowing of these fatal flaws, any attempt by the Commission to regulate based on the CASE paper necessarily would be arbitrary and capricious.

CEA's statement about the Staff Report is not accurate and is not supported by the record. In the Staff Report, each section was developed by the Energy Commission staff based on evidence, information, responses to inquires, and analysis. This support information is provided in the record and has been discussed in various responses in this document. The assumptions used to model energy savings are widely used and accepted by the scientific community. As stated previously, the regulations use as a baseline data from 2007 from CNET, MTP, PIER, and EICTA, and are supplemented by new studies and data from ENERGY STAR and CNET. Staff has continued (latest date Oct. 30, 2009) to obtain the latest ENERGY STAR data to evaluate the credibility of the original baseline and has determined that the new data not only supports to the baseline but strengthens the Commission's finding that the proposed energy efficiency regulations are credible and feasible. New data has also proved that the PG&E studies used for proposing standards are accurate and credible.

The Energy Commission's Efficiency Committee conducted a workshop in July 2008 and another in December 2008 to discuss the proposed regulations and to receive alternate proposals. Staff conducted various meeting with CEA and its members and requested on many occasions information to support its final analysis, which is the subject of the Staff Report. These data requests started in early 2008. As discussed in the Staff Report and rulemaking documents in 09-AER-1C, the proposed regulations based on the PG&E study were also presented to stakeholders, and have gone through peer review and are well vetted. During this process CEA has not provided and sales, economic, or technical data related to the PG&E CASE study, showing that the study is not a reasonable estimate of energy savings, technically feasibile, and cost effectiveness to the consumer. Staff has continually updated the record with new information from ENERGY STAR and other sources to track the television market during the

course of the development of the television standards. The new data that the Energy Commission has evaluated and is in the record has verified that the PG&E studies used for proposing the standards are accurate and credible.**A. The CEC Study Overstates the Problem to be Solved.**

As one of many flaws, the Staff Report overestimates TV energy use and, thus, inflates the magnitude of the problem it seeks to solve. For example, the Staff Report uncritically repeats estimates that TVs use 10 percent of residential energy.[3] The citation for that assertion, however, comes from an "Issue Paper" issued by the National Resources Defense Council ("NRDC"). While NRDC can hardly be deemed a disinterested or impartial commenter in this proceeding, the Staff ignored that the NRDC figures are facially unsupported and unreliable. The cited NRDC issue paper, now four-and-a-half years old, concerned the energy consumption of set top boxes, not TVs. That issue paper presented neither evidence nor any citation to credible research or studies so as to support that number.

This CEA assertion is not supported by the record.

The record shows that the magnitude of the calculated energy savings (8772 GWh) in the Staff Report is actually conservative, and that the true energy savings may be much higher. The television energy use calculations are given in Table 4, page 11 of the Staff Report. The total demand for residential energy use is approximately 90,000 GWh's and television energy use is approximately 9.8%, or when rounded off it is approximately 10%, and the 10% energy use is not based on the NRDC document. The NRDC paper mentions television and associated equipment use 10% power; however the issue paper uses old data and was published in 2006. The NRDC document is referenced in the Staff Report as a supporting document only and not as the basis for the original analysis.

Whenever the Energy Commission receives studies and data from stakeholders, its engineers conduct an internal review and analysis of the information and research for other data to verify if the studies are credible and based on facts and not simply unsupported opinions. This process is used for evaluating the input of any stakeholder, whether from an environmental group, a utility, or an industry organization such as CEA.

The Energy Commission determined that the NRDC issue paper was based on the research and data collected by NRDC's scientists and not unsupported opinion. The Energy Commission found that NRDC's issue paper supported other evidence in the record that television energy consumption is rapidly growing at an alarming rate.

3 *See*, CEC responses to consumer complaint forms in Docket 09-AAER-1C, asserting "TVs use about 10 percent of the electricity in most homes, … ." http://www.energy.ca.gov/appliances/2009_tvregs/documents/comments/TN%2053260%2009-18-

09%20CEC%20Response%20to%20Complaint%20Form%20from%20R.%20Girling.pdf , and http://www.energy.ca.gov/appliances/2009_tvregs/documents/comments/TN%2053267%2009-18-09%20CEC%20Response%20to%20Compliant%20Form%20from%20D.%20Provenghi.pdf

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

The Energy Commission and NRDC references quoted by CEA are correct.

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.

As already discussed, the Energy Commission's television energy consumption estimates are based on the most recent stock and current per unit energy use. The Energy Commission has determined that there is no information available on the ENERGY STAR website as to what methodology and models were used to calculate the energy use. The ENERGY STAR number is an aggregate of television energy used in the United States and does not accurately reflect television energy use for California. Because of this the Energy Commission rejected the ENERGY STAR data for use in calculating California's energy consumption.

Furthermore, the current California stock is approximately 35.4 million televisions, whereas ENERGY STAR estimates 275 million televisions in the United States. The ENERGY STAR data does not provide what year this data was collected or the source of this data. ENERGY STAR shows a total television energy use of 50 GWh in the U.S. Again, there is no information on how ENERGY STAR arrived at this number. Whereas the Energy Commission staff calculations show that California's total television energy consumption is approximately 8772 GWh/year.

In summary, CEA manufacturers sell almost 4 million televisions in California per year. California has approximately 34 million televisions in use. Although CEA's manufacturers have a large market in California, CEA has not provided any California sales data to show that the Energy Commission's assumptions and analysis are not reasonable and do not support the proposed regulations.

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.

As stated before, the Energy Commission's energy consumption estimates are based on data and reasonable assumptions. These estimates have been vetted through an almost two year rulemaking process under the California Administrative Procedures Act. The Energy Commission considered all studies and information in developing its final Staff Report. (See Staff Report and associated references and the NOPA and ISOR for Docket 0-AAER-1C) The proposed standards are based on existing feasible technologies, are cost effective for the consumer, and will save a significant amount of energy on a statewide basis.

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.

As previously discussed, the record supports that the assertion that the proposed standards are cost effective to consumers, technically feasible with existing technologies, and will save a significant amount of energy on a statewide basis. The proposed regulations are technology-neutral, and some manufacturers are already meeting the proposed regulations while others can easily meet the energy efficiency requirements stated in the proposed regulations. Also discussed, the baseline data used to establish energy consumption has been confirmed as being reasonable for use in the estimates. CEA manufacturers sell almost 4 millions televisions in California per year. California has approximately 34 million televisions in use. Although CEA's manufacturers have a large market in California, CEA has not provided any California sales data to show that the Energy Commission's assumptions and analysis are not reasonable and do not support the proposed regulations.

Also as previously discussed, the Energy Commission has determined that voluntary measures will not remove inefficient televisions from the market and thus regulations are needed. As shown in the record, television energy consumption data shows that since the late 1990's television energy consumption in the home has grown from 3-4% to 10% and continues to grow. It has been determined that volunteer efforts have not stopped this growth. CEA has provided no sales data and energy consumption data to refute the Energy Commission's findings that show that voluntary efforts have been unsuccessful in preventing and stopping the fast increase in residential television energy consumption.

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 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-consumptionchart/? 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.

As already discussed in detail, the record shows that the proposed regulations use as a baseline data from 2007 from CNET, Market Transformation Program (MTP), Public Interest Energy

Research (PIER), European Information and Technology industry Association (EICTA). (see Staff Report page XX) The record also shows that the baseline has been supplemented with new studies and data from ENERGY STAR and CNET. Staff has continued (latest date Oct. 30, 2009) to obtain the latest ENERGY STAR data to evaluate the credibility of the original baseline. (Staff has determined that the new data not only supports the 2007 baseline but this data strengthens the Commission's finding that proposed energy efficiency regulations are credible and feasible. This has been demonstrated by the fact the new data

The Energy Commission has determined that the new data corroborates that the PG&E studies were used for proposing the standards were accurate and credible. This has been demonstrated by the fact the new data

Furthermore the Energy Commission finds that the assumptions used to model energy savings in its studies are widely used and accepted by the scientific community. CEA statements have not been supported by California sales data to show that the Energy Commission's assumptions and analysis are not reasonable and do not support the proposed regulations.[19]

• Estimates TV purchasing trends using a 2007 study from a consulting group, "DisplaySearch Global TV Shipment and Forecast Report"

Display Search[20] is a widely known and reputable consulting group that collects television. Display Search rigorously and aggressively cover the display industry to ensure that the most accurate data is available to its customers. CEA has not provided any evidence that CEC or PG&E should not use Display Search data in their analysis. CEA manufacturers sell almost 4 million televisions in California per year. California has approximately 34 million televisions in use. Although CEA's manufacturers have a large market in California, CEA has not provided any California sales data to show that the Energy Commission's assumptions and analysis are not reasonable and do not support the proposed regulations.

• 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]

The Energy Commission used information from CNET, Market Transformation Program (MTP), Public Interest Energy Research (PIER), European Information and Technology industry Association (EICTA) as the baseline. (see Staff Report page XX) The record also shows that the baseline has been supplemented with new studies and data from ENERGY STAR and CNET. CEA manufacturers sell almost 4 millions televisions in California per year. California has approximately 34 million televisions in use. Although CEA's manufacturers have a large market in California, CEA has not provided any California sales data to show that the Energy

[19] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF
[20] http://www.displaysearch.com/cps/rde/xchg/displaysearch/hs.xsl/8132.asp

Commission's assumptions and analysis are not reasonable and do not support the proposed regulations.

• 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.

Note 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.

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

Note 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.

The Energy Commission based it analysis on various assumption that have been identified and discussed in the comment. These assumptions have been vetted through a rulemaking process that has been almost two years long, and many stakeholders have commented or provided addition data. CEA manufacturers sell almost 4 million televisions in California per year. California has approximately 34 million televisions in use. Although CEA's manufacturers have a large market in California, CEA has not provided any California sales data to show that the Energy Commission's assumptions and analysis are not reasonable and do not support the proposed regulations.

• 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**

The Energy Commission based it analysis on various assumption that have been identified and discussed in the comment. These assumptions have been vetted through a rulemaking process that has been almost two years long and many stakeholders have commented or provided

addition data. CEA manufacturers sell almost 4 million televisions in California per year. California has approximately 34 million televisions in use. Although CEA's manufacturers have a large market in California, CEA has not provided any California sales data to show that the Energy Commission's assumptions and analysis are not reasonable and do not support the proposed regulations.

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… ."

The statement relates to PG&E and State policy regarding legal liability, and is considered "boilerplate language.". It has nothing to do with the cost effectiveness, technical feasibility, and energy savings analysis and record used for the proposed regulations. Furthermore, as stated above the Energy Commission's staff engineers have analysis all studies and data submitted to it prior to accepting such data. All this has been vetted through the rulemaking process. There have been no facts or data provided to the record to show that the Energy Commission's Staff Report is not reasonably based on facts, data and assumptions.

CEA suggests the Commission would be better advised to take PG&E at its word. By using these old, outdated figures based on pre-Energy Star 3.0 TVs, the CASE paper grossly overstates the current level of energy consumption and potential energy savings.

Again CEA has not provided any California sales data to show that there is no reasonable basis for the analysis in the Energy Commission's Staff Report.

C. By adopting the outdated CASE data, the Staff Report artificially inflates the estimated energy "savings" from regulation.

As already discussed, the record shows that the calculated energy savings in the Staff Report are accurate and credible, and based in fact and reasonable assumptions. The energy savings analysis is based on the 2007 data and corroborated with 2009 data. The new data further strengthens and confirms that the energy savings model used by the Energy Commission is accurate. Again CEA has not provided any California sales data to show that there is no reasonable basis for the analysis in the Energy Commission's Staff Report.

Energy "savings" must be measured against a baseline starting point. If the baseline is inflated, so are the "savings." If the baseline is lower, the savings too are less.

CEA's comment indicates that CEA misunderstands that lowering the baseline would increase the savings because there would be a larger difference between the baseline and proposed energy standard level. Notwithstanding that comment, as discussed before the record supports that position that the current television energy consumption in California is about 10% of residential energy use, and thus is that appropriate baseline. Without regulations the energy consumption will grow to 18% by 2023. The proposed regulations will slow the growth in energy consumption and will save 8% in energy consumption by 2023.

By uncritically adopting the CASE estimates, the Staff Report exaggerates the baseline of current energy usage. Consequently, the Staff Report and the NOPA grossly overstate the potential energy savings from the proposed regulations.

As already stated, the calculated energy savings in the Staff Report are supported by facts, studies, and assumptions. These assumptions have been vetted through the rulemaking process that has been almost two years long and many stakeholders have commented or provided addition data. CEA manufacturers sell almost 4 million televisions in California per year. California has approximately 34 million televisions in use. Although CEA's manufacturers have a large market in California, CEA has not provided any California sales data to show that the Energy Commission's assumptions and analysis are not reasonable and do not support the proposed regulations.

CEA provided the following data analysis:

[7] **These figure are based on an analysis of power saved from December 2007 to October 2009, based on Energy Star datasets by size range. The analysis applies a size-based sales weighting based on CEA 2008 sales data, as follows:**

-- 27,688,156 televisions were sold in the U.S. in 2008
-- Power Consumption: 5,034,956 kW, based on the Energy Star December 2007 dataset
-- Power Consumption: 3,558,724 kW, based on the October 2009 Energy Star database
-- Power Saved: 1,476,232 kW, from one year sales of improved TVs
-- Energy Saved: 2,695,968,870 kWh/year, from improved TVs, assuming 5 hours per day on time.

The Energy Commission has determined that the energy savings analysis provided by CEA cannot be used because: (1) CEA is quoting the U.S. television sales number from 2008 not California sales; (2) CEA failed to identify how many televisions of each size were sold in California; (3) no California energy consumption numbers were provided; (4) no estimates of television efficiency for non ENERGY STAR data were provided; and (5) the December 2007 and October 2009 ENERGY STAR television power consumption data do not provide information as to how many televisions are in California that consume the stated power. The Energy Commission has determined that California households currently have 35.4 million televisions. The CEA analysis does not provide a basis for the relationship between the

ENERGY STAR power consumption data provided and California's existing stock. Although CEA's manufacturers have a large market in California, CEA has not provided any California sales data to show that the Energy Commission's assumptions and analysis are not reasonable and do not support the proposed regulations.

CEA stated that Over this 22 month time frame, the industry reduced power consumption of the average television by 29.3% (sales weighted). This also can be stated as a 41.4% efficiency improvement 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

These comments are not new and have been made repeatedly throughout this rulemaking and have been rejected on the record. The record shows that this statement is misleading as it appears to tie efficiency improvements to overall energy savings. Prior to November 2008, ENERGY STAR only required standby energy use of 3 watts or better to meet the qualifications. In November 2008, ENERGY STAR qualifications (Version 3) added power consumption to the standby requirement. The modest power consumption requirement did not require any hardware changes for televisions. ENERGY STAR Version 3 has been met with software changes that dim the panel and use less energy. ENERGY STAR Version 4 (equivalent to the Tier 2 level), which will be effective in May of 2010, will require hardware changes to the televisions based on technology that is being use on some televisions today.

The Energy Commission estimates that the energy consumption of televisions between the years 2007 and 2009 have increased even though CEA states that the energy consumption of ENERGY STAR digital TVs has improved by more than 41 percent.There appear to be some missing pieces to CEA's statements, as ENERGY STAR improvements have not stopped the increase in residential energy consumption.

Those missing pieces are that ENERGY STAR is a voluntary incentive program that is administered by the U.S. Department of Environmental Protection Agency. Governments in many countries, such as those in the European Union, Australia, China, India, and Japan have already passed regulations mandating limits on television energy consumption. In order to sell their products, manufacturers are required to reduce television energy consumption.

Although the ENERGY STAR program does promote technologies, it costs consumers a premium. CEA statements made at a California Senate Subcommittee hearing on October 21, 2009 were that although the costs of manufacturing an efficient television may be the same as those for an inefficient television, the manufacturers charge a premium for an ENERGY STAR-labeled television to recover their research and development expenditures.

The record supports the Energy Commission's analysis that the cost to manufacturer a television to meet the efficiency standards will not result in an incremental cost. Furthermore, the record has established that there will be no added ENERGY STAR premium to the customer because meeting the efficiency levels will not qualify the television for the ENERGY STAR program. The results for the customers buying televisions meeting the efficiency standards are annual energy savings due to increased energy efficiency, and a purchase price that is the same as a similarly-optioned inefficient television being sold in California today, because there will be no ENERGY STAR premium cost added by the manufacturers. (See Staff Report pg xxx)

Additionally, the record shows that the ENERGY STAR program will not convert the entire market to the more efficient televisions being required by the efficiency standards. There would be a significant loss of energy savings in California with an ENERGY STAR-only program. CEA's comments include a report by Fraunhofer Center for Sustainable Energy that used basis from the PG&E study to show energy savings in a voluntary market. Page 18 of the Fraunhofer report, Figure 4:Projections for Portion of Annual Sales Meeting Energy Star v 3 and 4 specifications shows the lost energy savings in this voluntary program. The graph for LCD v 3.0 shows that about 95 percent of the televisions will meet our Tier 1 efficiency, which is based on ENERGY STAR Version 3.0. The Tier 1 standard will achieve 100% ENERGY STAR compliance for televisions being sold in California, which is an additional 5% energy savings from the voluntary program for years 2001 to 2013.

The line for LCD v 4.0 is ENERGY STAR Version 4.0, which is similar to the Tier 2 efficiency standards which will be effective beginning in 2013. The graph for the LCD v 4.0 from 2013 (shows only a 45% compliance) through 2018 and beyond shows a maximum compliance level of 70% and then levels off with no more increase in compliance levels. Tier 2 (which is equivalent to ENERGY STAR Version 4.0) requires 100% compliance starting in 2013. There is significant additional energy savings from 2013 through the Tier 2 efficiency standard as represented by the area above the LCD v 4.0 line up to the 100% line. In addition to the analysis in the Staff Report, this table supports the conclusion that the Tier 1 and Tier 2 standards will obtain significant additional energy savings above those derived solely from the projected ENERGY STAR savings.

As is evident from the growing ranks of Energy Star TVs, the fact is that substantial improvements already have been achieved, voluntarily, by TV manufacturers to reduce energy use. In the absence of government regulations, TV manufacturers expect additional energy reductions to continue. The Energy Star data from December 2007 to October 2009 show a total 41% increase in efficiency, or approximately 22% per year.[7] A manufacturer of LCD TVs reports that it expects screen power efficiency to improve 15% per year. Other manufacturers of plasma and LCD TVs expect annual energy savings of 17% through 2010.

See response directly above and in responses in this document.

As noted in the previous section, the PG&E CASE paper caveats virtually each of its power consumption and savings estimates with an admission that their estimates do not reliably or reasonably reflect current TV energy consumption. On each chart that purports to demonstrate its conclusions on energy consumption and savings, PG&E states that its analysis "*does not account for natural market adoption of higher efficiency models*" or the 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]

CEA is pointing out that the PG&E report "caveats virtually each of its power consumption and savings estimates with an admission that their estimates do not reliably or reasonably reflect current TV energy consumption "does not make the energy savings estimates and data in the report inaccurate. CEA has not provided California sales data for natural market adoption of higher efficiency models for California to discredit PG&E energy savings estimates.

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.

As stated through this document many times, the Energy Commission's proposed regulations are based on the accurate and credible information and data in the record. CEA has failed to provide substantiating evidence in support of its comments.

CEA stated in footnote 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**.

The ENERGY STAR specification 3.0 provides a higher allowance for large size televisions and this specification 3.0 is so relaxed that the most inefficient televisions qualify for the sticker. PG&E's rebate program has limited funding when more television models qualified for a rebate, and PG&E has revised its rebate requirements. What this demonstrates is that PG&E's rebate

program staff relied upon ENERGY STAR; however, once they found out that those ENERGY STAR specifications are not much more relaxed than proposed Tier 1 regulations and rate payer's money is being wasted, PG&E had to revise its requirements. HARINDER WE NEED REFERENCE

CEA stated in footnote 9: [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).

This comment is incorrect. The calculated energy savings starts to accumulate from the effective date, and will continue until all the stock is replaced. (See Table 8 from PG&E's CASE report.) The calculated average energy savings each year is about 6515 GWh/year and 10 year energy savings value is about $8.1 billion. (see Staff Report) CEA has not submitted any data or evidence in support of their comment and the process by which they arrived at their conclusion.

CEA stated: **Correcting the savings estimates (even assuming the figures were reliable, which they are not) so as to reflect a progressive savings from 2011 to 2022, *reduces the CEC estimate of $8.1 billion in savings to $3.5 billion. See* LECG Report and Exhibit 2.**

As discussed above, CEA misinterprets Table 8 from PG&E's CASE report. Because of this mistake CEA misstates the Energy Commission's assumptions in the LEGG report. The savings are estimated as 8 billion dollars and CEA's calculation of 3.5 billion is not correct.

The Energy Commission's net present value (NPV), calculated as the value of the proposed regulation, is based on a complete California stock of Tier 2 compliant televisions by the year 2023. Each time a Tier 2-compliant television is sold the NPV of the energy savings from that television is added to the total value of the regulations. This occurs until all televisions are Tier 2 televisions and begin to be replaced with like-kind Tier 2 televisions. The Energy Commission estimates over 40,000,000 Tier 2-compliant televisions to be sold by 2023 and that the energy savings from these more efficient televisions to be 6,515 GWh/year. This leads to a monetary savings of $912.1 million/year at $0.14 per kWh.

The value of saving 1 kWh/year over 10 years at $0.14/kWh is in simplistic terms 10 x 0.14 = $1.40. However it is generally accepted that a dollar earned today is worth more than a dollar earned tomorrow as you can earn future interest on money by investing the dollar today. To account for this factor the Energy Commission made a NPV calculation using a 3% discount rate which alters the value of saving 1 kWh/year over 10 years from $1.40 to $1.24.

The resulting $1.24 value is then multiplied by the savings of 6,515 GWh (1 GWh = 1,000,000 kWh) and the result is $8.1 billion.

Staff used the 2007 electric rate of 0.14.1¢ KWh to calculate the energy savings. Current baseline Tier 1 electric rate is 18¢ Per KWh. Tier IV rate is 0.37.8¢ per KWh and Tier V rate is 0.44.09¢ per KWh. The television energy consumption was 3% in late the 1990's and over the last ten years it has grown to 10%, and without regulations it will grow to 18%. Higher Tier rate will apply to higher energy consumption. With the corrected rate structure $8.1 billion will grow to higher energy savings.

Using the electric rate without the discount rate to calculate the energy saving value of this regulation, energy savings value at 0.14¢ = 6515X1.40¢ = $9.1 billion.

Using the current Tier I electric rate of 18¢ = 6515X1.80¢=$11.7 billion, if the proper Tier rates are calculated and applied to 6515 GWhs then this $11.7 billion will grow to a much higher dollar value number.

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.

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This has been responded to in detail above and there is no reason to repeat the discussion.

1. The Staff Report's mathematical misinterpretation.

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.

This has been responded to in detail above and there is no reason to repeat the discussion.

2. The Staff Report's conceptual mistake.

To determine the net present value of the estimated energy savings, the CEC applied a discount rate of 3 percent. While CEA cannot state the actual cost of capital to the California consumer, no one realistically could contend that a consumer could obtain credit at a 3 percent rate. A 3 percent rate essentially reflects a risk-free rate to obtain capital, which no consumer could obtain. The average rate of interest on credit card debt in California is more than 13%. By assuming an unrealistically low discount rate, the CEC Staff Report artificially inflated its energy savings estimates. Assuming a more appropriate 10 percent discount rate, *the energy savings that the CEC Staff should have calculated using the CASE paper's figures would have been $2.4 billion*.[10]

CEA has wrongly used consumer credit card financing used to purchase a television as the discount rate in estimating the cost savings for the homeowner due to the energy savings from using a more efficient television. Although this error was pointed out to CEA during the Senate Subcommittee hearing on October 21, 2009, it was not remedied in the comments provide to the Energy Commission on November 3, 2009. (See Legislative Hearings DVD???) CEA has not provided in the record any sales data, existing or projected, to support their assertion that the Energy Commission's estimates are not an accurate estimate of existing and projected television energy consumption and potential cost savings for the homeowner and the state.

3**. Adjustment for already-occurring improvements.**

As noted above, the PG&E CASE paper clearly overstated the baseline television energy consumption (thus exaggerating potential energy savings) because it did "not account for natural market adoption of higher efficiency models." The LECG Report addresses this additional shortcoming, albeit also in a very conservative way.

Foot note 10 *See* LECG Report and Exhibit 3. Even this 10 percent assumption is likely to be lower than a true consumer discount rate. Using a higher figure, which more realistically represents the actual cost of capital to consumers, results in even lower potential energy savings from the proposed regulations. annual savings *for every LCD set sold in the state of California from 2011 through 2022* (CASE, Tables 6 and 7). The savings from Tier 2, which begins in 2013, would similarly be reduced due to this "natural market adoption of higher efficiency models."

The record has established that the baseline is an accurate assessment of energy consumption as corroborated by the most recent 2009 energy data. The energy saving calculations of 6.5 TWh a year are still accurate and correct. CEA's statement that natural market adoption of high efficiency models is vague and not supported by data in the record. CEA failed to provide the following data to support is statements:

- Which models is high efficiency?
- What is the base line for high efficiency model?
- What size range is being selected as high efficiency?
- How many high efficiency models are being sold in California?
- How many high efficiency models are currently in use in California?

Without such information the Energy Commission cannot determine what are the natural market adoption trends. CEA's comments include a report by Fraunhofer, which is discussed in detail above. In summary this report estimated ENERGY STAR growth which fell far short of meeting the goals of 100% compliance of the Tier 1 and 2 standards. This report suggests at a minimum that natural market adoption trends do not meet levels for 100% compliance of the Tier 1 and 2 standards.

LECG's adjustment was based on input from TV manufacturers suggesting that it was reasonable (in fact, conservative) to state that they had achieved a 17 percent annual increase in television energy efficiency for their 2009 and 2010 TVs. Lacking actual information beyond 2010, LECG assumed only a continuing minimal annual increase of 1 percent from 2011 through 2022. The near term drop is based on input received from manufacturers and expected voluntary movement in the market toward compliance with the Energy Star 3.0 standard, whose on-mode power consumption level is similar to that for the Commission's proposed. Tier 1 standard. As the Staff Report noted (p. 36), Energy Star's own estimates for Energy Star 3.0 compliance have proven to be "an extreme underestimation." And the Fraunhofer Center's study conservatively projects that 95 percent of LCD TVs and 73 percent of PDP TVs would meet the Energy Star 3.0 standard before 2011.

The Energy Commission cannot base its standards on the unsupported suggestions of manufacturers regarding what they have achieved in annual increases in television energy efficiency for their 2009 and 2010 TVs. The manufacturers sell televisions in California and they have not provided any sales data to show that the Energy Commission estimates are not reasonable. The LECG report use assumptions and are not based in sales data.

Consequently, the LECG study is based on the recognition that implementation of the Tier 1 standard would have *no* impact on the average power consumption by LCD TVs, in

contrast to PG&E's assumption, relied upon by the CEC, that Tier 1will create 97.2 kW/hr per set

The statement is based on the assumptions that criticizes the PG&E CASE study, however the LECG study has not provided data in support of their assertion.

When this flaw is corrected, the present value of the regulations energy savings to consumers (at a 10 percent discount rate) is revealed as *not* $8.1 billion but, rather, $548 *million*. *See* LECG Report and Exhibit 4. As the LECG Report observes, the actual net present value savings that might be enjoyed by the TV purchaser would be outweighed by a cost to the consumer of $17. And, as shown below in section F, $17 is well below the actual price impact of compliance with Energy Star 3.0 and beyond, which can be hundreds of dollars per TV.

In sum, when the potential energy savings from the regulations are correctly calculated from a rational assessment of the per-set energy consumption baseline, it is clear that the cost of the regulation to consumers far outweighs any potential energy savings. Therefore, the Commission cannot as a matter of law proceed based on its current analysis with its proposed regulation.

As stated above in the Energy Commission's responses, there is no mistake in the calculations in the Staff Report. It appears that CEA and Paul Wazzan misunderstand how the net present value (NPV) is used the Staff Report. The NPV was calculated as the value of the proposed regulation based on a complete California stock of Tier 2-compliant televisions by the year 2023. Each time a Tier 2-compliant television is sold the NPV of the energy savings from that television is added to the total value of the regulations. This occurs until all televisions are Tier 2 televisions and begin to be replaced with like-kind Tier 2 televisions. The Energy Commission estimates over 40,000,000 Tier 2-compliant televisions to be sold by 2023 and that the energy savings from these more efficient televisions to be 6,515 GWh/year. This leads to a monetary savings of $912.1 million/year at $0.14 per kWh.

Consumers save energy on their televisions for the design life of the television, which is estimated to be 10 years. To calculate the energy value of switching 40,000,000 televisions to Tier 2 levels for 10 years the Commission uses a NPV calculation. The value of saving 1 kWh/year over 10 years at $0.14/kWh is in simplistic terms 10 x 0.14 = $1.40. However it is generally accepted that a dollar earned today is worth more than a dollar earned tomorrow as you can earn future interest by investing the dollar today. To account for this factor the Energy Commission made a NPV calculation using a 3% discount rate which alters the value of saving 1 kWh/year over 10 years from $1.40 to $1.24.

The resulting $1.24 value is then multiplied by the savings of 6,515 GWh (1 GWh = 1,000,000 kWh) the result is $8.1 billion.

Staff used 2007 electric rate of 0.14.1¢ KWh to calculate the energy savings $'s. Current baseline Tier 1 electric rate is 18¢ Per KWh. Tier IV rate is 0.37.8¢ per KWh and Tier V rate is 0.44.09¢ per KWh. The television energy consumption was 3% in late 1990's and over the last ten years it has grown to 10% and without regulations it will grow to 18%. Higher Tier rate will apply to higher energy consumption. With the corrected rate structure $8.1 billion will grow to higher energy saving.

To demonstrate the $8.1 billion is a conservative number, let's use the electric energy rate without the discount rate to calculate the energy saving value of this regulation. Energy savings value at 0.14¢ = 6515X1.40¢ = $9.1 billion.

Now use the current Tier 1 electric rate of 18¢ = 6515X1.80¢=$11.7 billion, if the proper Tier rates are calculated and applied to 6515 GWhs then this $11.7 billion will grow to a much higher $ number.

As stated before the Energy Commission Staff Report has established and staff engineers have determined based on the technical analysis that the proposed standards are technically feasible, cost effective, and save significant energy.

E. Had the Staff correctly calculated these estimates, even based on the flawed CASE paper, the Staff should have supported CEA's market-based approach.

The Energy Commission technical staff has conducted through and rigorous analysis based on the credible data and determined that the proposed regulations are technically feasible, cost effective, and save significant energy. The Energy Commissions has made extensive comments concerning the market-based voluntary approach in this document. There is no data in the record that the Energy Commission has found that would support a conclusion that a market-based approach would obtain sufficient energy savings to meet the 100 % compliance rate of the Tier 1 and Tier 2 standards. Furthermore the record shows that such program has been the only program for the last 10 years andhas resulted in growth rates from 3% to 10% in home energy consumption by televisions.

In its summary of Stakeholder Comments and Responses, the Staff Report dismisses the recommendations of the CEA, the Custom Electronic Design and Installation Association (CEDIA), the Consumer Electronics Retailers Coalition (CERC), the California Retailers Association (CRA), Cyber Manor, Rich Green Ink, Best Buy Inc., Independent retailers, and the Plasma Display Coalition, to forego regulation in favor of following the current marketplace improvements. These comments represent the informed views of businesses and individuals who have actual hands-on experience with the design, manufacture, and marketing of digital TVs, and with consumer response to product features and designs, and to product information.

The Energy Commission has not dismissed any commenters. Energy Commission staff reviewed and considered all comments and supporting data, facts, studies, and expert opinion to support the proposed standards.

Using the Energy Star 2007 Annual Report of expected nationwide energy savings, the Staff estimated that "the voluntary ENERGY STAR program would only obtain 27 percent of the calculated $8.1 billion in potential energy efficiency savings for the consumer that would result from the proposed efficiency standards." Staff Report at 28. However, had the Staff not made the mathematical and conceptual errors in its report as noted above, it would have calculated energy savings of $2.4 billion from the proposed regulations – a figure that is 29 percent of the demonstrably inaccurate $8.1 billion estimate. (And, of course, no one disputes that even the 2007 Energy Star Annual Report underestimates actual energy savings, since it did not anticipate the rapid pace of energy improvements achieved by TV manufacturers through October 2009.)

The CEA's comment related to page 28, where staff states that "Energy Commission staff investigated, as an alternative to the proposed efficiency standards, the energy savings expected from relying only on the U.S. EPA's voluntary ENERGY STAR Program for televisions. As a result of that investigation staff determined that the voluntary ENERGY STAR program would only obtain 27 percent[71] of the calculated $8.1 billion in potential energy efficiency savings for the consumer that would result from the proposed efficiency standards" shows that Energy Commission technical staff has analyzed, thoroughly and rigorously, every piece of data, evidence, and information available in the record.

As stated previously the Energy Commission has found no mathematical or conceptual error in its analysis and has pointed-out the misunderstandings of Paul Wazzan's as to the methods used to estimate energy savings.

There is no ENERGY STAR stock and sales data in the record to determine energy savings, for California, from this voluntary program. Moreover, the ENERGY STAR program took effect in November 2008 and the Staff Report was completed in September 2009, after 10 months. The current California television stock is non-ENERGY STAR. ENERGY STAR program's impact on the current energy consumption cannot be determined without California share sales and stock data. CEA's has not provided any California sales data to back up the assertions.

By using corrected calculations from the Staff's own numbers, the Commission is left with the task of justifying its overly stringent regulatory mandates based on only a possible two percent (2%) improvement in energy consumption.

As discussed above, the record supports the Staff Report calculations as reasonable assumptions. Also discussed above, the technical analysis conducted by the Energy Commission's Engineers finds that there is no error in the energy savings calculations. CEA's assertion of 2% improvement in energy consumption is baseless and unsupported by the record.

Indeed, the NOPA, states (at p. 16) an alternative Staff conclusion that Energy Star compliance would achieve 35% of the claimed $8.1 billion savings from the regulation. Had the Staff used more current data rather than the outmoded assumptions from the PG&E CASE paper, this 35% would eradicate *any* claimed savings from the regulations.

In sum, based solely on correcting erroneous calculations and assumptions, the Commission cannot conclude that the record supports *any* of the determinations in the Staff Report, including its determination that "no alternatives to the proposed action… would be more effective, or as effective and less burdensome" than the proposed regulations. To the contrary, the Commission has no evidence to dispute that the alternative proposals by CEA, and the many manufacturers, associations, and retailers who are intimately involved and deeply knowledgeable about digital television, will achieve results at least as robust as the CEC regulations, without incurring any of the risks or costs.

This comment is based on assumed errors that the Energy Commission has discussed above in detail, which are not supported by the record.

The Energy Commission has also determined and discussed above that there is no ENERGY STAR stock and sales data in the record to determine energy savings, for California, from this voluntary program. Moreover, the ENERGY STAR program took effect in November 2008 and the Staff Report is completed in September 2009, after 10 months. The current California television stock is non-ENERGY STAR. ENERGY STAR program's impact on the current energy consumption cannot be determined without California share sales and stock data. CEA's assumptions are not supported by the record.

F. The CEC's wishful thinking as to the costs of compliance and the costs to consumers ignores the facts.

The CEC Staff Report recognizes that "the cost of compliance can be negative, zero, *or positive*, depending on the route a manufacturer chooses to pursue." Report p. 14 (emphasis added). Nevertheless, CEC asserts that it "*assume[s]* that there is no unit price increase as a result of compliance and that competition will continue to keep prices stable." CEC suggests, with little evidence, that "there will be no increase in the purchase price of televisions due to the proposed efficiency standards because existing technologies …reduc[e] the total cost to build the television." Report p.13 (emphasis added). In other words, the CEC pins its regulations on two false hopes: that energy saving technologies reduce the costs to manufacture TVs; and that competition will cause manufacturers to absorb the additional costs of energy-saving technology.[11] Such hopes, however, cannot mask the true costs that compliance with the regulations will foist on manufacturers and consumers.

As discussed above, the Energy Commission staff has analyzed the data, evidence, and information in the record and has determined that the incremental cost to comply with the

proposed regulations is either negative or zero. CEA and manufacturers have not provided manufacturing cost data to show that the Energy Commission incremental cost estimate is not reasonable. The Energy Commission estimated incremental cost is based on making an inefficient television meet the Tier 1 and Tier 2 standard, but not to exceed those standards. The record shows that using special plastic film, such as that from 3M, reduces the cost of the television because 40 % less backlighting is needed with a resulting incremental cost being negative or zero. Some manufactures submit their comments stating light emitting diode (LED), liquid crystal display (LCD), and hot cathode fluorescent light (HCFL) televisions cost more. This is true, however televisions equipped with these technologies already comply with the proposed regulations and no efficiency improvement is required in these televisions to meet the regulations. Thus, the incremental cost for these televisions is zero. Evidence in the record also shows that the incremental cost for cold cathode fluorescent lamp (CCFL) equipped televisions is negative or zero because they already meet the standards. Plasma television efficiency improvement has no incremental cost either. [21]

Foot Note 11: The Staff also incorrectly suggested at the October 13th hearing that some 297 sets already meet the Tier 2 regulatory requirement. These sets meet only the Standby-passive mode and On-Mode test for power consumption. If tested for compliance with the other elements of the Tier 2 regulation (including luminance, auto power down, and power factor correction), virtually none of those sets could be on the market today under the Tier 2 regulations. Moreover, while noting that many of these sets are some percentage away from meeting the On-Mode tests, the Staff apparently presumes, without evidence and contrary to actual experiences described below, that these additional improvements can be achieved with little effort or cost.

CEA has not submitted any data or evidence identifying which out of 297 ENERGY STAR televisions will not comply with Tier II. The record, based on ENERGY sSTAR data showed that these 287 sets meet the Tier 2 active mode energy levels standard. The Energy Commission has not received any evidence to suggest that manufacturers are providing false ENERGY STAR data to the U.S. EPA.

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Further, CEA understands that one or more manufacturers do not agree with specific comments by the Staff concerning the current state of Energy Star 4.0 compliance of certain of their models, and that the Staff has both overestimated the current state of compliance and underestimated the difficulty and expense involved in achieving those specifications.

[21] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF Page 14 and Page 19

CEA's has not identify the manufactures, what they do not agree with, or what models are being discussed. The Energy Commission staff is unable to respond to the statement. However, this comment seems to be in opposition to CEA position that the ENERGY STAR program works and that this voluntary program would accomplish large energy savings.

1. The CEC's erroneous assumptions as to the costs of compliance among DTV technologies ignore the true costs to manufacturers.

The many innovations in energy savings achieved to date by TV manufacturers did not just sprout up overnight. Virtually since the introduction of digital TV technology, manufacturers began investing in technologies to reduce energy consumption. Most TV manufacturers sell their TV models in a global market. Many of these manufacturers' major markets (in some cases, their home markets) import almost all their energy needs; and many of these countries recognized before the United States the crucial need to conserve energy. The breakthroughs achieved by TV manufacturers resulted from many years of research and development, many tens of millions of dollars of investment, and experience in manufacturing millions of units.

The costs to develop these technologies are only the beginning. Material and manufacturing costs can be very significant. For example:

• A leading LCD digital TV manufacturer compared its costs for two LCD TVs of the same screen size with similar features, one using backlighting with the higher energy consumption CCFL lighting, and the other using lower-consumption HCFL technology. Between those two models, the manufacturer reported that:

- **Costs for the TV screen panel are 32% higher**
- **Costs for the electronics are 10% higher**
- **The price of the TV is $200 higher (12% more than the comparable CCFL model)**

The estimated annual energy savings to the consumer from use of that compliant TV was $8.16. If we assume, as does the CEC, that a TV has a 10-year life, and that the net present value of energy savings should be calculated using a 3 percent discount rate, the consumer who purchased the compliant TV would experience a net loss of approximately $128.31. If we assume that the average digital TV has a shorter life in the home, and that consumers pay more for the cost of credit than just 3 percent, then that loss is even greater.

Evidence in the record supports the assertion that the incremental cost for CCFL equipped televisions is negative or zero[22]. Sony has HCFL televisions which sell at a higher price and complies with Tier II of the proposed regulations. There is no incremental cost required for

[22] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF Page 14 and Page 19

HCFL televisions to meet the proposed Tier II regulations. CEA and Sony are mixing two different technologies to justify the proposition that there is an incremental cost to improve the efficiency of their televisions. Sony's choice to replace the low cost CCFL technology with a costly HCFL technology to comply with the regulations is their business choice.

CEA and Sony are providing an inappropriate example to show the incremental cost for energy efficient televisions is $200. Sony's Tier II compliant televisions require no improvement to meet the regulations. Hence, CEA and Sony fail to establish via their example that the incremental cost to comply with the regulations is more than zero.

Also discussed above, manufacturers charge a premium for ENERGY STAR televisions to recover their research and development expenditures, even if the television does not cost any more to make that an inefficient one. However this premium added cost does not apply to the proposed standards because neither Tier 1 nor Tier 2 meet the levels for ENERGY STAR compliance for this premium to apply. Also, because both Tier 1 and Tier 2 are based on technologies that are current being marketed, there is not need for new research and development expenditures to meet the standards.

As discussed above, CEA's economist mistakenly analyzed the purchasing of a television with a credit card when discussing the 3% discount rate used by the Energy Commission to estimate energy savings to the customer in purchasing electrical power for an energy-wasting television. The error was pointed out to CEA at the October 21, 2009 Senate Subcommittee hearing but is still used in their comments submitted on November 3, 2009.

• Another manufacturer informs CEA that the costs of using LED backlighting technology in its LCD TVs run:

- **$10-30 for TVs less than 26"**
- **$35-60 for TVs between 26" and 32"**
- **$130 for a 42" TV**
- **$160 for a 46" TV**
- **$250 for a 55" TV**

The efficiency levels for LED technologies televisions already far exceed the proposed Tier 1 and Tier 2 efficiency level and thus there is no incremental cost to meet the efficiency standards, because no improvements are needed. CEA states that using LED backlight technology costs more, but is not because of the proposed standards. It is a manufacturer's choice to use a more expensive technology than needed to comply with regulations. As stated above, the incremental cost to improve an inefficient television to meet the Tier 1 and Tier 2 standards are negative to zero.

That manufacturer further states the costs for using CCFL backlighting as:

- **$10-15 for a 42” TV**
- **$30-40 for a 46” TV**
- **$40-50 for a 55” TV**

CEA states that CCFL backlight technology costs more, but that is not because of the proposed standards. It is a manufacturer’s choice to use a more expensive technology than needed to comply with regulations As stated above, the incrementals cost to improve an inefficient television to meet the Tier 1 and Tier 2 standards are negative to zero.

Similarly, the CEC does not take into account the costs to manufacturers of licensing or purchasing energy efficient technologies from third parties. For example, one manufacturer informs CEA that the film technologies for LCD TVs cited in the Staff Report burden TVs with the following costs:

- **For less than a 32” TV -- $1-3**
- **For a 32” TV -- $5-7**
- **For a 42” TV -- $10-15**
- **For a 55” TV -- $25-35**

There is nothing in the Energy Commission record that supports the CEA’s statement. Information in the record has established that the cost to improve efficiency in CFL is negative to zero. CEA has not provided data or evidence, reasons, or details to verify their assertion.

The Commission also ignores that the obligation to implement energy-saving technologies may, by creating artificial demand for the technologies, increase the incentive to *raise* the price of these technologies. TV manufacturers unfortunately have experienced in other contexts how technology mandates result in exploitative price gouging by patent owners, which substantially increases the price of certain government-mandated features that most consumers never even use.

Tier 1 of the proposed regulations will take effect on January 1, 2011, and Tier II will take effect in 2013. The television manufacturers have time to procure the hardware necessary to improve efficiency of their televisions, which are technologies that are already used in televisions they sell today. CEA’s assertion fails to justify the notion of incremental cost increases to improve television energy efficiency based on the possibility of price gouging The Energy Commission has determined that the energy savings to the consumer of approximately one billion dollars per year is a significant energy savings.

Moreover, the rate of energy reduction and the costs of compliance are likely to be very different for each technology. As a result, the CEC ignores the disproportionate impact that its one-size-fits-all regulation will impose on certain manufacturers. These are the types of risks faced by manufacturers by performance-based mandates. In contrast, other measures suggested by CEA have far less of a cost impact, but achieve substantial energy savings. Manufacturers report that automatic brightness controls, as noted above, can reduce energy consumption by 10-15 percent, but cost manufacturers about $3 regardless of the size of the set.

Evidence in the record shows that the incremental cost for cold cathode fluorescent lamp (CCFL) equipped televisions is negative or zero. Plasma television efficiency improvement has no incremental cost either.[23] The television manufacturers have the choice of using negative and zero cost technology to manufacture televisions that meet the regulations. However, the manufacturers also have the choice of usinge costly technologies to comply with the regulations. Choosing a more costly technology over a less costly one to improve the energy efficiency of televisions in order to comply with the regulations is a business and manufacturing choice and not a consideration in setting an efficiency standard requirement.

Finally, as noted above, by forcing manufacturers to absorb the costs of innovation, the regulation reduces R&D funds available to manufacturers to stoke additional innovation into the features consumers most want. By setting aggressive energy standards, the CEC will deprive television manufacturers of profits needed to fuel innovation and to bring features and performance quality to consumers.

As discussed above, there is no research and development expenditure needed to meet the proposed regulations because there are already televisions on the market that meet the proposed Tier 1 and Tier 2 standards. Moreover, these technologies can be implemented by the manufacturers to produce energy efficient televisions at negative or zero cost. Choosing a more costly technology over a less costly one to improve the energy efficiency of televisions in order to comply with the regulations is a business and manufacturing choice and not a consideration in setting an efficiency standard requirement.

2. The Staff Report ignores evidence that energy saving technologies increase the prices of digital TVs to consumers.

The Staff Report claim that its regulations will not increase prices of digital TVs for consumers ignores evidence already in the record. For example, the Staff Report (at p. 30 and n. 72) cites a July 28, 2009 presentation by federal government representatives of the Energy Star program as support for a finding of no price impact. Inexplicably, the Report

[23] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF Page 14 and Page 19

ignores that page 11 of that same presentation shows that the lowest price for Energy Star models had cost more across the board than the most popular models, as much as 40 percent more for 40-inch models. That presentation shows that the MSRP for models said to meet the Energy Star 4.0 requirements:

- **For 32" TVs, was from $20-100 more than the most popular model**
- **For 40" TVs, was from $100-350 more**
- **For 46" TVs, was as much as $200 more**

There is no evidence in the record that shows that there is an incremental cost to produce proposed Tier 1 and Tier 2 compliant televisions. The Staff Report uses the ENERGY STAR presentation to reference the manufacturer suggested retail price (MSRP) of the ENERGY STAR 4.0 complaint televisions. On page 11, the ENERGY STAR slide shows the suggested MSRP. Suggested does not establish that the incremental cost to manufacture energy efficient televisions is greater than zero. The MSRP, list price, or recommended retail price (RRP) of a product is the price the manufacturer recommends that the retailer sell it for. The intention is to help to standardize prices among locations. While some stores always sell at, or below, the suggested retail price, others do so only when items are on sale or closeout.[24]

Furthermore. as discussed above the Tier 1 and Tier 2 standards do not meet the ENERGY STAR levels and no manufacturer premium for meeting ENERGY STAR can be added to the purchase price.

Best Buy notes a price difference of 34% between July and September 2009, between Energy Star and non-Energy Star qualified televisions. See October 20, 2009 comments of Best Buy, Inc. to the Commission. Previous evidence submitted to the CEC by Best Buy showed on average a $167 differential (in November-December 2008) between Energy Star sets and non-Energy Star sets. See Comments of Best Buy, submitted to the CEC January 19, 2009.

As discussed above, the Tier 1 and Tier 2 standards do not meet the ENERGY STAR levels and no manufacturer premium for meeting ENERGY STAR can be added to the purchase price. This comment is not relevant to the non-ENERGY STAR televisions that meet the Tier 1 and Tier 2 standards.

At the October 13, 2009, hearing, Mr. Kenneth Lowe, Vice President and Co-Founder of Vizio, Inc., a leading LCD television manufacturer, testified: "Currently, the cost addition [attributable to compliance with the regulation] for the Vizio consumer is from tens to hundreds of dollars, depending on the screen size." Transcript at p. 73, available online at http://www.energy.ca.gov/appliances/2009_tvregs/documents/2009-10-13_hearing/2009-10-13_TRANSCRIPT.PDF

[24] http://en.wikipedia.org/wiki/Suggested_retail_price

CEA is quoting Ken Lowes comments out of context.

Ken Lowe, on page 63 of the transcript of the October 13, 2009 hearing, states that "New technologies such as LED backlighting helps to reduce power consumption to meet Tier 2 levels. Currently, the cost addition for the VIZIO consumer is from tens to hundreds of dollars, depending on the screen size. And we expect, as the volume increases of TVs with the LED backlighting that the price/cost additions will come down." VIZIO already has CCFL LCD televisions that are Tier 2 compliant and for which there is no increase in price. However, as discussed above the incremental cost to make an inefficient television meet the Tier 1 and Tier 2 standards is negative to zero. LED are currently being made today that far exceed the Tier 1 and Tie 2 standards and no energy efficiency improvement is needed.

A CEA representative similarly testified at the hearing that, because of increased material and manufacturing costs, an LCD TV with energy-saving HCFL lighting was priced $200 higher than its otherwise identical model with CCFL lighting. Transcript at p. 106.

CEA representative Mr. Greenstein on Page 106[25] talks about Sony's HCFL television.

Evidence in the record supports the assertion that the incremental cost for CCFL equipped televisions is negative or zero[26]. Sony has HCFL televisions which sell at a higher price and complies with Tier 2 of the proposed regulations. There is no incremental cost required for HCFL televisions to meet the proposed Tier 2 regulations. CEA and Sony are mixing two different technologies to justify the assertion that there is an incremental cost to improve the efficiency of their televisions. Sony's choice to replace the low cost CCFL technology with a costly HCFL technology to comply with the regulations is their business choice. Sony's Tier 2 compliant televisions require no improvement to meet the regulations.

It is self-evident R&D and manufacturing costs must be passed on to the consumer in one way or another. These costs raise prices to consumers now, or delay cost decreases that otherwise would more rapidly occur, or potentially delay investment in innovations that would benefit consumers sooner. Removing certain television models from the market moreover will reduce competition and, therefore, potentially increase prices to consumers. LECG Report at 8. Even assuming that all TVs on the market use energy-saving technologies, price competition nevertheless will proceed based on the higher prices and higher costs of these technologies.

[25] http://www.energy.ca.gov/appliances/2009_tvregs/documents/2009-10-13_hearing/2009-10-13_TRANSCRIPT.PDF

[26] http://www.energy.ca.gov/2009publications/CEC-400-2009-024/CEC-400-2009-024.PDF Page 14 and Page 19

As discussed above, there is no research and development expenditure needed to meet the proposed regulations because there are already televisions on the market that meet the proposed Tier 1 and Tier 2 standards. Moreover, these technologies can be implemented by the manufacturers to produce energy efficient televisions at negative or zero cost. Choosing a more costly technology over a less costly one to improve the energy efficiency of televisions in order to comply with the regulations is a business and manufacturing choice and not a consideration in setting an efficiency standard requirement.

These flaws undermine the Staff Report conclusions that long-term energy savings can outweigh the immediate higher cost to the consumer, and that the payback period under the new regulations is zero. Report p.13. Because these conclusions by statute must be proven true, based on credible evidence, before the Commission can issue its regulation, the Commission cannot proceed based on the current record.

The Energy Commission staff has demonstrated in the record that the proposed regulations are cost effective, technically feasible, and save significant energy. The proposed regulations are justified and meet all the requirements of California Public Resources Code and California Administrative Procedures Act. The Energy Commission has the justification and authority to adopt the proposed regulations. (See Staff Report and supporting documentation and NOPA and ISOR for Docket 09-AAER-1C)

Point II: Mandatory limits on the energy performance of digital TVs will stifle future innovation, and harm consumer and state interests, in the highly dynamic and competitive technology market.

As stated above, there is no evidence in the record to support CEA's assertion that the standards will stifle future innovation, and harm consumer and state interests. The Energy Commission has determined that the significant reduction in energy generation and the one billion dollar per year in energy savings for the citizens is a significant state interest in compliance with the requirements of the Warren Alquist Act.

Consumer demand for digital televisions reflects its importance to the American household. There is no consumer electronics product more widely owned. Consumers appreciate the greatly improved picture quality and performance of digital televisions. And that improved picture quality has changed television programming itself. Analog televisions could not reproduce enough detail to watch the entire field of a sporting event, the entire stage of a theatrical or dance performance, or the entire screen of a motion picture presentation. On a wide-screen digital television consumers watch sports plays unfold from a field's eye view and see not just the main characters of a play or motion picture but all characters, as the directors intended. And this is just the beginning. Innovations on the horizon will continue to improve technical performance such as resolution, sharpness of figures in motion, and

color reproduction, and landmark developments like 3D HDTV will bring new benefits to consumers from digital TV.

CEA's comment is not relevant to the proposed regulations because the Energy Commission has established in the record that none of these options or performance characteristics will be effected by the standards. CRT TV is used to display high definition digital signal with great quality. Manufacturers introduced flat screen plasma, DLP's and LCD televisions. DLP and plasma televisions lost their market share to LCD televisions. CCFL LCD televisions are losing their market share to LED LCD televisions. Innovations take their own path and innovations will continue with or without regulations. The proposed regulations simply ensure that the path will remove the older energy-wasting televisions from the market.

While consumers and the economy as a whole applaud the consumer electronics industry for these innovations, the CEC Report assesses innovation only through the prism of energy consumption. In the view of CEC, innovation into any aspects of television performance *other than* energy reduction apparently portends harm rather than benefits to society:

> **All of these changes have set the stage for a television industry that is experiencing furious competition, lightning-fast evolution and astonishing innovation. … The popularity and increase in demand of televisions has led to strong competition and rapid innovation to provide consumers more functionality and features. *As a result the energy consumption of televisions has been growing rapidly over recent years, and this trend is expected to continue in the near future*…." Report p. 2 (emphasis added).**

Staff analysis and graphs for television energy use in the record include the accounting of television energy savings demonstrate a significant trend of increased household energy consumption by televisions. CEA's opinion is not supported in the record. (See Staff Report) CEA has not provided any California sales data of the energy use of televisions to support their assertion that the existing voluntary measures have not resulted in overall residential energy consumption from 3% to 10% in the last 10 years. Nor has CEA provided evidence that the existing voluntary program can stop the expected energy consumption increase from increasing to 18% in 2023. Staff analysis shows that without adopting regulations the reduction in energy consumption and GHG's cannot be accomplished.

The cure, according to the CEC report, is not to let loose the economic engine of innovation, but instead to *rein in* innovation through market interference:

> **"The goal of the regulations are *to cause a market transformation* in the remaining energy wasting televisions being sold today so they will be manufactured to meet the minimum efficiency standards by 2011 and 2013.… *to cause the desired market***

change **to greater efficiency and significant statewide energy savings." Report p.14 (emphasis added).**

Stifling innovation is not the solution. It creates different and potentially more severe problems for manufacturers and consumers. As set forth below, the CEC's wrongheaded approach should be rejected. Freeing innovation will give consumers both better performance and energy savings.

The Energy Commission already regulates 23 different product categories. There has been no evidence that any of those regulations have prevented technologies and innovations for those product types. For instance, the refrigerators available in other countries do not have innovations which are not available in California.

CEA has not provided any supporting evidence and data to validate their comments, or to show that the Energy Commission's assumptions and conclusions are not reasonable. There is no evidence or data in the record that support CEA's assertion that the regulations will hinder innovation. There is no evidence that improving the efficiency of televisions interferes with innovations. The regulations will help accelerate the innovations, as energy efficiency improvements are achieved through such innovation.

A. The Staff Report Ignores a Key Statutory Factor: The Impact of the Regulation on the Efficacy of Televisions to Consumers.

CEC ignored a key statutory factor in its analysis: the impact of the regulation on the product efficacy of televisions for the consumer.[12] The CEC treats this factor as equivalent

"Efficacy" may be susceptible to objective measures for appliances such as light bulbs, refrigerators and air conditioners, which consumers buy to fulfill a utilitarian role in their homes. But televisions are anything but utilitarian.[13] The efficacy of a television to the consumer cannot be assessed by merely its energy consumption or, indeed, by purely objective standards. The CEC must consider how and why consumers use televisions, and what aspects of television displays matter most to consumers.

The Energy Commission staff has considered all the necessary and required factors for the proposed regulations. The staff report and other necessary documents have evidence and support in the record to support the adoption of the proposed regulations.

Foot note 12: Under Calif. Resources Code § 25402(c)(1), the factors that the CEC must consider include the following:

The standards adopted or revised pursuant to this subdivision shall not result in any added total costs for consumers over the designed life of the appliances concerned. When determining cost-effectiveness, the commission shall consider the value of the water or

energy saved, impact on product efficacy for the consumer, and the life cycle cost to the consumer of complying with the standard. The commission shall consider other relevant factors, as required by Sections 11346.5 and 11357 of the to efficacy in reduction of energy costs. Yet, that is not what the statute provides. The CEC must consider the overall efficacy in terms of the functions performed by the product *for the consumer*.

Government Code, including, but not limited to, the impact on housing costs, the total statewide costs and benefits of the standard over its lifetime, economic impact on California businesses, and alternative approaches and their associated costs. (Emphasis added.)

Notably, the CEC omits any mention of the efficacy factor in its recitation of statutory considerations. NOPA at 12.

All the supporting findings made by the Energy Commission needed to comply with the Warren-Alquist Act and the California Administrative Procedures Act are in the Staff Report, supporting documentation, and in the NOPA and the ISOR for Docket 09-AAER-1C.

Footnote 13: Exemplifying this difference, the federal Energy Star program establishes separate categories for "Appliances" (like clothes washers, refrigerators, and air cleaners) and "Home Electronics" (including cordless phones, DVD players, home audio, and televisions). *See* *http://www.energystar.gov/index.cfm?fuseaction=find_a_product*

ENERGY STAR is a U.S. Environmental Protection Agency's (EPA) voluntary Program. The ENERGY STAR program has its own requirements and those requirements differ from California law. The Warren-Alquist Act and supporting regulations in Title 20 of the California Code of Regulations are a mandatory program and all appliances that are regulated must meet the requirements in Title 20.

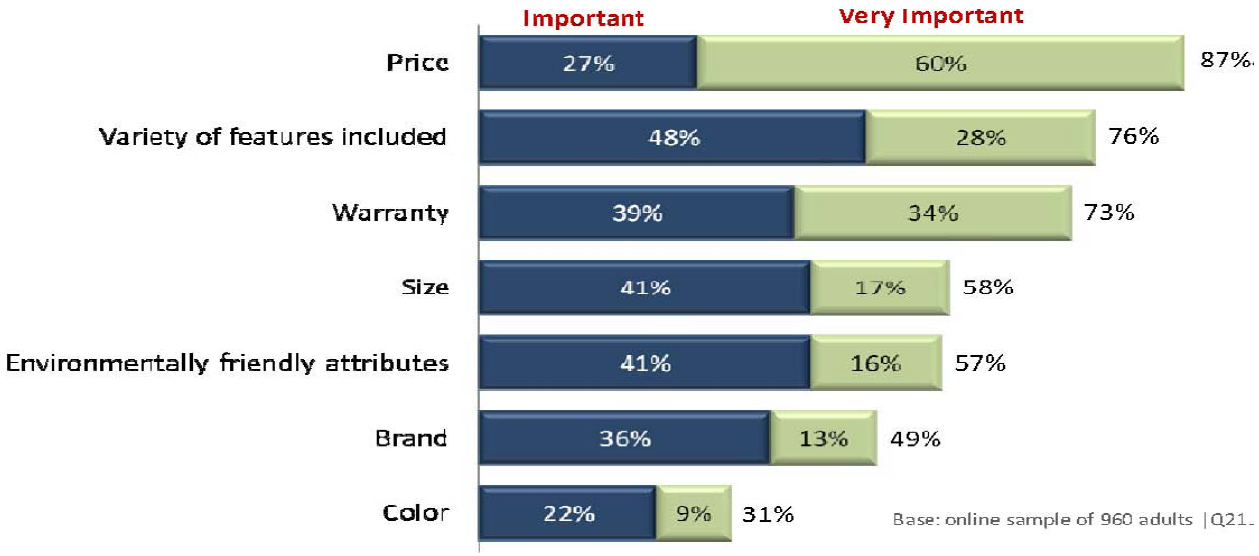
Television plays a central role in the life of the American family. It is the modern hearth where families and friends gather for entertainment and information; to learn about our history, our culture, our world, and our universe, or just to play games together. Television is the consumer's primary source for entertainment, information, and education among families and friends. The most-watched television episode of all time – the final chapter of M*A*S*H – attracted more than 50 million households. Almost an equivalent number watched the 2008 Super Bowl. One year ago, more than 71 million Americans watched Election Night 2008 coverage on television. In short, television is where people gather to watch and share life's experiences as their favorite sports teams do battle, compelling stories unfold, and history is made.

Consumers care greatly about the audiovisual performance characteristics of the television display. Considerations of reproduction quality, color, brightness, sharpness, response time, screen size, screen depth, viewing angle, picture-in-picture, and many other factors, are judged subjectively in the eye of the beholder. And consumers can readily perceive

differences among television technologies and qualities. As evidence of the significance of these characteristics, a wide array of publications and websites exist just to inform consumers about TV model performance and to rate and rank products.

Television technologies are not fungible. Each has different characteristics. Whether a consumer prefers the picture produced by CRT, DLP, LCD, OLED, plasma, or front or rear projection is highly subjective. A particular type of TV may be better suited to the particular viewing environment in a consumer's room. Each technology has different attributes in terms of quality, size, and price. Which set gives the best performance at an agreeable price is a very personal choice, and one of the more important purchasing decisions a consumer will make. If every set was as much the same as the CEC assumes, one would never see consumers taking time standing before dozens of models arrayed in a retailer's display, judging for themselves which TV performs best for their specific needs.

Energy consumption is one element affecting consumers' purchasing decisions. But as shown in a recent CEA research poll, it is fifth on consumers' list beneath price, features, warranty terms, and size.



If energy consumption were the only consideration, then the most efficient technologies also would be the most popular. But, as the Staff Report observes, the current display technologies that consume the least energy have attracted less interest from consumers, constituting only 5 percent of today's market. Staff Report at 10. What consumers want and deserve most from their television experience are high performance and new features, at the lowest possible price.

As stated above, the efficiency standards meet the requirements of the Warren-Alquist Act as demonstrated in the Staff Report, supporting documentation, and the ISOR and NOPA in Docket 09-AAER-1C. The findings in these documents demonstrate that there will be no adverse effect

on the quantity of televisions being sold or the quality of television viewing. None of the assumed issues are effected by these standards.

CEA on December 10, 2008 issued a report Consumer Desire for "Green" Electronics on the Rise, CEA stated that an Examination of the Green Trend and What it Means to Consumers and the CE Industry, finds that 89 percent of households want their next television to be more energy efficient, for example. Although awareness of "green" that CEA is offerings lags behind sectors like household products[27]. The Commissions supports the awareness of "green" which is why the proposed standards require each television to have a label as to energy consumption so the consumer can become educated as to what they are buying. Because the Commission has established in the record that efficient televisions do not effect the cost of manufacturing or availability of opinions for an efficient television, the Commission fails to understand the significance of CEA's comment that energy savings is not that important to consumers; being rated only fifth. Energy efficiency is economical and does not impact the quality or price of televisions. This highlights a deficiency in the marketplace where uneconomical choices are being made despite high competition. Regulations will help to break the economical deficiencies of the market by eliminating the worst choices in terms of energy consumption and encouraging better choices through labeling.

"Efficacy" cannot be judged by energy consumption alone. The CEC assessments therefore must give due consideration to the impact of its proposed regulations on those aspects of television displays that matter most to consumers -- including innovative features, price, and size.

As stated above the efficiency standards meet the requirements of the Warren-Alquist Act as demonstrated in the Staff Report, supporting documentation, and the ISOR and NOPA in Docket 09-AAER-1C. The finding in these documents demonstrates that there will be no adverse effect on the quantity of televisions being sold or to the quality of the television efficacy.

B. Innovation Takes Time, Effort, Experience, and Funding – All of Which would be Impaired by the CEC Proposed Regulations.

As stated above the efficiency standards meet the requirements of the Warren-Alquist Act as demonstrated in the Staff Report, supporting documentation, and the ISOR and NOPA in Docket 09-AAER-1C. The finding in these documents demonstrates that there will be no adverse effect on the quantity of televisions being sold or to the quality of the television innovation.

Technological improvements result from years of research and product development. Investment in research and development, in turn, depends on the experience gained and profits earned through mass production of early generation products.

[27] http://www.encyclopedia.com/doc/1G1-190569762.html

The first generations of products inevitably are less efficient in every way than later generations of products. Manufacturers obtain through experience knowledge vital to achieving future cost savings and product improvements. Once a product shows the promise of future success, manufacturers have the business rationale and funding to seed further investment in efficiencies in design and production. Functions performed in first generation products by multiple parts can be integrated into fewer, cheaper, and more energy-efficient components. Product performance is improved. New features are added. Economies of scale bring costs down further. And, as manufacturers already have demonstrated by their highly successful voluntary efforts in the Energy Star program, with time, experience, and funding from earlier generations of products, manufacturers also can make their products more energy efficient.

As stated above the efficiency standards meet the requirements of the Warren-Alquist Act as demonstrated in the Staff Report, supporting documentation, and the ISOR and NOPA in Docket 09-AAER-1C. The finding in these documents demonstrates that there will be no adverse effect on the quantity of televisions being sold or to the quality of the Technological improvements.

The Staff Report recites a list of breakthroughs achieved in energy efficiency for LCD, plasma and DLP display panels, *see* Staff Report at 18-25 and October 13 staff presentation slides 33-38 and 55-59, as if these innovations occurred effortlessly overnight. In reality, these technological improvements only became possible because TV manufacturers dedicated more than two decades of experience and research into the digital TV technology.

But any company's ability to invest tens of millions of dollars into such research depends upon first establishing market demand for the technology. In the words of one of the leading Panasonic researchers who developed plasma television display technologies: "You can't schedule invention." Innovation takes time, not timetables.

As discussed above, there is no research and development expenditure needed to meet the proposed regulations because there are already televisions on the market that meet the proposed Tier 1 and Tier 2 standards. Moreover, these technologies can be implemented by the manufacturers to produce energy efficient televisions at negative or zero cost. Choosing a more costly technology over a less costly one to improve the energy efficiency of televisions in order to comply with the regulations is a business and manufacturing choice and not a consideration in setting an efficiency standard requirement.

This comment is purely speculative. History has has shown that innovation happens and will continue to happen through technology and a variety of paths. The proposed regulations simply ensure that the path will remove the older energy-wasting televisions from the market.

No product designer, no less a government regulator, can dictate when particular breakthroughs will occur, or when today's inventions in the laboratory will become economically feasible in the factory, or whether or when even the best-designed products will be successful in the market. The CEC's attempt to force energy innovation to its regulatory calendar defies logic and experience. The Commission's proposed regulations only will interfere with research and development efforts that already, voluntarily, are underway.[14]

As discussed above the Energy Commission regulations are not an attempt to force energy innovation. The standards only require a minimum efficiency level that can be met with technologies that have already been developed and are currently being sold in retail stores in California.

C. Regulation will stifle development and marketing of new television display technologies.

As noted above, the CEC regulations will disrupt the development of television technology. The regulations will create obstacles to progress by imposing higher costs on research, development, and manufacture of digital televisions. Companies have only a finite pool of skilled technical engineers and funding with which to conduct research and development efforts. By necessity, the forced re-allocation of resources to comply with the CEC regulations will divert engineering efforts away from other improvements that consumers may find more important and desirable. And it will require companies to divert resources toward meeting energy requirements to meet the CEC's artificial timetable. Manufacturers have made steady progress on energy reduction, while continuing to meet consumer demand for improved features and lower prices. This balanced approach already has yielded tremendous successes for both advanced displays and energy savings, and in the absence of regulation will continue apace.

In addition to the impact on today's developments, the CEC regulations will stifle progress toward tomorrow's technologies. To illustrate, suppose the only technologies currently on the market were CRT and DLP. This year, a company invents the plasma display. Next year, a company invents LCD TV. But both plasma and LCD TVs, when first introduced to the market, exceeded the mandatory CEC energy limits. Consequently, if the CEC regulations had been in place in 2001, they would have prohibited either plasma or LCD TV technology from being introduced to the market at all.

As discussed above, the Energy Commission regulations are not an attempt to force energy innovation. The standards only require a minimum efficiency level that can be met with technologies that have already been develop and are currently being sold in retail stores in California. History has shown that innovation happens and innovations will continue to happen through technology and a variety of paths. In the late 1990's cathode ray tube (CRT) televisions were converting to flat surface and picture quality was improving. CRT TV is used to display

high definition digital signal with great quality. Manufacturers introduced flat screen plasma, DLP's and LCD televisions. DLP and plasma televisions lost their market share to LCD televisions. CCFL LCD televisions are losing their market share to LED LCD televisions. Innovations take their own path. For example, manufacturing of energy efficient surface-conduction electron-emitter display (SED) that offered richer colors, faster response and a better picture quality was stopped by Toshiba and Cannon. SED TVs were never produced although to many this was a loss of a great television technology.[28] It would be speculation to say what might happen to the next DTV technology, with or without regulations. The proposed regulations simply ensure that the path will remove the older energy-wasting televisions from the market.

The Energy Commission already regulates 23 different product categories. There has been no evidence that any of those regulations have prevented technologies and innovations for those product types. For instance, the refrigerators available in other countries do not have innovations which are not available in California.

Foot note 14: CEC suggests that the regulations provide industry "with complete flexibility on how they design their products to achieve the required levels." Report p.13. This ignores industrial reality. CEC may not specify *how* manufacturers must achieve the required consumption levels, but the mandate *to* achieve specified levels within a limited time *per se* reduces design freedom.

The record shows that manufacturers have many paths they can choose to meet the energy efficiency required by regulations. Manufacturers of CEA are already making improvements in energy efficiency far beyond the proposed standards for future televisions.

Of course, as experience has shown, many consumers prefer the price and performance of plasma and LCD over other existing technologies. And major energy consumption improvements have occurred to both technologies in the years since its introduction. Indeed, plasma and LCD TVs from every major television manufacturer today meet or exceed Energy Star voluntary standards.

Consumers benefited from all these innovations because the marketplace allowed manufacturers the time, experience, and profits that enabled plasma displays to succeed and mature. None of this would have occurred had the CEC regulations been in place.

Digital TV is still in its infancy. Californians share the global public interest in the development, introduction, and potential success of the next new technologies.[15] The CEC regulations will prohibit companies from commercializing and improving any new screen technologies that cannot meet the CEC's artificial timetables. If manufacturers cannot test consumer demand and allow the market and the technology symbiotically to develop,

[28] http://www.reghardware.co.uk/2007/05/25/sed_tv_delayed_again/

advanced, potentially better performing television displays may never reach consumers. The costs to innovation are far too high a price to pay for what is, at bottom, an unnecessary regulation.

CEA's assertions are speculative and unsupported. The proposed regulations will not hinder technological innovation. The proposed regulations simply ensure that the inefficient televisions are removed and replaced with energy efficient televisions with the same features, size, and picture quality using existing off-the-shelf technologies.

D. The Regulations Will Have an Immediate and Long-Term Impact on California Businesses, including Retailers and the Entertainment Industry.

CEA's assertion is unsupported and speculative. There is nothing in the record that supports CEA's assertion. (See NOPA and ISOR for Docket 09-AAER-1C for impacts on business and associated support documentation.) CEA has not provided any data or evidence to support impact to business.

The Commission's proposed regulations unduly burden interstate commerce. While the CEC claims, on the one hand, that the regulations will impose no costs on manufacturers or consumers, conversely the Commission concedes that the regulations will be disruptive to manufacturers and interstate commerce generally.

There is nothing in the record to support the assertion that the proposed regulations will be a burden on interstate commerce. The regulations will restrict which televisions can or cannot be sold of offered for sale in California.

In truth, the CEC admits that its regulation will leave market disruption in its wake – indeed, that upending the consumer electronics market is its purpose: "The goal of the regulations are to cause a market transformation in the remaining energy wasting televisions being sold today so they will be manufactured to meet the minimum efficiency standards by 2011 and 2013. … to cause the desired market change to greater efficiency and significant statewide energy savings." Report at p.14 (emphasis added).

The proposed regulations simply ensure that the inefficient televisions are removed and replaced with energy efficient televisions with the same features, size, and picture quality. There is nothing in the record to support that there will be fewer televisions available. The technologies to make inefficient televisions meet the Tier 1 and Tier 2 standards are off-the-shelf technologies that are currently being sold in California.

As discussed below, the premise of the Commission's thesis is thoroughly misguided. Market forces already have compelled manufacturers to voluntarily and dramatically reduce TV energy consumption. Competition will continue this downward trend without

regulatory interference. And the additional steps recommended by CEA will have documented benefits, as shown in the Fraunhofer report.

The proposed regulations simply ensure that the inefficient televisions are removed and replaced with energy efficient televisions with the same features, size, and picture quality. As discussed the record has demonstrated that the existing voluntary program over the last 10 years has not been able to prevent the growth in residential energy consumption from 3% to 10 %. As discussed in more detail above, the Energy Commission staff has reviewed the Fraunhofer report and find that the data and analysis therein supports the proposed regulations because is shows that the voluntary ENERGY STAR program does not meet the energy saving levels required by Tier 1 and Tier 2 standards. The Energy Commission has determined that this reduced energy savings is significant.

What the Commission fails to appreciate, however, are the rippling effects of regulation on other businesses and industries essential to the health and growth of the California economy, briefly discussed below.

The proposed regulations, once effective, will account for $8.1 billion in energy savings and will stimulate the California economy, create jobs, generate revenues, and help businesses. There is nothing in the record that supports CEA's assertion. CEA has not provided any sales data to show that the Energy Commission's estimates are not reasonable.

Footnote 15: Research and development into TV technologies bring innovation to a variety of non-TV display platforms, such as computer and medical displays. For example, if not for the scores of millions of research dollars and years of effort to develop LCD TVs, would consumers today have other evolutionary products like the video iPod?

This comment has no relevance to the proposed regulations. The record demonstrates that the standards do not affect options such as IPod, 3D, and internet televisions.

1. The regulations will unduly burden California retailers.

CEA submitted for the record in this regulatory proceeding a March 23, 2009, study by Resolution Economics, LLC, describing the potential impact of energy regulations on the California economy. As a result of comments received with respect to that study, the authors revised their analysis, as reflected in the attached Update. These revised figures indicate that California could lose more than 4,000 jobs and approximately $46.8 million in tax revenue as a result of the proposed regulations.

There is no supporting data or evidence provided in the study to back up the loss of 4,000 jobs and $46.8 million in tax revenues. The Resolution Economics study is based on faulty assumptions without any backup data to support the assertions. The record demonstrates that

there should be no change in the number of televisions being sold in California. The proposed regulations require inefficient televisions to be manufactured to be more efficient using existing off-the-shelf technologies already being used in televisions being sold in California. These televisions will be more energy efficient and have the same features, size, and same or better quality picture as the inefficient televisions replaced.

Among those most directly affected by the regulations are electronics retailers and installers. The CEC attempts to limit the impact from the mandates on certain specialty retailers by arbitrarily, although only temporarily, exempting from the proposed regulations TVs 58-inches and above. This exemption, by definition, concedes that the potential impact on California retailers is real. Indeed, comments submitted by mass retailers, specialty installers, and many others, demonstrate that the CEC regulations will have a potentially devastating impact on commerce. Moreover, these comments explain that the impact falls on retailers of all sizes of TVs, down the line. Specialty retailers as well as major mass electronics retail companies sell a large number of sets from 42" to 58" that remain subject to the regulations. The impact of the regulations on these sets, in terms of price and availability, will substantially harm the retail market.

First, retailers and installers are not the television manufacturers and their business is directly effected. They sell and install what is available in the market.

Second, once the regulations take effect the energy inefficient televisions will be replaced by energy efficient televisions of the same size, same or more features, same or better quality picture. The televisions retailers sell or install will be available.

Third, all televisions manufactured prior to effective date can still be sold and installed.

Fourth, televisions of size 58 inches or greater are exempt from this regulation, sometimes televisions of size 58 inches or greater require installation.

CEA's assertion that retailers and installers will be impacted is not supported by any sales data forecasts. The reason televisions of size 58 inches or greater are exempted from this regulations at this time is that fewer models were qualifying for Tier 2 so feasibility is not fully supported at this time. It may take a year before more models will qualify and then the Energy Commission may consider regulations for televisions of size 58 inches or greater. The purpose of the regulations is to remove the energy inefficient televisions from the market and to replace them with energy efficient televisions. Regulations create a level playing field for every manufacturer to compete on equal basis. More models of televisions of 42 inches to 58 inches are inefficient. As an example, a customer looking at 52 inch Sony televisions that have an ENERGY STAR logo has no way of knowing which one uses 105 watts of energy and which uses 329 watts of energy. The higher wattage consuming televisions would cost the consumer $57 dollars per year to operate and $570 over the life of the television. In addition, non-ENERGY STAR 52 inch

televisions next to these may use from 335 watts to over 500 Watts of energy and the cost the consumer will be from $88 to $133 per year to operate and $886 to over 1330 over the life of the television.

The Staff Report notes that because of the regulations, "there may be television models which may not be sold or offered for sale in California." Report, p.14. It observes that the nature of commerce in televisions and in retail likely means that these non-compliant sets may have to be taken off the market in the U.S. "In addition manufacturers, retailers, and distributors take a risk by producing non-compliant models for sale in the U.S. but not in California. It is very difficult to manage supply chains to the accuracy of state borders and much of the television market is organized into a much larger 'North America' market. Therefore, continuing to produce and sell non-compliant televisions becomes a discouraging legal liability with potential violations of California State law." Report, p. 15.

The Energy Commission already regulates 23 different product categories. There has been no evidence that manufacturers of those products have such difficulty. The Energy Commission staff has observed over the years that once California adopt standards for an appliance, manufacturers produce and sell the same model in other states. Most of the time other states adopt similar regulations and ultimately the U.S. Department of Energy (DOE) adopts California's regulations. In the case of televisions, a number of states are already considering similar regulations and DOE has stated in the Federal Register that they will consider television regulations in the near future.

Thus, the Commission concedes that its regulation will wreak inventory management problems for major retailers that cannot so readily control flow of products between California and other states. The impossibility of micromanaging mass retailer inventory is a theme echoed and amplified in comments from the retailer community. While perhaps the Commission sees this as a wash or, perhaps a net positive, the retailers who will suffer the consequences of this regulation do not. What likely will occur is a shift away from retailers that have heavily invested in a physical presence in California, toward internet retailers whose connection with California is no more than a delivery truck. As a result, Californians will lose jobs, and California will lose tax revenue.

There is no evidence that supports CEA's assertion that California will lose jobs and revenues. There is no evidence in the record that support CEA's assertion that retailers will lose business to internet sales. Internet sales are currently going on, and there is no reason that internet sales will accelerate after California adopts television regulations. California regulations specifically state that regulated products sold or offered for sale must comply with the California regulations.

Best Buy stated that internet sales will rise from 8 % to 10 %. However they conceded that non-California sales increases were due to California sales tax. Best Buy did not know how many of

the 10% sales were from California companies and they could not estimate how many sales are expected to be California noncompliant sales and how many would meet California sales.

Ultimately, the costs of the regulation will be borne by consumers. As reported by retailers such as Best Buy, and confirmed by the U.S. Department of Energy as well as TV manufacturers, Energy Star TVs cost more to produce, and tens to hundreds of dollars more at retail. Higher TV prices means fewer sales, or more sales of low-priced/low-profit models. As a result, retailers will have fewer models to sell, fewer TV sales, and lower TV sales revenues.

This statement is not supported by any sales data. The Energy Commission staff visited Best Buy stores at different locations in California and searched their websites in October 2009. During the visits to their stores staff asked the sales representatives to quote prices for non-ENERGY STAR and ENERGY STAR qualified televisions. The Best Buy representative told the Energy Commission staff that Best Buy does not stock and does not sell non-ENERGY STAR televisions.

2. The regulations will unduly burden California's entertainment industry.

The entertainment industry relies on high performance televisions. Studios spend hundreds of millions of dollars to produce, market, and distribute a motion picture, with the expectation that it likely will only achieve a return on investment in the home video market. With the transition to digital TV earlier this year, television producers of entertainment, news, and sporting events have adjusted their production methods and techniques to take advantage of the benefits of wide screen high definition home viewing platforms. As these companies seek new business models to bring in much needed revenue, they look increasingly to the home consumer. The consumer desire for Blu-ray discs, HD pay-per-view and video-on-demand, broadband delivery, online rental, and purchase by downloading, all are fueled primarily by the availability of wide screen digital televisions. Without digital HD TVs, there simply would be no market for these new products and industries.

Again the record demonstrates that the standards have no effect on television options and there are no facts in the record that the standards would effect this industry.

Beyond question, motion pictures made for the big screen in a theater also look better on a big screen at home. The regulations will compel many California consumers to purchase only smaller screen televisions that may not yield the same entertainment experience, when a larger screen TV would in fact still use less additional energy than a single light bulb.

This is nothing in the record to support this statement.

Moreover, the entertainment industries are looking to TV manufacturers for new innovations to fuel demand for motion picture products. Hollywood and TV manufacturers are working very closely on development of innovations such as 3D television. While the Staff Report assumes that the regulations will have no impact on 3D, there is no basis to make any assumptions about a technology that has yet to come to market. To the contrary, 3D technology is primarily a visual display phenomenon that may or may not affect energy consumption. At this point, no one knows how the regulations will stifle development of 3D TV. What is clear, however, is that the Commission has not demonstrated that any potential benefits from its draft regulations can possibly outweigh the clear risks to innovative California industries.

Staff has researched and found that 2D television processing consumes 20 watts, and that when the same television is processing a 3D picture it is consuming 4 to 5 watts more. It is a well established fact that the electronics industry is highly innovative. For example, a prototype product development takes a short time before its functionality, speed, power consumption and performance doubles. Intel Co-founder Gordon Moore predicted in 1965 that the number of transistors on a chip will double about every two years and at lower manufacturing cost. Moor's law applies to picture processing chips and is resulting in higher processing power at reduced lower energy consumption.[29] This will provide television manufacturers with processors that will not effect their ability to meet the proposed standards while giving them the ability to innovate and do complicated operations for future features. Staff has determined from the record that the proposed regulations are cost effective, technically feasible, save significant energy, and are good for the California's economy.

Foot note 16: For example, the Staff Report cites a 63-inch plasma model television as evidence that digital TVs draw energy comparable to refrigerators. Obviously, a professional monitor must have greater capabilities and must meet more exacting performance requirements than residential consumer TVs with respect to brightness, color saturation, and resolution, among other factors, all of which may require greater energy consumption. Not only does the Staff Report ignore this crucial difference, it fails to mention that all other comparable consumer plasma models from the same manufacturer – including its 63-inch consumer models – are Energy Star compliant. In any event, the detailed October 13th hearing testimony by Panasonic exposes as a canard the oft-repeated false contention that televisions and refrigerators consume equivalent energy.

CEA's assertion is that the regulations are unnecessary because ENERGY STAR works, however, they have not disputed that ENERGY STAR cAnnot meet the levels of energy reductions as the 100% requirements or Tier 1 and Tier 2 standards. The ENERGY STAR program is not sufficient to remove most energy inefficient televisions from the market. The Samsung model mentioned by CEA is sold on the market today consumes 750 watts, and costs

[29] http://www.intel.com/technology/mooreslaw/

about $200 a year and about $2,000 over its life time. This television uses excessive energy and once regulations for greater than 58 inch televisions are adopted. Sale of such models will be stopped in California.

Finally, TV manufacturers make professional as well as consumer model TVs. Professional model TVs are manufactured to more exacting requirements that in many respects will draw more energy than a comparably sized consumer model.[16] The regulations make no accommodations whatsoever for professional uses. The fundamental nature of this oversight by the Commission further demonstrates that the Commission is regulating in haste, without due diligence or care for the realities or needs of the marketplace.

The Energy Commission staff finds that there is no difference between professional and consumer models. Professional models uses extra features added to the basic model. There is no evidence or data in the record that there is a professional television model; furthermore, there is no support in the record for CEA assertions that so called professional televisions will not meet the regulations.

E. The Commission regulations will burden other California businesses and institutions.

The scope of the proposed regulations is unclear in its application to non-consumer uses. As noted above, the regulation on its face would appear to preclude sale of professional model TVs to California entertainment and production industries requiring exacting and high performance TVs. But it appears that the regulations also would affect and potentially preclude numerous other uses of TVs in commonplace commercial and institutional environments.

The regulations define a "television" as any device designed primarily for the display and reception of video broadcasts and transmissions. The next sentence states that TVs "include … any unit that is marketed to the consumer as a TV." The clause regarding the marketing of TVs to consumers therefore appears to be only an example, and not a substantive limitation. Consequently, it also appears that many model TVs commonly used in commercial and institutional applications also would be affected by the regulations. As a result, the regulations also would affect every TV in every airport gate, dentist office, hospital waiting room, or sports bar in California. Many of these environments may require additional brightness and luminance to provide satisfactory performance in otherwise suboptimal conditions, which would exceed the power requirements of the regulations.

Again, the failure of the Staff to recognize the differences among consumer, professional, commercial and institutional uses demonstrates that the rush to regulate has overshadowed the needs of manufacturers and the market. Moreover, as demonstrated in the next section, not only has the Commission failed to consider all relevant facts and needs of the

marketplace; the Staff Report misinterprets and miscalculates the facts it has collected. As a result, the proposed regulations do not meet the statutory requirements and cannot be promulgated by the Commission.

The Energy Commission staff finds that there is no difference between professional and consumer models. Professional models uses extra features added to the basic model. There is no evidence or data in the record that there is a professional television model; furthermore, there is no support in the record for CEA's assertions that so called professional televisions will not meet the regulations. In addition the proposed regulations are designed and written to regulate the energy efficiency of the televisions. The regulations are not designed to regulate the use, or the user.

Point III: The Commission should adopt alternative measures that, in conjunction with industry's voluntary efforts and existing market-oriented programs, will yield energy savings at least as great, if not greater, than would otherwise be achieved by regulating power consumption – but without the costs to consumers, business, and innovation.

The Energy Commission staff has reviewed the alternate measures, and staff analysis of the record shows that the trend for the alternative measures, voluntary efforts, and existing market oriented program will not meet the level of efficiency for televisions in California that the proposed standards will. More than 30% of the televisions will not meet the proposed Tier 1 in 2011. The rate of efficiency improvement from alternative measures, voluntary efforts, and existing market oriented program is not great enough for all televisions to meet the proposed Tier 2 standard by 2013. CEA's statement that "alternative measures that, in conjunction with industry's voluntary efforts and existing market-oriented programs, will yield energy savings at least as great, if not greater, than would otherwise be archived by regulating power consumption" is an unsupported assertion. CEA has provided no sales data of televisions in the California market to support this opinion. Staff further finds that to manufacture an energy efficient television there is no cost to the consumer, business, or innovation.

Tremendous strides in energy savings already have been achieved by digital TV manufacturers, *without* any regulatory mandates. Comparing Energy Star 3.0 data from December 2007 to October 2009, consumers who have bought newer digital TVs have benefited from:

- **29.3% average power savings (weighted, all sizes)**
- **41.4% efficiency improvement**

This statement has been discussed in detail above and is not supported by facts in the record.

The Fraunhofer Report estimates future voluntary savings during the period of 2011 through 2022 (the period covered by the CEC estimates) using a very conservative approach. While CEA anticipates that actual savings over that time would be substantially greater, the magnitude of the savings estimated in the Fraunhofer report demonstrates that no regulation is needed.

The record has established that the baseline is an accurate assessment of energy consumption as corroborated by the most recent 2009 energy data. The energy savings calculations of 6515GWh/ year are accurate and correct. CEA Fraunhofer report on page 18 and 19, "Figure 5 presents the difference between the Annual Electricity consumption (AEC) values, i.e., the energy savings of the ENERGY STAR cases. Over the entire 2011-2022 period, v3.0 yields a total projected electricity savings of 11,100 GWh, while the v4.0 specification reduces electricity consumption by an additional 17,600 GWh relative to the baseline case." These two projected energy savings over a period of 11 years when added and divided by 11 years= (11,100 GWh+ 17,600GWh)/11 years = 28,700 GWh/11 years=2,609 GWh/year. CEA's Fraunhaufer report savings of 2609 GWh/year are about 40% compared to the Energy Commission's 6515 GWh /year energy savings in the record.

Savings comparisons of Fraunhoffer report 2609 GWh/year and energy savings 6515GWh/year in the Energy Commissions record show that the regulations are needed.

Baseline: The Fraunhofer Report uses the CASE baseline assumption that 34 percent of LCD TVs and 5 percent of plasma TVs comply with Energy Star 3.0 as of 2011, and that no TVs meet the Energy Star 4.0 requirements. In so doing, Fraunhofer enables a better apples to- apples comparison of anticipated savings as between the CEC regulations and the CEA proposed voluntary measures. Notwithstanding, compared to the October 2009 Energy Star data, the baseline numbers are in fact extremely low. More than 1240 digital TVs already meet Energy Star 3.0, and approximately 300 models meet at least certain elements of the Energy Star 4.0 requirements.

In 1992, the ENERGY STAR was introduced as a voluntary labeling program designed to identify and promote energy-efficient products. ENERGY STAR 3.0 ends in May, 2010 and Energy STAR 4.0 ends in May 2012. There are manufacturers that make non-ENERGY STAR televisions and will continue to do so as long as they can sell their products. ENERGY STAR sticker incentives do not stop the production of inefficient televisions. Manufacturers do not have to comply with the voluntary ENERGY STAR program. Regulations require and ensure that all televisions sold in California comply with the California regulations.

The Energy Commission baseline is correct and accurate and is based on facts in the record. Energy savings in the Fraunhofer report is 2609 GWh/year are 60% less than the 6515 GWh/year savings calculated by the Energy Commission's engineers.

Standby Mode: The Fraunhofer Report assumes no savings in standby or passive mode, inasmuch as more than 90 percent of TVs sold in 2009 meet the Energy Star levels. *See* Staff Report at 9 n.4 (94.5 percent of televisions between 6/1/2008 and 6/1/2009 report less than 1 watt in standby mode).[17]

The Energy Commission database shows that there are number of televisions that use greater that 1 watt in standby mode. The regulations will ensure all televisions sold in California comply with 1 watt standards.

Other Factors: The Fraunhofer Report uses the same assumptions as the CEC as to Annual Active Mode Usage, Future TV Sales, and Average TV Lifetime. One additional element affecting power consumption, but not considered in the Fraunhofer Report, is screen size. In the last year, the purchasing trend smaller-sized (37" or less) to larger-sized TVs has shifted from 1:1 to 3:2 in favor of smaller TVs.[18] This trend promises further reductions in total power consumption.

As discussed is detail above, the current energy consumption trend shows that residential television energy consumption has grown from 3% to 10% in 10 years.

Footnote 17: In contrast, the 1999 report by K. Rosen, A. Meier, and S. Zandelin of Lawrence Berkeley National Laboratory, National Energy Use of Consumer Electronics in 1999, reported TV standby-mode power usage on average of 8.8 watts. http://eetd.lbl.gov/EA/Reports/45988.doc. This is just one illustration of the remarkable energy improvements made voluntarily by the consumer electronics industry over the last decade.

Footnote 18: See G. Tarr, "Ratio of Small TVs to Large Shifts to 3:2," This Week in Consumer Electronics, September 28, 2009

http://www.twice.com/article/355641Ratio_Of_Small_TVs_To_Large_Shifts_To_3_2.php

Using these conservative assumptions, the Fraunhofer Report estimates annual energy savings as follows.

A. Energy Star Savings

In assessing potential Energy Star savings, the Fraunhofer Report again conservatively assumes that all TVs draw the maximum amount of power under the Energy Star 3.0 and 4.0 guidelines. Fraunhofer recognizes that, in fact, a substantial portion of TVs will use less power than the calculated values, and Energy Star 5.0 compliance would yield additional savings. However, in keeping with its cautious approach, Fraunhofer does not estimate these additional savings or include them in its calculations. With these and other caveats, compared to the baseline, Fraunhofer estimates compliance with the Energy Star 3.0 and

4.0 programs would yield a minimum of 11.1 TWh and 27 TWh , respectively, between 2011 and 2022.

CEA believes that these numbers significantly understate the actual potential savings that will be realized from the voluntary Energy Star program. First, many TVs already consume less than the maximum Energy Star levels used in the Fraunhofer analysis. Second, Energy Star 3.0 compliance has occurred much faster than previously contemplated. CEA expects that, with increased competition for energy savings, this trend will continue toward earlier energy improvements under Energy Star 3.0, 4.0 and 5.0 targets.

The record has established that the baseline in the Staff Report is an accurate assessment of energy consumption as corroborated by the most recent 2009 energy data. The energy savings calculations of 6515GWh/ year are accurate and correct. CEA Fraunhofer report on page 18 and 19, "Figure 5 presents the difference between the Annual Electricity consumption (AEC) values, i.e., the energy savings of the Energy Star® cases. Over the entire 2011-2022 period, v3.0 yields a total projected electricity savings of 11,100 GWh, while the v4.0 specification reduces electricity consumption by an additional 17,600 GWh relative to the baseline case." These two projected energy savings over a period of 11 years when added and divided by 11 years= (11,100 GWh+ 17,600GWh)/11 years = 28,700 GWh/11 years=2,609 GWh/year. CEA's Fraunhaufer report savings of 2609 GWh/year are about 40% compared to the Energy Commission's 6515 GWh /year energy savings in the record.

Savings comparisons of Fraunhoffer report 2609 GWh/year and energy savings 6515GWh/year in the Energy Commissions record show that the regulations are needed.

B. Auto Power Down Functionality

The Auto Power Down function turns off the TV after a specified period of time or of inactivity. Fraunhofer assumes this feature would terminate power after three hours, so as not to interfere with consumers watching a movie. Fraunhofer estimates the annual maximum range of electricity savings from the Auto Power Down feature at between 145 to 190 GWh per year.

These assumptions also are likely to be conservative. Some manufacturers' TVs will (or already do) power down if there is no user input to the TV after less than three hours. Other manufacturers will adopt technologies such as sensors that will turn off the TV if no motion is detected for some shorter period of time.[19] These technologies can significantly improve the anticipated energy savings over and above the Fraunhofer estimates.

CEA states that the authors Kurt W. Roth Bryan Urban of "Fraunhofer Center for Sustainable Energy Systems" report on page 8, and 9 propose that "by automatically switching off TVs that

are left on after a period of time without user input, assumed to be three hours." would save 190 GWh's a year. Setting the televisions to automatically shut off after three hours will not work for the California consumers. For example, if a consumer is watching a game or playing a video game on the television and during that activity the user is not changing the channels, after three hours the television shuts off. The Energy Commission has no authority to regulate the use of televisions.

The Fraunhoer report authors and CEA ignore the fact that most televisions today are connected via set-top box (Cable, or satellite box). The set-top boxes, if there is no user input such as changing the channels, are programmed to shut off after four hours. The three hour television shut off mismatches with the four hour set top box shutoff, and this thus energy saving idea is unworkable.

CEA has not provided energy savings data to support its occupancy sensor proposal.

Footnote 19: At least one manufacturer has noted the inherent difficulties in applying an auto shutoff feature without interfering with the consumer experience, and increasing costs to respond to consumer complaints. *See* testimony of Kenneth Lowe of Vizio, Inc., October 13, 2009 at 63-64.

Kenneth Lowe, co-founder of VIZIO, has spoken with staff related to this issue. He told the Energy Commission staff that he initially misunderstood this issue, however, he told staff that he is fine with the proposed measure.

C. Forced Menu Functionality

Using forced mode menu functionality, at set-up the consumer would be presented with the option to set the TV brightness level at a standard "home" setting or a "bright" mode. As the Fraunhofer Report notes (but the CEC Staff Report ignores), manufacturer adoption of this functionality is already very high. Of the TVs offered for sale in 2009, approximately 80 percent of LCD TVs and approximately 50 percent of plasma TVs either ship at the "home" brightness configuration or include a "forced mode" menu. Fraunhofer assumes conservatively that the difference in energy savings is 20 percent,[20] and that some 80 percent of consumers will either not change or will select the default "home" option. Using these assumptions, Fraunhofer estimates a savings of 17 percent, or a total of 47 GWh per year.

Forced Menu functionality is not the only feature that reduces energy consumption by controlling brightness. Many manufacturers' TVs feature automatic brightness control sensors that, with no user input, adjust the brightness of the picture in response to ambient light conditions. One manufacturer reported that this feature reduces energy consumption in its TV screens by 10-15 percent. This figure would not be additive to the "forced menu"

savings, but would incrementally achieve improved energy savings for even those consumers who opted for the brighter settings.

This measure is part of the proposed regulations. CEA's support and endorsement is welcomed.

D. Consumer Education and Advertising

One of the biggest unmined sources of energy savings is to improve the energy consumption levels of TVs already in consumer homes. While many consumers already may have televisions with lower default settings, many consumer TVs currently are set to the higher brightness levels, or have been reset by consumers who do not recognize the potential impact on power consumption. According to phone surveys referenced by Fraunhofer, more than 50 percent of consumers said they would be likely or very likely to use their remote to decrease screen brightness and save electricity. Fraunhofer Report at 27. In addition, consumers could be notified by service provider visits of the opportunity to save energy through brightness settings. As the report notes, "[i]f applied to the approximately 90 percent of the 2008 installed base of TVs estimated to be in a "bright" mode, switching to a lower power mode could have reduced the [average energy consumption] of the installed base of TVs in California by approximately 1,000 GWh in 2008." Report at 26. Factoring in the likelihood that informed consumers might take this voluntary action, Fraunhofer estimates a potential savings as great as 555 GWh per year.

In addition to savings from reducing brightness, CEA believes that consumer education will achieve additional savings in even more fundamental ways. A simple reminder to turn off TVs when leaving the room, or to use sleep timer settings available on many current model TVs, will contribute to energy conservation. And, as discussed below, education on Energy Star labeling and energy use disclosures will help consumers make better informed decisions when purchasing new digital TVs. [20] **Some manufacturers report 25% less energy consumption using the "home" setting.**

The Energy Commission staff welcomes the consumer education program and hopes CEA will fund such a program in the near future. Nevertheless, consumer education is not an acceptable substitute for regulations.

E. DTV Acceleration Program

From 1999 to 2002, the vast majority of TVs sold in the United States were CRTs, followed by high-energy consuming early models of LCD TVs. If all of these sets were to be retired and not replaced, the maximum annual savings could reach as high as 560 GWh per year. A survey performed by Fraunhofer found that a significant number of consumers (just under 50 percent) would respond favorably to an incentive of $50 to retire their older TVs and purchase instead a newer, energy saving model. Fraunhofer suggests that, given the

number of consumers actually likely to respond to such a program, and the incremental energy savings to be achieved, a one-year program could be expected to reduce energy consumption by 10 GWh.[21] Such savings would persist through the anticipated remaining life of those retired TVs.

Fraunhofer report and CEA's suggestions about DTV acceleration program is potentially costly for California's ratepayer funds. The proposal suggests that California provide a $50 rebate to replace an old cathode ray tube television with a DTV and replace 200,000 televisions a year. The mathematics for this investment do not indicate a wise investment. $50 (rebate)X200,000 (televisions) =$10,000,000=$10 million. Cost of 1 GWh at 14¢ a KWh is $140,000. Dollar savings generated by 10 GWh X $140,000= $1,400,000=$1.4 million. CEA and author of Fraunhofer report have proposed that California spend 10 million dollars a year to receive $1.4 million in savings.

In summary, Fraunhofer estimates that the savings from Energy Star, forced menu functionality and auto shut-down are likely to save a minimum of 440 GWh per year over the current baseline of Energy Star and other models. Savings from consumer education could reach 550 GWh per year, and the potential gains through consumer incentive programs could be as high as 560 GWh. These savings estimates by Fraunhofer, though overly conservative, will result in substantial reductions in consumer energy costs. As noted above, CEA reasonably expects actual savings in many of the above categories to be far greater than the Fraunhofer estimates. But given that they proceed from a reasonable baseline, use empirical evidence, and were subject to peer reviewed, the Fraunhofer Report estimates are much more reliable than the deeply flawed and inherently-biased stakeholder views that lie at the foundation of the CEC proposals.

The regulations include forced menus, automatic sleep modes, minimum panel energy consumptions, and power factor requirements. There is nothing in the record to demonstrate that the above reduction will occur in a voluntary manner, or get the same energy savings levels as the proposed standards.

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POINT IV: Additional Proposed Regulations, Including those Concerning Power Factor and Product Labeling, Should Be Rejected as Costly and Ineffective.

In light of the above reasons compelling rejection of the proposed power consumption regulations, the Commission has no justification to promulgate any of the additional regulations it has proposed. CEA understands that a number of TV manufacturers will submit separate comments on a number of these additional issues, such as power factor, standby-passive power regulation, and so forth, and adverts to those CEA member

comments. We address two of these supplemental issues below, concerning power factor regulation and labeling and disclosure.

Power factor regulations will save energy and will benefit California consumers. Power factor analysis is based on the PG&E study that shows that power factor saves energy in the form of heat loss in the wiring. Power factor measure for the regulations has proven that it is cost effective, technically feasible, and saves energy. CEA and its members have not submitted any evidence supported with data that refutes the power savings estimated in the PG&E report.

A. Power factor regulation will increase costs to manufacturers with no palpable energy savings for consumers.

The proposed CEC regulations include a requirement for power factor greater than 0.9 for televisions that consume 100 watts or more power and are manufactured on or after January 1, 2011. The CEC Staff Report acknowledges that "While improving power factor will not significantly alter the consumption of energy within a device, it will save energy in external ways."

Power factor measure will save energy and money to the consumer. Power factor measure in the regulations has proven that it is cost effective, technically feasible.

Footnote 21: PG&E reports that its current program, which provides a $20 rebate to retailers for sets that exceed Energy Star 3.0 by 30 percent, saved 6 MWh in 2009. Consumer Electronics Daily, Nov. 2, 2009, at 2-3. The consumer-based program proposed by CEA should be expected to yield far greater savings in the near and long terms.

There is no data in the record that show that CEA can obtain these levels on a voluntary basis.

The Report continues to note that "One important cause of energy loss due to low power factors is heat loss over wiring." While the CEC staff may believe there may be other causes of energy loss due to low power factors, these causes are not specified nor analyzed in the Staff Report.

Since the only "benefit" of increased power factors listed in the Report is reduced heat loss over wiring, the report progresses to calculate power factor energy savings purportedly achieved by minimizing heat loss over wiring. The Report relies on the April 13, 2009 PG&E Case Study entitled *Energy Savings Estimate for Power Factor Correction in Televisions*. The PG&E Case Study similarly focuses on minimizing wiring losses through power factor correction circuitry in televisions.

The Staff Report concludes that "The energy savings are estimated to be 6 kWh per year for a 37 inch television which just meets Tier 1 standards and 3 kWh per year for a 37 inch television which just meets Tier 2 standards." Since the public does not have access to the

CEC staff's calculations, we cannot say what assumptions were made about wire type, size, and length. Some of these factors would obviously vary widely from home to home. However, even if we assume the savings are as claimed (6kWh/year and 3 kWh/year), the result is that the dollar savings to consumers are negligible. Specifically, assuming an electricity rate of 14.53 cents per kWh:

- **CEC Tier 1 (37-inch TV) wiring loss 6 kWh per year, saving 87 cents per year**
- **CEC Tier 2 (37-inch TV) wiring loss 3 kWh per year, saving 44 cents per year**

This limited savings does not justify the added cost of power factor correction circuitry in televisions that don't already have such circuitry. The PG&E Case Study estimates the total cost of power factor correction circuitry of between $1.00 and $2.00. One television manufacturer estimates the costs as two to three times these numbers. Once the cost of redesigning a television's internal layout to accommodate the new circuitry is factored in, plus the inevitable increased costs passed to consumers are added, several dollars will be added to the cost of a particular TV. The negligible cost savings estimated by the CEC staff will not outweigh the cost increase for a television requiring the addition of power factor correction circuitry.

We also note that a typical household includes many different electric loads which must be combined to determine the characteristics of energy consumption for that particular house. The proposed power factor regulation on televisions is of questionable benefit. A typical household will contain many other reactive loads such as compact fluorescent light bulbs (CFLs), motors, pumps or air conditioners that may often present a low power factor. While it is desirable to have a high power factor for the combined load of the house, there are better points for power factor correction. For example, a more efficient mechanism would be to seek power factor correction at the whole-household level in order to correct all the household devices that may also present a low power factor.

Accordingly, the dollar saving to consumers are negligible. These minimal savings are outweighed by the added cost of implementing power factor correction circuitry in televisions. As the EPA concludes on its web site "Power factor correction devices improve power quality but do not generally improve energy efficiency (meaning they won't reduce your energy bill)."

Neither Energy Star nor any other regulatory agency has included a requirement on the power factor. We strongly recommend that the CEC regulation also eliminate the power factor requirement. This harmonization is important in that it allows manufacturers to design "world market" products which are in compliance with all of the relevant standards. This results in the most efficient and cost-effective product available to consumers. In comparison to another industry, CFLs are subject to the EPA Energy Star Program Requirements and Criteria for CFLs Version 4.0 which specifies that the CFL

power factor must be at least 0.5. The proposed CEC value for a TV's minimum power factor of 0.9 is almost twice that required for CFLs. Given the large market penetration of CFLs and the widespread acceptance of their energy savings, it does not seem appropriate to apply a much more stringent requirement to TVs. The potential overall impact to household energy use by the adoption of CFLs seems to be greater than that of TVs, so it does not seem appropriate to mandate far tougher power factor standards for TVs compared to CFLs. (The CFL was chosen for comparison because most of its electrical power is consumed in the production of light as is the case with televisions. Furthermore, nearly all LCD TVs use fluorescent back lights to produce their illumination. Plasma TV pixels also produce light in a manner similar to tiny fluorescent lamps, but use neon gas instead of mercury gas as used by conventional fluorescent lights and CFLs.)

Power factor regulations will save energy and will benefit the California consumers. Power factor analysis is based on the PG&E study that shows that power factor saves energy in the form of heat loss in the wiring. Power factor measure for the regulations has proven that it is cost effective, technically feasible and saves energy. CEA and its members have not submitted any evidence supported with data to refute the power savings generated by power factor measure.

There are more than 35 million televisions in California. Savings of 6 KWh/year would save 210 megawatts of power.

Power factor correction requirement is based on study and analysis provided by PG&E.[30] PG&E's study shows that the proposed measure is cost effective. Additionally, more than 70 % of the current ENERGY STAR compliant televisions meet the proposed power factor requirements. ENERGY STAR collected power factor data, but did not publish it. Staff requested ENERGY STAR to provided power factor data to perform analysis for power factor feasibility; proposed regulations require power factor compliance for televisions that use more than 100 watt. Due to 100 watt requirement staff estimates that once Tier 2 regulations take effect, about 40%of televisions will be exempt from power factor requirements. Power factor is estimated to save 6 kWh per year for a TV that consumes 150 watts. The proposal is shown to be cost effective for televisions that consume as little as 95 watts. The proposed regulations are conservative and set the limit for power factor correction only for televisions which consume 100 watts or more. The more power a television consumes the more cost effective the regulation becomes. The proposed power factor regulations can be met using power factor correction chips or capacitors which have been available for decades and are already mass manufactured. The cost of power factor correction is less than the savings of the correction. The regulation is therefore technically feasible, cost effective, and is shown to save energy.

[30] http://www.energy.ca.gov/appliances/2008rulemaking/documents/comments/04-13-09_Energy_Savings_Estimate_for_Power_Factor_Correction_in_TVs_TN-51939.pdf

Is has been noted in the record that 70% of the current ENERGY STAR compliant televisions meet the proposed power factor requirements. CEA has not provided evidence as to why it should not be in the regulations.

B. The Commission's proposed performance marking and disclosure regulations are unworkable, and should instead follow CEA's labeling recommendations to the FTC.

At the outset, CEA wishes to make clear that manufacturers strongly support disclosure of information regarding the energy consumption of consumer electronics, including appropriate labeling. Disclosure educates consumers and further promotes existing competition among manufacturers to lower energy consumption. In comments submitted earlier this year to the FTC in its current proceeding to develop disclosure requirements for consumer electronics, CEA noted that energy use disclosures should be welcomed by consumers eager to have more information about the power consumption and operating cost of electronics they purchase. Providing such information would give consumers another point of comparison as they consider various factors in their purchase decisions. It also would increase consumer awareness and understanding of the operating costs of a particular product, at least in terms of electricity cost and consumption. Comments of the Consumer Electronics Association, Federal Trade Commission Consumer Electronics Labeling Project No. P092401 at 3-4 (May 14, 2009).

Our FTC comments noted, however, that in determining the most appropriate method or methods for disclosure, the FTC should inform its decision on the basis of consumer research into the effectiveness of particular approaches, and weigh the costs to industry of developing, implementing, administering, and maintaining energy use disclosure requirements. Thus, we stressed that cost-effective requirements for energy use disclosures could be established by focusing on simple disclosures of information and providing flexibility for implementation in the marketplace. *Id.* at 4.

CEA believes that the FTC's rulemaking process, taking into consideration the concerns of multiple stakeholders, offers the best avenue to developing and implementing disclosure standards for California consumers. CEC reference to FTC standards would also minimize the manufacturers' and retailers' costs for developing and maintaining state-specific disclosure methods.

Nonetheless, CEA does not object to moving forward with energy consumption disclosures even as the national standards process moves forward. However, we urge the CEC to avoid needlessly costly requirements that may have little incremental value.

The Commission's proposed draft section 1607(d)(11) establishes two requirements for disclosure of a television's on-mode power consumption in watts: (A) the TV itself must display this information permanently on an "accessible and conspicuous place on the unit,

In characters of equal size to the largest font used within the menu screen within the television's built in menu;" and (B) "[a]ny publication, website, document or retail display that is used for sale or offering of a television set manufactured on or after July 1, 2010" must also include this information if it also includes a description of the television's physical dimensions.

These requirements represent another clear example of the CEC's imposition of regulatory requirements without attempting to quantify—or even to attempt to study—the specific costs they would impose on manufacturers and retailers. Further, they impose the most burdensome of these requirements without regard to other more cost-effective ways of making this information available.

CEA opposes permanent marking on a TV for both safety and logistical reasons. With respect to safety, any new requirement for energy labeling on the product itself will cause confusion and conflict with existing Underwriters Laboratory ("UL") labeling. The UL safety standard for audiovisual products, UL 60065, requires a permanent label on the product indicating its supply type and "rated supply voltage." UL 60065 also requires that the "rated current consumption" or "rated power consumption" appear on this same label (or optionally in the product's instruction manual). UL's "rated current" and "rated power" consumption numbers are based on measurements made at virtually the product's highest user settings and input voltage conditions. *See* UL 60065 sections 2.3, 4.2 and 5. Even though UL refers to this combination of settings as the product's "normal operating condition," in terms of possible energy consumption it is actually the most unfavorable combination of conditions.

UL's purpose in disclosing the highest potential power usage on these product is to enable electricians, installers and knowledgeable consumers to plan which product(s) can safely go together on a household circuit, so as to avoid overloading that circuit and its corresponding wires and safety device (breakers or fuses).

If the CEC regulation goes into effect, TVs will thereafter be marked with two different ratings. An installer, electrician or consumer that unknowingly or inadvertently uses the CEC power consumption number (watts) and divides that by the typical U.S. household voltage (120 VAC), will get a current (Amps) which is too small. As a result, the home could be fitted with extension cords with inappropriately sized wire or the connection of too many devices to one circuit in a home. To avert such safety hazards, the UL rating clearly is the appropriate rating to be marked on the TV.

As to the logistical concerns, the CEC's proposed requirement of physical marking is unreasonable and ineffective. Many flat-panel displays are intended to be mounted on a wall and are installed in this manner for purposes of preservation of space and enhancing room aesthetics. There is no "accessible and conspicuous" place on a wall-mounted TV

except on the front, and a permanent marking in this manner imposed solely on California residents would be more likely to generate consumer backlash than to promote energy consciousness.

On October 21, 2009 CEA testified at a California Senate Subcommitte hearing that it supports the FTC labeling program. However, a Natural Resources Defense Fund (NRDC) scientist testified that at the FTC hearing CEA opposed the labeling program. This demonstrates that the federal program for labeling is far from being finalized and could result in no physical labels on televisions to aid the buyer in the purchase of the television.

During the development of the proposed standards the Energy Commission found that there is no existing energy consumption disclosure for televisions. As an example, a customer looking at 52 inch Sony televisions that has an ENERGY STAR logo has no way of knowing which one uses 105 watts of energy and which uses 329 watts of energy. The higher wattage consuming televisions would cost the consumer $57 dollars per year to operate and $570 over the life of the television. In addition, a non-ENERGY STAR 52 inch television next to these may use from 335 watts to over 500 Watts of energy and cost the consumer will be from $88 to $133 per year to operate and $886 to over $1,330 over the life of the television.

California's proposed regulations in Tier 1 for a 52 inch television allows for maximum power use of 232 watts, whereas current ENERGY STAR 3.0 allows for 332 watts. This is why the Energy Commission's proposed standards require each television to have a label noting the energy consumption so consumers can become educated as to what they are buying.

Similarly, permanent marking is of no utility to the hundreds of thousands of TVs used in commercial settings, such as in California airports, hospitals, stores, and hotel rooms. The actual viewers using these TVs likely will never see the markings. They use the products for a relatively short time and on a limited basis, and ultimately have no control over the total energy uses of these devices. The only result of such regulation would be to foist additional cost and burden on manufacturers.

The proposed regulations and labeling program is fair and applies equally across that board for all types of televisions. Energy savings are important to California consumers and businesses. There is no reason that California businesses should not have similar energy consumption information.

Such unintended effects would be exacerbated by the font-size requirements. On-screen menus may be of a relatively large size, particularly in the case of large screens for which it is assumed that the menus will be viewed a distance. Indeed, some manufactures may employ bigger fonts to enable convenient menu use by older users or others with reduced distance vision. Consequently, an energy disclosure of matching font size might well be significantly larger than a brand name or logo or, potentially, the outside frame of a flat

panel display. Conversely, manufacturers might reduce menu size to avoid having to place an absurdly large energy label on the set. However, the resulting reduced menu sized might make more difficult the menu's use by those with limited vision — an outcome the CEC surely cannot intend.

The labeling requirements provide the manufacturer the flexibility to design their labels to meet their needs.

Further, it is unclear how useful such physical on-TV disclosures would be after a consumer's purchase. It is CEA's assumption that the secondary market for televisions is primarily among friends and relatives, or at bargain prices to facilitate a residential move. In such a circumstance, the substantial discount compared to a new set is likely to make budgetary concerns regarding electric usage a minimal concern -- and of minor effect, since digital TVs subject to the rule can be expected to be relatively energy efficient compared to the analog and early-generation TVs of just a few years ago. The availability of manufacturer, CEC, Energy Star, and third-party online information should enable any interested secondary market consumer easily to check a model's energy consumption.

Physical on-TV disclosures are for the first time buyer and are similar to those required for washers, dryers, and other appliances.

For similar reasons, requiring energy consumption in printed documentation, particularly by July 1, 2010, is impracticable. Adjustments that improve power consumption may be finalized only shortly before a model series is set for shipment. However, users' manuals and related documentation need to be finalized several months before shipment. Such documentation may encompass whole model families or multiple screen sizes for a similar model. Unlike physical dimensions, known well in advance, a change in power-affecting setting could occur much closer to shipment date, potentially necessitating the expense of an on-going series of errata sheets. Thus, the regulation could create perverse incentives to forego last-minute improvements to energy performance so as to avoid the added expense solely imposed by the regulations.

Printed documentation can be used for the first time buyer and passed on to secondary buyers.

Consequently, CEA recommends that the CEC limit any on-mode power consumption disclosures to: (1) manufacturers' web sites or other online resources; (2) specification sheets made available to retailers (and which information most likely would be available on retailers' websites); and (3) if the CEC insists on TV-specific disclosures, labels to be placed on shipping cartons, which can be generated at lower expense at the time of shipment to an inventory location that may serve California consumers.

Staff has determined that the proposed labeling requirements are sufficient and will help California consumers in choosing the most energy efficient televisions. The labeling requirements will be pre-empted once any FTC requirements take effect. But as stated above, the FTC labeling program is far from being finalized.