



## MEMORANDUM

TO: Northeast Stakeholders

FROM: David Lis and Jim O'Reilly, Northeast Energy Efficiency Partnerships (NEEP)  
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RE: **New Appliance Efficiency Standards' Opportunities for Northeastern states.**

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This memo, prepared in collaboration between Appliance Standards Awareness Project (ASAP) and Northeast Energy Efficiency Partnerships (NEEP), presents a package of consumer products for which states in the Northeast should strongly consider enacting minimum energy efficiency appliance standards.

In historically typical fashion, the state of California has blazed the standards trail and enacted standards for each of these products. Enacting standards for these products offers states a highly cost-effective strategy for significantly reducing energy usage and greenhouse gas emissions while saving the state's residents and businesses money on their electricity bills. Our organizations have chosen to recommend this list of standards for adoption, in part, because no federal standards exist for these products, eliminating any issues of preemption. Several Northeast states have recent experience promulgating state-level efficiency standards.

While a number of Northeast states have adopted standards for several of the products included in this package<sup>1</sup>, only California has successfully passed legislation to establish standards on the active mode for televisions<sup>2</sup>. Bills are currently (June, 2010) being considered in Massachusetts and New York to adopt various products in this package of standards (Both include televisions).

Products included in this package include:

- Televisions
- Portable Light Fixtures
- Bottle-type Water Dispensers
- Hot food Holding Cabinets
- Portable Electric Spas (Hot Tubs)

We recommend that states adopt energy efficiency standards for each of these products. The greatest opportunity however lies in an active mode standard for televisions. Your state will not be alone in this effort. NEEP and ASAP are promoting the adoption of these standards in other Northeast states, including Massachusetts, New York, and Pennsylvania. In addition, we will be evaluating potential additional product standards to include in this package.

The chart below illustrates the long term savings potential of this standards package by 2020. For more comprehensive savings estimations, refer to Appendix B.

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<sup>1</sup> See page 5 for list of states and products.

<sup>2</sup> Included in the New York Appliance and Equipment Energy Efficiency Standards Act of 2005 were provisions for New York (the New York Secretary of State in consultation with the president of the New York State Energy Research and Development Authority (NYSERDA)) to developed standards for "consumer audio and video products" which include televisions. This process is still ongoing and an exact date of completion and implementation is unknown.



Northeast Summary- Estimated Savings from 2010 Standards Package <sup>3</sup>				
	Annual Savings in 2020			
Northeast State	Electricity	Summer Peak Capacity	Value of Bill Savings	Emissions Reductions
Connecticut	229	14	39	138
District of Columbia	45	2	6	33
Delaware	62	3	7	45
Maine	111	5	14	62
Maryland	368	16	47	266
Massachusetts	434	27	75	261
New Hampshire	94	7	15	59
New Jersey	558	40	92	449
New York	1,266	90	233	957
Pennsylvania	870	38	82	627
Rhode Island	71	4	12	43
Vermont	49	2	6	28
<b>Regional Total</b>	<b>4,157</b>	<b>248</b>	<b>628</b>	<b>2,968</b>
	<b>GWh</b>	<b>MW</b>	<b>\$Million</b>	<b>1000 MT of CO2</b>

If each of the states in the Northeast were to adopt these standards, the region could expect to save over 4,000 gigawatt hours annually and reduce carbon dioxide emissions by almost 3 million metric tons.

### Description of Product Appliance Standards

For each of the products included in the recommended standards package we have presented information about why a standard is an effective strategy, how the standard is structured, the status of bills introduced in other states, and, most importantly, the estimated savings a potential standard could realize.

#### 1) Televisions

The U.S. Energy Information Administration estimates that television energy use, about 5.3 percent of residential electricity use in 2006, will grow to nearly 7.2 percent by 2030<sup>4</sup>, making them the most energy consumptive, unregulated products in the home (Including peripherals like set top boxes boosts TV related energy use to 10 percent and higher). Television energy use is increasing due to three factors: the average hours of operation increases every year; the average television screen size is bigger than ever, and many new high-definition digital televisions use more energy than their analog

<sup>3</sup> Projections provided by ASAP/ACEEE, 2009

<sup>4</sup> Calculated using 2005 Televisions/Set top Box energy breakdown and projecting those proportions on 2006 energy usage and the estimate for 2030. US Energy Information Agency; An Updated Annual Energy Outlook 2009 Reference Case Reflecting Provisions of the American Recovery and Reinvestment Act and Recent Changes in the Economic Outlook (<http://www.eia.doe.gov/oiaf/servicept/stimulus/aeostim.html>) and Miscellaneous electricity services in the Building Sector (<http://www.eia.doe.gov/oiaf/aeo/otheranalysis/mesbs.html>).



predecessors. In fact, some large flat screen televisions draw as much power as a common refrigerator. The fact that Televisions are not federally regulated avoids the issue of federal preemption.

### *Standard Recommendation*

NEEP and ASAP recommend that states adopt both the on-mode standards as well as the standby requirements included in the newly adopted California standards. On Wednesday, November 18, 2009, in an historic and unanimous 5-0 vote, the California Energy Commission approved new energy efficiency standards for televisions. The regulations will not affect existing televisions that consumers already own or the TVs currently on retail store shelves.

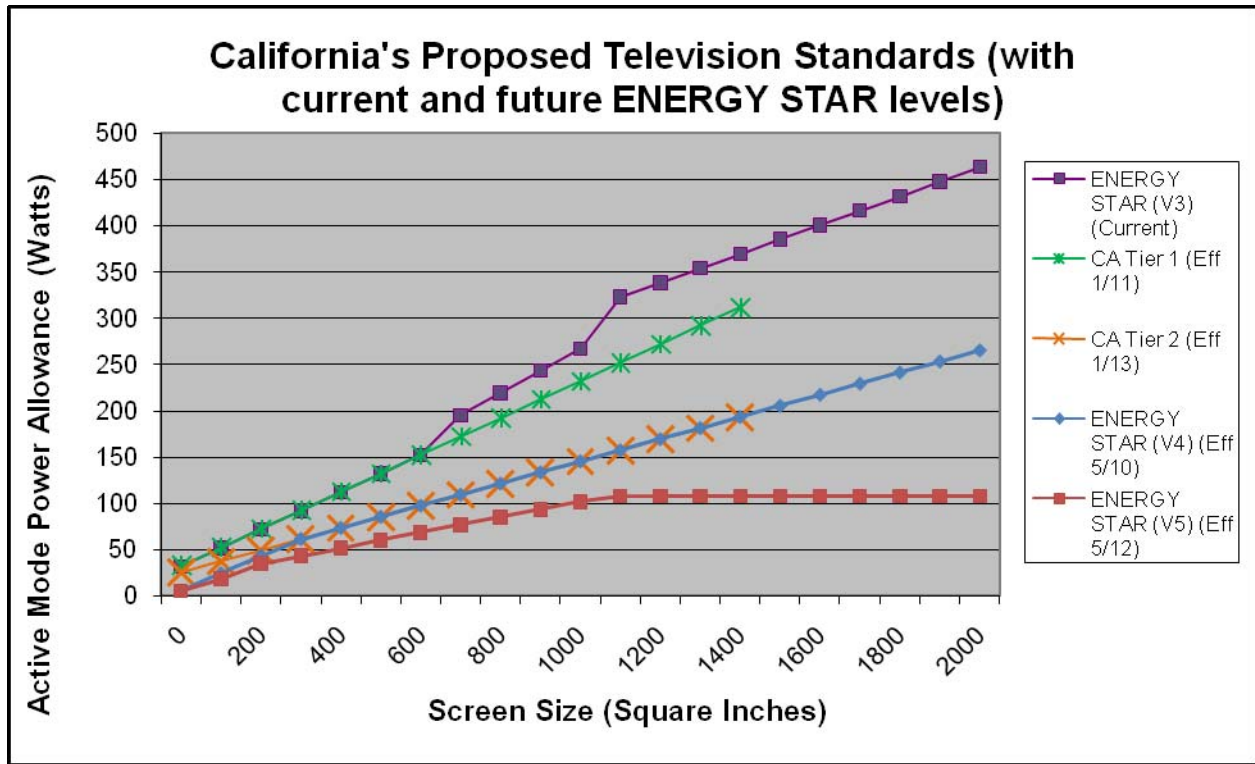
The proposed California standard is a technology-neutral, performance-based specification that sets a limit on a television's active mode electricity usage using a formula directly proportional to the television's screen size (i.e. larger sets are allowed more electricity use as a function of their size)<sup>5</sup>. Standby usage is limited at 1 watt. These standards only apply to televisions 1,400 square inches and smaller (58 diagonal inches).

While the California standard would take effect in two tiers, with 2011 and 2013 as effective dates, we recommend states concentrate on the 2013 Tier 2 standard. Since current market share of Tier 1 qualified televisions is already around 82 percent<sup>6</sup>, the significant savings come in Tier 2 of the standards. Manufacturers are currently promoting Tier 2 compliant products as their "Eco" or "Green" products. Of the nearly 1200 models currently available on the market, over 400 already meet the Tier 2 specification (~25%). This standard will ensure that *ALL* new televisions sold in your state meet a greatly improved level of efficiency.

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<sup>5</sup> The standard affects "active mode" energy use, i.e. when the television is on. California also has an existing standard covering "standby" energy use, which limits consumption when off to 3 watts. Very few, if any, televisions currently on the market use more than 1 watt when in standby mode, therefore, the big energy savings opportunity lies in reducing "active mode" energy use. (Active mode accounts for approximately 95% of annual energy use.)

<sup>6</sup> California Energy Commission, December, 2009



**Estimated savings**

Product-specific savings for you state can be accessed on ASAP’s website; [2010 State Appliance Standards Analysis](#).

**Manufacturer Views**

The manufacturer community is split in their public positions regarding the minimum standards. While one industry trade association, the Consumer Electronics Association (CEA), has vigorously opposed this standard in California (as they have every proposed standard for any electronic product), there is another set of manufacturers and trade associations that support the standards. Leading manufacturer Vizio, component supplier 3M, and the LCD TV Association have all submitted formal comments stating this standard can easily be met with existing technologies and very importantly, can be met using technologies that will not increase prices. CEA’s arguments have centered on the changing nature of their industry and their preference for voluntary initiatives over standards. We believe the recommended standards takes advantage of the fast changing nature of electronic products to capture very large energy savings because Tier 2 standards encourage manufacturers to focus part of their innovative capability on actually delivering televisions to consumers with the efficiency performance they have already shown to be possible. Voluntary initiatives such as ENERGY STAR and utility incentive programs already are effective complements to minimum standards for dozens of other products. Standards raise the “floor” for efficiency performance while voluntary efforts create incentives to reach for even further improvements. There is no reason to believe this complementary approach would not work equally well for televisions.

**Potential for Federal Standards**

U.S. DOE recently repealed an outmoded federal energy test method for TVs, in order to clear the path for states and the federal government to adopt test methods that work for digital TVs. In repealing the old federal test method, the DOE said it would begin a proceeding to set federal minimum standards for TVs. They hope to begin this rulemaking by the end of this year. Typically, it takes three years for DOE to develop a new standard and DOE typical provide three years between final standards



publication and implementation. Thus, the very soonest that federal standards might take effect is sometime in 2016. Given that DOE is also working on 25 other standards currently, this date likely is optimistic.

## 2) Portable Light Fixtures

Portable light fixtures include table, desk and floor lamps. With the exception of torchiere lamps, there are no federal standards for light fixtures. However, there are federal standards for light bulbs which require significant efficiency improvements starting in 2012 and phasing in by 2015 (e.g. the standard 60 watt light bulb will be replaced by either CFLs or an improved incandescent bulb using about 40 watt). Even stronger federal light bulb standards will be effective in 2020, essentially requiring current CFL-level efficiency.

### *Standard Recommendation*

We recommend states adopt the CEC's standard, including modifications jointly supported by the lighting industry and national efficiency advocates. This standard is included in pending federal climate legislation, but we recommend that states act on it since passage of federal climate legislation is uncertain. The standard allows for five compliance paths, including packaging CFLs with the fixture or using specialized sockets only compatible with efficient light sources. Certain specialized fixtures are exempted. (See Appendix A for full description of compliance options.) This approach makes sense since compliant products are already readily available and because new fixtures can be designed to better accommodate efficient light sources.

### *The California Standard*

The CEC adopted the portable light fixture by rule in fall 2008, with a January 1, 2010 effective date. It was initially developed by ACEEE on behalf of PG&E and seeks to accelerate the savings levels of the 2020 federal light bulb standard by applying standards requiring CFL level efficiency in new fixtures much sooner.

### *Estimated Savings*

Product-specific savings for you state can be accessed on ASAP's website; [2010 State Appliance Standards Analysis](#).

### *Manufacturer Views*

The American Lighting Association, which represents lighting retailers and fixture manufacturers, supports federal adoption of the proposed standard. We are not aware of any opposition.

## 3) The "Other" Products

In addition to televisions and portable light fixtures, we recommend several other standards. Each of these other standards offers relatively smaller savings, therefore, we only recommend that states pursue them as part of a package with the first two products. These include: bottle type water dispensers, commercial hot food holding cabinets, and portable electric spas. Standards for the products underlined in this text are included in pending federal energy and climate legislation, but we still recommend that states include them because of the uncertainty of federal enactment of energy and climate legislation. The table below shows which states have already adopted these standards.



Product/State	CA	CT	DC	MD	NH	NY <sup>7</sup>	RI	AZ	OR	WA
bottle type water dispensers	X	X	X	X	X		X		X	X
commercial hot food holding cabinets	X	X	X	X	X		X		X	X
portable electric spas	X	X						X		X
Portable Light Fixtures	X									
Televisions	X					X(see footnote)				

**Manufacturer Views**

We are not aware of any industry opposition to the bottle type water dispenser, commercial hot food holding cabinet or portable electric spa standards.

<sup>7</sup> New York law requires that the New York Department of State and NYSERDA develop specific standards for televisions, compact audio products and DVD players. These regulations have not yet been promulgated.



## APPENDIX A: Compliance paths for portable light fixture standard

1. Contain only dedicated fluorescent lamp sockets with integrated ballasts (e.g. pin-based CFL sockets) with specified minimum efficacy. Today's ENERGY STAR fixtures would comply.
2. Contain GU-24 sockets. These are new socket types, developed for high efficiency light sources, including LED light bulbs and next generation CFLs. The California regulations and pending federal legislation also would ban any GU-24 base bulb that is not high efficiency to prevent this compliance path from becoming a loophole since a standard incandescent bulb could be manufactured with a GU-24 base.
3. An integral LED fixture, meeting certain performance specifications.
4. Contain one of several standard-sized screw base sockets and be sold with ENERGY STAR qualified CFLs to fill all sockets.
5. Contain a single ended, non screw based halogen socket with dimmer control and maximum of 100 watts.

Note that this whole package is a compromise worked out with the fixture manufacturers. Compliance path #5 was very important to the lighting showroom businesses which use these sorts of light bulbs in very high end, highly decorative fixtures. We don't think we lose much savings since their sales are small and it won't be cheaper to use these lamps than to use CFLs in lower-priced fixtures.

We expect that the most common compliance paths will be #4, but #2 also could become very common because it saves the manufacturer the cost of the light bulb. #1 is included to be consistent with the ENERGY STAR fixture program. Compliance path #3 allows for the LED segment to grow.



**APPENDIX B: Savings Summary<sup>8</sup>**

<b>Northeast Summary- Savings from 2010 Standards Package</b>													
<i>Summary of Benefits by Product</i>	Effective Date	Annual Savings in 2020				Annual Savings in 2030				Cumulative Energy Savings through 2030	Cumulative Economic Savings through 2030-Net Present Value	Emissions	
Products		Electricity	Primary Energy	Summer Peak Capacity	Value of Bill Savings	Electricity	Primary Energy	Summer Peak Capacity	Value of Bill Savings			Emissions Reductions in 2020	Emissions Reductions in 2030
	Year	GWh	BBtu	MW	\$Million	GWh	BBtu	MW	\$Million	TBtu	\$Million (2009\$)	1000 MT	1000 MT
Connecticut	2013	229	2,388	14	39	303	3,047	19	63	44	441	138	212
District of Columbia	2013	45	470	2	6	60	600	3	8	8	56	33	50
Delaware	2013	62	646	3	7	82	824	4	11	11	84	45	69
Maine	2013	111	1,153	5	14	146	1,471	6	23	20	172	62	95
Maryland	2013	368	3,841	16	47	487	4,901	21	67	66	497	266	408
Massachusetts	2013	434	4,521	27	75	574	5,769	36	108	84	751	261	401
New Hampshire	2013	94	985	7	15	125	1,257	9	22	19	151	59	90
New Jersey	2013	558	5,819	40	92	738	7,425	52	131	112	909	449	690
New York	2013	1,266	13,194	90	233	1,674	16,836	119	351	254	2,456	957	1472
Pennsylvania	2013	870	9,068	38	82	1,151	11,571	50	131	156	963	627	964
Rhode Island	2013	71	745	4	12	95	951	6	18	14	124	43	66
Vermont	2013	49	515	2	6	65	657	3	10	9	71	28	42
<b>Total</b>		<b>4,157</b>	<b>43,345</b>	<b>248</b>	<b>628</b>	<b>5,500</b>	<b>55,309</b>	<b>328</b>	<b>943</b>	<b>797</b>	<b>6,675</b>	<b>2,968</b>	<b>4,559</b>
		<b>GWh</b>	<b>BBtu</b>	<b>MW</b>	<b>\$Million</b>	<b>GWh</b>	<b>BBtu</b>	<b>MW</b>	<b>\$Million</b>	<b>TBtu</b>	<b>\$Million (2009\$)</b>	<b>1000 MT of CO2</b>	<b>1000 MT of CO2</b>

<sup>8</sup> Savings estimations developed by ASAP; [2010 State Appliance Standards Analysis](#)