NATURAL RESOURCES DEFENSE COUNCIL

NRDC Comments on CEC's Scoping Order for 2012-2014 Appliance Efficiency Standards under Title 20

2011 Rulemaking on Appliance Efficiency Regulations
Docket No. 11-AAER-1

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Submitted by:

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On behalf of the Natural Resources Defense Council and our more than 250,000 members and online activists in California, we respectfully submit these proposals for the development of new appliance efficiency standards under the proposed scoping order covering 2012–2014.

NRDC is generally very supportive of proposals made by stakeholders at the August 31, 2011 scoping workshop on consumer and office electronics, lighting and water-using products. We encourage CEC to move forward on all these proposals. They will save Californians over half a billion dollars annually once the proposed standards are in full effect, reduce pollution and help the state meet its AB32 targets and Zero Net Energy objectives.

Consumer Electronics (CE) account for approximately 10-20% of residential electricity use,[1] and are the fastest growing electrical end-use. Office Electronics, including personal computers and servers, account for another significant share of the state electricity use. There are limited efficiency standards in these areas to date, and significant and cost-effective energy efficiency opportunities. Capturing these opportunities is essential to enable California to harvest these economic and energy savings, and help the state meet its pollution reduction and climate protection goals.

[1] International Energy Agency. *Gadgets and Gigawatts (2009)*

NRDC has identified a number of products as presenting some of the largest and most cost-effective energy efficiency opportunities. We enclose our own proposals on the following products:

- **Set-Top Boxes (STB)**: up to 70% of the energy consumed by STBs is wasted when not watching or recording content, representing one of the largest sources of energy waste in California households.

- **Game Consoles**: Game consoles also constitute a growing energy end-use in California homes, with energy efficiency opportunities in power management, media play and networked standby modes.

We also submit proposals developed in partnership with the California Investor-Owned Utilities (IOUs) on the following products:

- **Personal Computers (PC)**: Most desktops and notebook computers use a disproportionate amount of energy compared to tablets and other highly efficient mobile computing devices. PCs present significant and cost-effective efficiency opportunities that in aggregate across the residential and commercial sectors can save the equivalent of 1 large power plant (500MW) in California.

- **Computer Servers**: Data centers, server rooms and the servers they contain are one of the fastest growing electrical end uses. Efficiency opportunities include better power proportionality and minimum efficiency levels in power supplies.

In addition, NRDC supports the proposals submitted by the California IOUs on the following products:

- **Electronic displays -** a category that includes traditional computer monitors as well as large professional displays that are commonly found in commercial settings such as airport waiting areas, convention center lobbies, etc

- **Lighting products,** including multi-faceted reflector lamps, dimming ballasts, decorative string lights, night lights, illuminated house number signs, non-federally preempted general service, directional, and linear lamps, EISA 2007 exempt lamps, and in particular Outdoor Lighting. Establishment of minimum efficiency standards for key outdoor lighting categories such as street, highway and parking lot fixtures is essential in order for California to meet the requirements set by AB 1109 which requires California to reduce the amount of energy used for outdoor lighting by 25% by 2018.

The last opportunity concerns the energy used by electrical appliances when they are not performing primary functions, also known as **Low-Power Modes** standard. This is an opportunity for a horizontal standard that would encompass all residential and commercial plug loads, from consumer and office electronics, to household white goods

and heating and cooling equipment. While this is not fully mature we encourage the Commission to initiate the research necessary to enable a rulemaking towards the second half of the scoping order period. We provide additional information on this opportunity in Appendix 1.

Lastly, NRDC is separately submitting a set of proposals on efficiency standards for the following water-using products:

- **Lavatory faucets and faucet replacement aerators**
- **Toilets and urinals**
- **Residential water meters.**

We thank the Commission for the opportunity to provide input into the California Appliance Standard scoping order for 2012-2014, and stand ready to provide any additional information. We look forward to working with the Commission on these critical energy efficiency opportunities.

Respectfully submitted,

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Appendix 1: Low-Power Modes – Reducing Energy Waste When Products Are Not Performing Primary Functions

We have not developed a full information template on low-power modes due to the limited information available on the state of low-power mode energy use specifically in California. However we provide a high-level case for the development of a standard on this topic below and encourage CEC to initiate the necessary research that would enable a rulemaking towards the second half of the scoping order period.

Low-power modes are defined as reduced power modes when the product is not performing one of its primary functions. There are many low-power modes across the different types of products and even for a given product. Examples include Sleep, Off, Standby, Hibernate etc…

Even though low-power modes are responsible for considerable energy use in aggregate, they are beneficial from an energy efficiency perspective because they reduce device power use instead of leaving the device in active mode unnecessarily. The purpose of this initiative is not to limit their use, which would be counter-effective if it caused devices to spend more time in Active mode, but to ensure they are used effectively and don't use more power than they need.

To reduce energy waste by devices when not performing their primary functions, we need the following two complementary strategies:

1. Devices need to shift from active mode to a low-power mode after the shortest user-appropriate period of time when not performing a primary function

2. Low-power modes should only use as much power as is necessary to perform low-power mode functions. For example, set-top boxes should only use approximately 5W or less when not playing or recording content.

This applies to both to Passive Standby (for products which do not need to connected to a digital network when in low-power mode), and to Networked Standby (for products that need to remain connected while in low-power mode).

The issue of energy waste when products do not perform their primary functions is becoming increasingly acute and is projected to continue to gain in importance over the coming years short of policy intervention. There are two technological and market trends that are causing an increase in low-power mode energy consumption in homes:

- An increasing share of appliances now contain electronics displays and controls. For example many clothes and dishwashers, fridges, heating and cooling systems now have electronics displays and controls.

- Appliances are becoming more connected, to enable information exchange (eg internet displays on fridges), and remote control (eg smart-grid enabled appliances). Network connectivity increases standby energy use.

Low-power mode energy use in numbers:

- 13 percent of total residential electricity use in 2006, likely higher today
- The average California home has about 44 products with one or more low-power modes (2006), likely higher today
- If low-power mode energy use were treated as a unique end use, it would rank fourth, after air conditioning, miscellaneous, and pools and spas (2006)

The above numbers date from 2006 and are likely significantly higher today given the rapid adoption of electronic products by Californians and the trends described above that are causing an increase in low-power mode energy consumption.

The EU has already set an efficiency standard for Passive Standby (EC/1275/2008) and is currently developing a standard for Networked Standby (Ecodesign Lot 26).

NRDC recommends that CEC includes low-power mode energy efficiency in a second phase of the 2012-2014 scoping order.