



**CEA**<sup>®</sup>  
Consumer Electronics Association

PRODUCER OF



# **Industry Initiatives and Recommendations for Public Policy**

**Douglas JOHNSON**

*Networked Standby Policy Framework Workshop – 7-8 March 2013, Toronto*

[www.CE.org](http://www.CE.org)

# Consumer Electronics Association

- Represents more than 2,000 companies in the USD 209 billion U.S. consumer electronics industry
- Membership includes component suppliers, device manufacturers, retailers, distributors, and service providers

# Consumer Electronics



# CEA Members

- Consumer “edge-devices”
- Consumer networking devices
- Dependence on networked infrastructure

# Consumer Electronics

## Dollar\$ and Sense

Consumer electronics have become incredibly efficient. A liquid crystal display (LCD) flat-screen TV of today uses **63 percent less energy** than a cathode ray tube TV in 2003. Across product categories, energy efficiency and sustainability are central to the innovation of our products, resulting in lower costs to power your devices.

### Annual Electricity Costs



For more information on the efficiency of your electronics go to

 [greenergadgets.org](http://greenergadgets.org)

SOURCE: CE.org/green



# Growing Importance of Connectivity

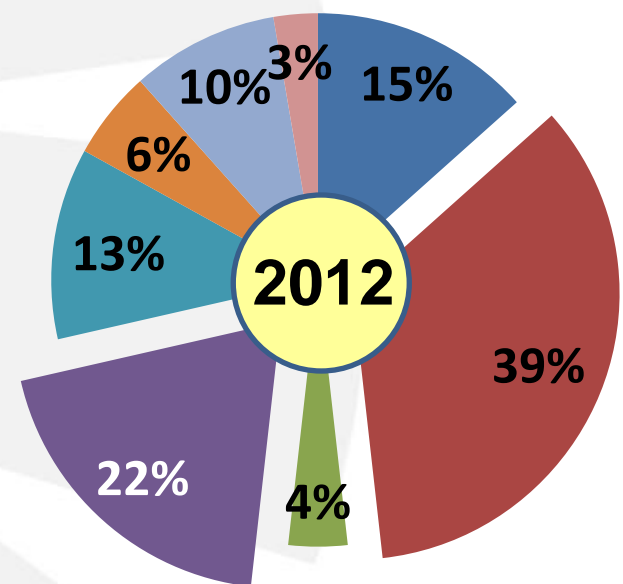
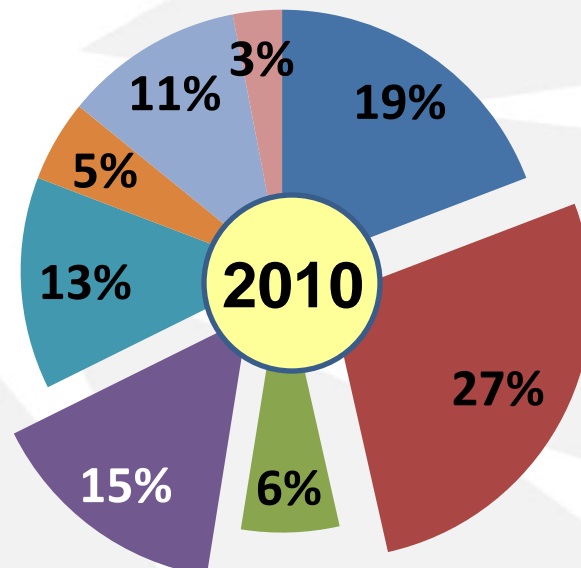
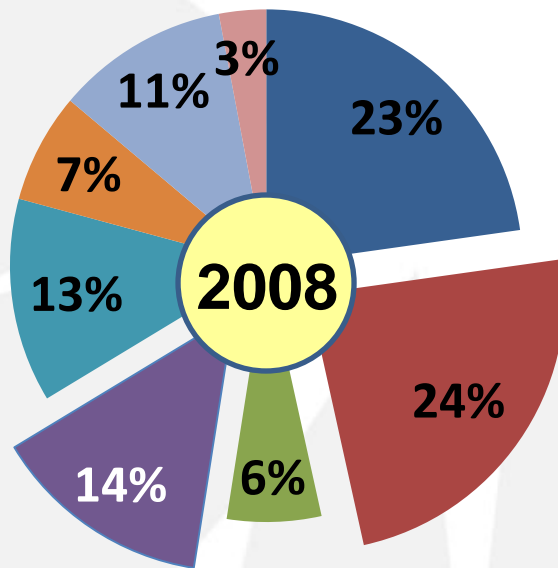
## *Household Penetration Rate of Mobile Devices and Home Networks*

	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>Smartphones</b>	18%	23%	33%	39%	55%	55%
<b>Tablets</b>			1%	8%	22%	44%
<b>Laptops</b>	47%	50%	59%	68%	69%	71%
<b>Home Network</b>	30%	34%	40%	48%	54%	61%

*Source: CEA's U.S. Consumer Electronics Sales & Forecasts, January 2013*

# More Dollars Going to “Information Technology” and “Communication”

## *U.S. CE Industry Revenue Composition*



■ Video ■ Information ■ Audio ■ Communications ■ Electronic Gaming ■ Automotive ■ CE Accessories/Media  
■ Home Technology

Source: CEA, CE Sales and Forecasts



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# Money Makers

*2012 U.S. Revenue in Billions*

**\$30.8**



**Tablets**

**\$33.2**



**Smartphones**

**2012**

*Combined Sales:  
USD 80.3 Billion  
(39% of total CE)*

**\$16.3**



**Laptops/Netbooks**



Source: CEA, CE Sales and Forecasts, January 2013

[www.CE.org](http://www.CE.org)



# Televisions

- Smart app-enabled HDTV owners are mostly streaming video content. More than one quarter (29%) of primary HDTVs have built-in smart apps and ***consumers are using them to stream video content from the Internet (61%), browse the Internet (56%) and view pictures (54%).***

Source: CEA's "Beyond 2D Viewing: Understanding the Demand for Advanced Television Features"  
(December 2012)

# CEA & Environmental Sustainability

- Electronics recycling
- **Energy efficiency**
- Chemicals and materials restrictions
- Packaging
- International CES

# CEA's Comprehensive Approach to Energy Efficiency

Partnerships

White Papers

Market Research

Conference & Events

Media Outreach

Consumer Education



Commissioned Studies

Industry Standards

Government Relations

Consumer Research

Online Resources

Product Demonstrations

# Recent Initiatives

- Set-top Box Energy Conservation Agreement announced by CEA & NCTA, December 2012
- Energy use disclosures (EnergyGuide)
- New research on efficacy of TV energy use disclosures
- Revisions to measurement standards for TVs and set-top boxes
- Regulatory reform (CEC, DOE, EPA)

# CEA Energy Use Study

- Energy use study of consumer electronics in U.S. homes (2011)



# 2011 CEA Study

- Networking devices included (not included in 2007 study)
- Next (third) CEA study expected to be initiated in late 2013; opportunity for changes to scope



# Highlights from 2011 CEA Study

- Residential networking equipment in U.S. (broadband modems with/without integrated routers, routers, etc.)
  - Unit energy consumption (U.S.): **47 kWh/yr**
  - Installed base (U.S.): **137 million**
  - Annual electricity consumption (U.S.): **6.4 TWh**

# Highlights from 2011 CEA Study

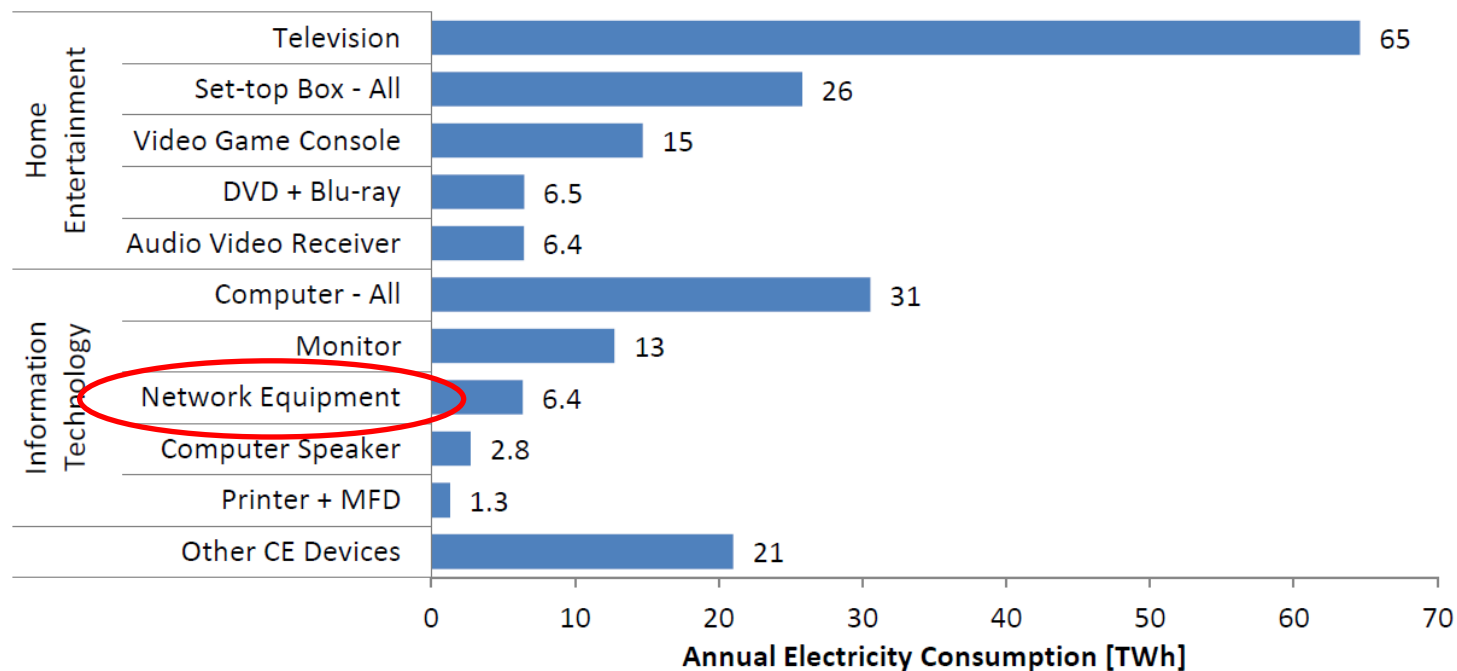


Figure ES-1: Residential CE annual electricity consumption by category

# Consumer Electronics Market

- Rapid innovation
- Dynamic marketplace
- Highly competitive industry
- Significant time-to-market pressures
- Significant cost pressures
- Rapid rates of market penetration
- Rapid transition from one technology to another

# Policy Approaches & Objectives

- Important to understand power consumption in standby and other low-power modes
- Encourage efficient use of energy –in all modes of operation
- What is the best way to encourage and support energy efficiency and reduction of standby power consumption in the consumer electronics sector while protecting innovation, competition and consumer choice?

# Challenges with Regulatory Approach

- Product definitions change
- Products converge, new product categories emerge
- Technical complexities with consumer electronics
- Operating modes and functions change

# Best Practices for Policy

- ENERGY STAR program for consumer electronics has proven to be the best and most effective approach for saving energy and reducing greenhouse gas emissions.
- ENERGY STAR program effectively drives energy use down to the lowest levels possible without harming innovation, sacrificing consumer choice, or impeding product convergence.



# Advantages of ENERGY STAR Program

- Voluntary, market-driven and international
- Government-industry partnership
- Captures broad range of consumer electronics product categories
- Strong participation by manufacturers
- Well-recognized by consumers
- Competitive incentive for energy savings
- Consideration of active mode power in addition to standby mode power
- Not a “code of conduct”



# Lessons Learned

- Regulation does not keep pace with technological innovation
- Early engagement with industry is important

# Networked Standby Policy

- Good (and current) data and analysis supports good public policy
- Successes in U.S. market suggest vertical approach, law may require it
- Is the E.U. horizontal approach flawed?
- Rely on industry-led consensus standard test procedures for measurement

# Opportunity for Industry

- World Electronics Forum interest in energy efficiency
- Raise global industry awareness regarding networked standby issues
- Support industry-government interaction on approaches and policy

# Guiding Principles for Networked Consumer Electronics

January 2013



**GUIDING PRINCIPLES FOR ENERGY EFFICIENCY IN NETWORKED CONSUMER ELECTRONICS**

The energy consumption and efficiency of consumer electronics is continually evolving with advances in technology, product features and service. A key part of this evolution is network connectivity, which delivers new capabilities to products. Network connectivity can increase power consumption in two ways: operation of the hardware that enables communication; and time spent in higher power-consuming modes due to network activity and simply maintaining network connectivity. Also relevant to the power consumption of networked consumer electronics are the underlying technology standards for network interfaces, network protocols, and user expectations for device behavior.

As leading organizations representing the consumer electronics industry around the world, we support the following guiding principles with respect to advancing energy efficiency in networked consumer electronics:

1. Government and industry should support voluntary, market-oriented programs and initiatives, including industry-led standard test procedures. Emphasis should be on initiatives that support continued innovation, expanded consumer choice, and enhanced product functionality.
2. Government and industry should pursue harmonized policy approaches that benefit the global marketplace for consumer electronics.
3. Network technologies should actively support power management and follow generally accepted international power management principles and designs.
4. Consumers should be informed about and have reasonable control over power management, including but not limited to understanding power states and how network-connected sleep modes affect the user experience.
5. To the extent possible, industry should embrace open networking standards, such as Internet Protocol, so that future audio-visual devices can interoperate with other networked devices in buildings, such as computers and lights, for functionality and energy savings.
6. New and revised standards for data and network interfaces should be efficient in active modes and when lightly or not utilized, and they should convey power states to connected devices while enabling efficient maintenance of network connectivity in sleep modes.
7. Connection to a network should not impede a device from implementing its own power management activities.
8. Networked devices should not impede power management activities in other devices connected to the network.
9. Networks should be designed such that legacy or incompatible devices do not prevent other equipment on the network from effective power management.
10. Network links should have the ability to modulate their own energy use in response to the amount of the service or level of function required.
11. Innovation should move the market to a future of automatic power control of audio and video devices in support of product utility and energy efficiency.



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