



**CEA**<sup>®</sup>

Consumer Electronics Association

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**PRODUCER OF**

International

**CES**<sup>®</sup>

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

# About CEA



- CEA represents more than 2,200 companies in the \$161 billion U.S. consumer electronics industry
- Membership includes component suppliers, device manufacturers, retailers and distributors, service providers
- Most of CEA's members are small and medium-sized businesses



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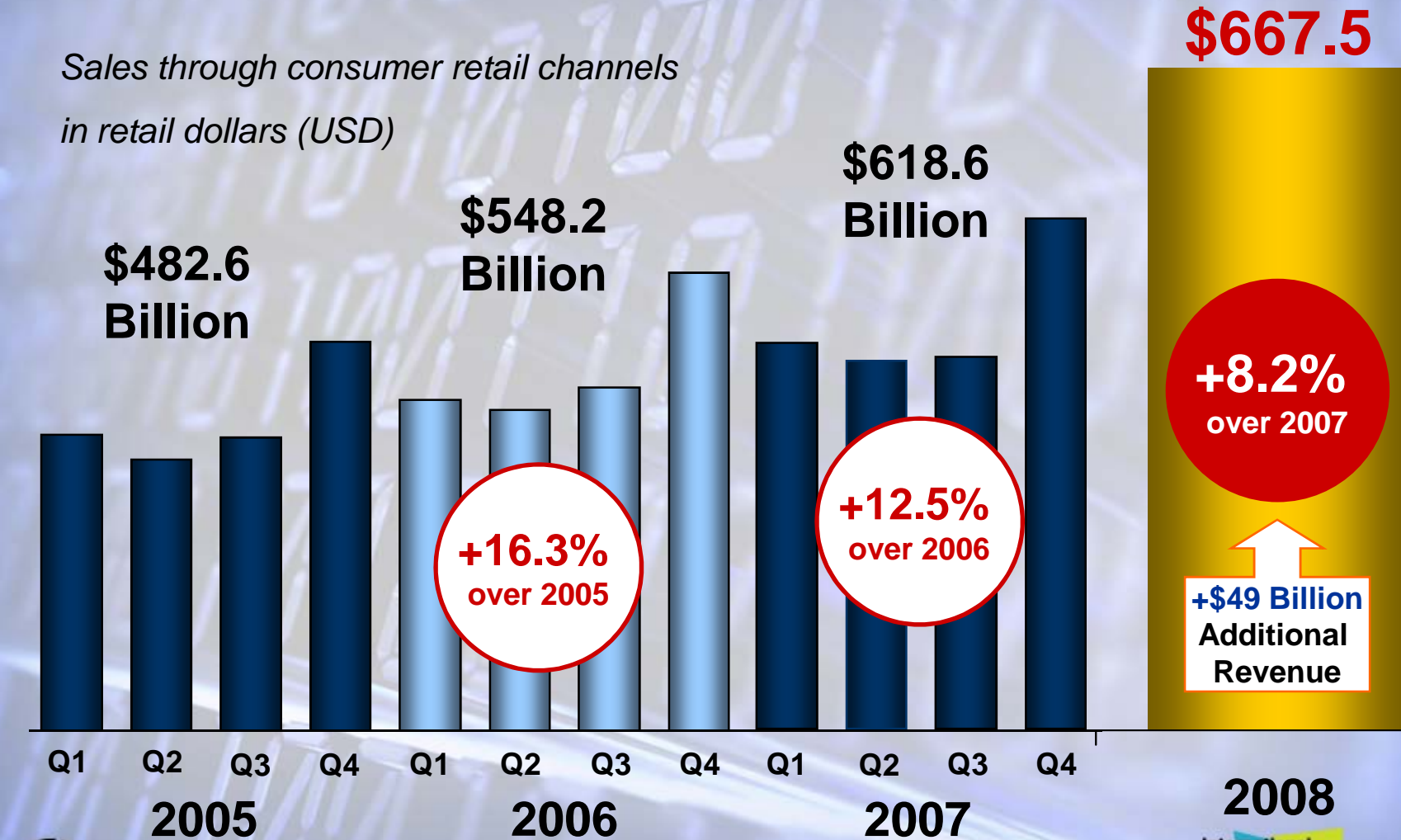


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# Global CE Expenditures

*Sales through consumer retail channels  
in retail dollars (USD)*



www.CE.org



# Consumer Electronics

- Televisions and set-top boxes
- Video recorders and players
- Home audio and home theater products
- Portable audio and video products
- Desktop and notebook computers and computer accessories
- Video games
- Mobile phones and accessories
- PDAs and handhelds
- In-car information, communication and entertainment products
- Cameras and camcorders
- Cordless telephones and accessories
- Home networking and home office products



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# 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

# Key Question

- 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?

# Drivers for Market Transformation

Key drivers of energy efficiency and the reduction of standby power in consumer electronics:

- 1. Innovation, technological advances*
- 2. Voluntary, market-oriented programs and initiatives*

# Trends

Major industry trends which naturally drive, support and sustain the energy efficiency of electronics:

- *Convergence*
- *Miniaturization*
- *Transition from analog to digital technology*
- *Innovation*

# Consumer Electronics Industry Approaches & Initiatives

- Voluntary, market-oriented programs
- Research and analysis
- Standards developed by industry
- Consumer education
- Promotion of energy-efficient products
- Outreach and coordination



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# Energy Star: Advantages

- 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




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# Energy Star: Achievements

- *Electronics are an Energy Star success story*

 ENERGY STAR	ENERGY SAVED 2006 (BILLION KWH)	EMISSIONS AVOIDED 2006 (MILLION METRIC TONS OF CARBON EQUIVALENT)
<b>Consumer Electronics</b>	<b>12.3</b>	<b>2.4</b>
Residential Appliances	0.6	0.1
<b>Residential Office Equipment</b>	<b>6.3</b>	<b>1.2</b>
Lighting	11.3	2.2
Heating and Cooling	7.6	2.4
Commercial Appliances	1.3	0.3
<b>Office Equipment</b>	<b>28.5</b>	<b>5.6</b>
Commercial Lighting	1.7	0.3
Other	5.5	1.0

Source: U.S. Environmental Protection Agency's latest ENERGY STAR Annual Report



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# Energy Star

- Specifications recently completed or in development: TVs, set-top boxes, computers, monitors, imaging equipment, external power supplies



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# Energy Star: Set-top boxes

- New Energy Star specification in development for complex STBs
- Energy Star program in place for simple STBs (digital-to-analog converter boxes)
- Challenges: Service (cable, satellite, telecom) and product distribution
- Auto power down
- Additional market-oriented approaches?
  - *Electric utility rebates*



# Energy Star

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



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# Pitfalls of Regulation and MEPS

- Never keeps pace with technology
- Product definitions change
- Products converge, new product categories emerge
- Technical complexities with consumer electronics
- Operating modes and functions change

# Recent California Regulations

- External power supplies – *Amended*
- Digital-to-analog TV converter boxes (DTAs) – *Removed*
- Compact audio, DVD players and DVD recorders, TVs – *Current focus*



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# Recent California Regulations

- The California regulations do not achieve energy savings as predicted
- States have overwhelmingly rejected appliance efficiency standards (MEPS) for consumer electronics

# Recent Federal Action in U.S.

“Energy Independence and Security Act of 2007” - Provisions supported by CEA:

- *New national energy efficiency standard for external power supplies*
- *Stronger federal consideration and treatment of standby power (“1 Watt” rejected)*
- *Energy use disclosures for CE products*



# Government Regulation (MEPS)

- Establish mandatory requirements
- Limit energy use in one or more operating modes
- Present regulatory burdens and costs (for industry *and* government)
- *Not appropriate for consumer electronics*
- *Better alternatives exist which are already working to save energy (Energy Star)*

# Data Concerns

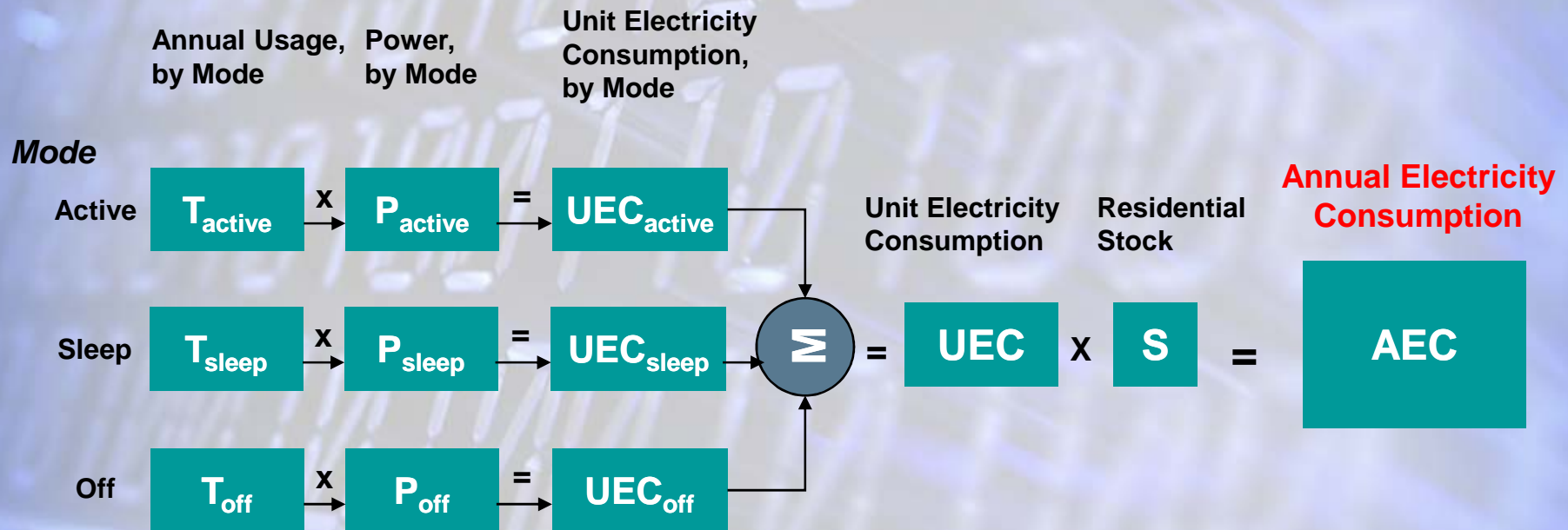
- In the U.S., many estimates of consumer electronics electricity consumption have relied upon data developed in the late 1990s.
- Many CE products have changed dramatically over the last decade, as have their energy consumption characteristics (due to technological change and the success of the Energy Star program).

# CEA-Commissioned Study

- Peer-reviewed publicly-available final report from TIAX LLC issued in 2007
- Focus on key equipment types (16 products that account for approximately 90% of residential CE energy consumption)
- Goal: Current analysis (2006) and good data for all variables



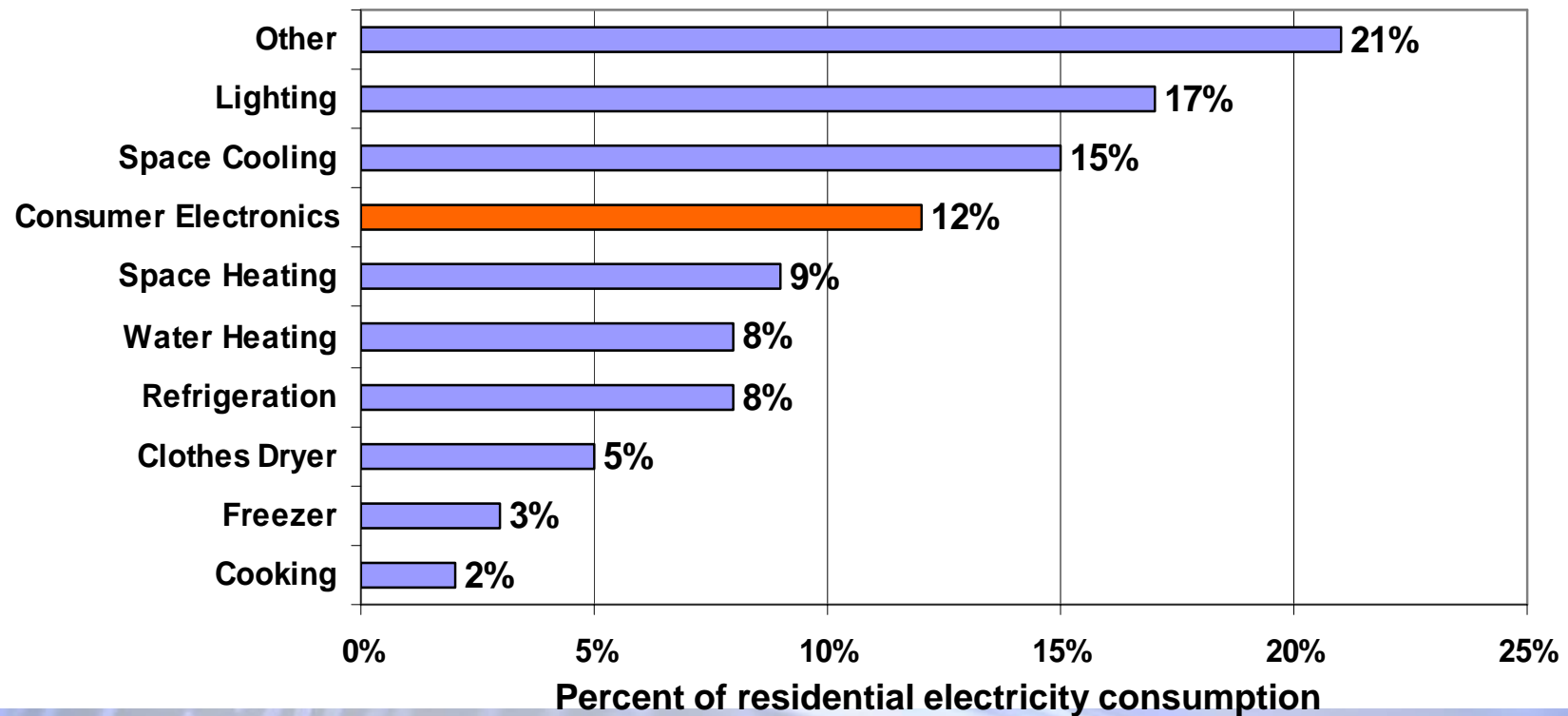
# Bottom-up Approach



*Note: Operating modes are illustrative; actual modes vary by device.*

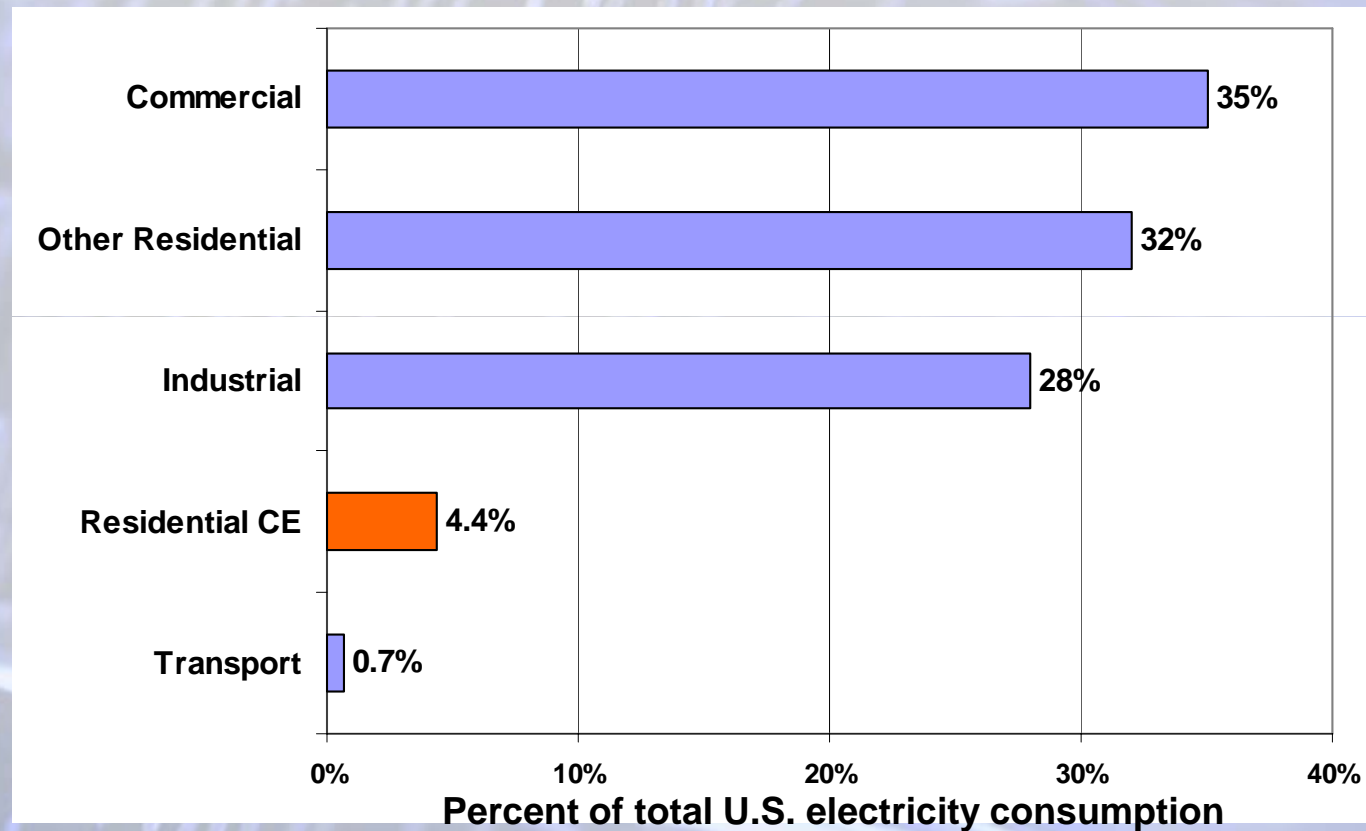
# Study Findings: Energy Use

***Residential consumer electronics consumes 12% of U.S. residential electricity...***



# Study Findings: Energy Use

*...and 4.4% of total U.S. electricity.*



# Standby Power for CE Products

- TIAX analysis indicates that standby power accounts for about one-quarter of CE electricity consumption or about three percent of residential electricity consumption.

# Study Findings: Trends

- Higher installed base for many devices, and many new devices (installed base of key equipment types is about twice that of circa 1997)
- Apparent greater usage of TVs and PCs (increased accuracy from usage surveys)
- Increase in active mode power draw for several devices (analog TVs, PCs)
- Decrease in active mode power draw for monitors
- ***Decrease in standby mode power draw for many devices (Large portion have met Energy Star criteria); Exception: complex set-top boxes.***

# Conclusions from Study

- Consumer electronics energy use is not as high as many reports we read in the U.S.
- Energy use has gone up but so has efficiency
- More products are in use
- TVs and PCs are on more hours per day
- ***This study demonstrates the effectiveness of voluntary energy efficiency programs***

# Next Steps with Energy Use Study

- Revise entire study every three years
- Study and methodology could/should be duplicated in other countries
- Full report at [www.ce.org/energy](http://www.ce.org/energy)

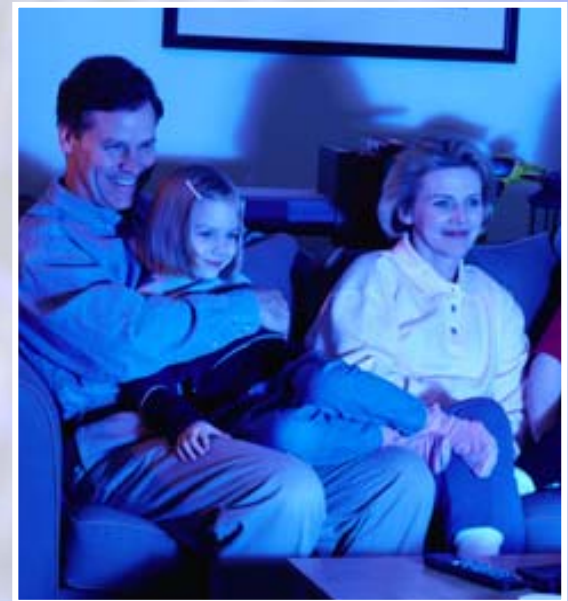
# New Study Commissioned by CEA

- Electronics significantly reduce energy use and CO<sub>2</sub> emissions.
- Using electronics to telecommute saves the equivalent of 9 to 14 billion kilowatt-hours of electricity per year — the same amount of energy used by roughly 1 million U.S. households every year.
- The estimated 3.9 million telecommuters in the United States reduced gasoline consumption by about 840 million gallons, while curbing CO<sub>2</sub> emissions by nearly 14 million metric tons (equal to removing 2 million vehicles from the road every year).



# New Study Commissioned by CEA

- If half of all current video/DVD rentals transitioned to video-on-demand, this would save the equivalent of 2.4 billion kWh of electricity – the same amount of energy used by roughly 200,000 U.S. households every year.



# Industry Standards: CEA

- American National Standards Institute (ANSI) accreditation
- More than 70 committees, subcommittees and working groups
- [www.ce.org/standards](http://www.ce.org/standards)



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



# Industry Standards

- Advantages of industry-led standards:
  - Market-oriented
  - Strong industry participation
  - Credible and flexible
  - Open to all stakeholders
  - Performance neutral
  - International

# Industry Standards

- Opportunity for regulators and policy makers to influence industry standards to save energy while protecting innovation and consumer choice.

# Industry Standards

- Recent industry-led standards projects supporting energy efficiency:
  - Standards developed by CEA Video Systems Committee “R4” for set-top boxes (STBs): CEA-2013-A (Digital STB Background Power Consumption); and CEA-2022 (Digital STB Active Power Consumption Measurement)
  - International industry standard for measuring TV power consumption (IEC TC 100 and TC 110 working groups)



# Consumer Education



## Enjoy Your Electronics

*Protect the Environment*

Welcome to myGreenElectronics! Electronics have improved the way we live, work and play. But, there is one place where electronics should have no impact—the environment. Through responsible use, reuse and recycling of electronics and smarter choices, the consumer electronics industry and consumers can protect and preserve the environment—together.

*Learn* About the 4 R's and Electronics:



**Find Recycling**

ZIP Code:  

**Find Green Products**

Product Type(s):

- Audio Integrated Amplif
- AV Receiver
- Baby monitor
- Batteries 

(Hold Ctrl key to select multiple items)

**Other Resources**

- [myGreenElectronics Newsletter](#)

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# Energy Saving Tips & Energy Use Calculator for Consumers

**myGreenElectronics**

**REDUCE**

**Save Energy with Electronics!**

**REDUCE ENERGY CONSUMPTION**

- [Energy Consumption Calculator](#)  
Calculate how much energy your electronics use and what this means for your wallet by the minute, day, month and year.
- [Tips for Saving Energy for Electronics](#)  
Responsible, energy-conscious use of electronics not only saves energy; it can save you money, too!

**REDUCE E-WASTE**

- [Tips for caring for electronics](#)  
What's the number one way to fight e-waste? Extend the life of your electronics with proper care.
- [Repair or Replace](#)  
Decide to fix your product or explore your options for recycling.

**Find Recycling**  
ZIP Code  
[Legal Disclaimer](#)

**Find Green Electronics**  
Product Type(s):  
Audio Integrated Amplifier  
AV Receiver  
Baby monitor  
Batteries  
[Legal Disclaimer](#)  
(Hold Ctrl key to select multiple items)

**Other Resources**

- [myGreenElectronics Newsletter](#)

**REDUCE REUSE RECYCLE RETHINK**

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

# Promotion of Energy Efficiency

- 2008 International CES:
  - Energy efficient products and technology on display
  - Conference session on energy efficiency
  - International CES Innovations award for eco-design



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# Standby Power

- Best to take a holistic approach (consider all product operational modes)
- “1 Watt” not a realistic policy
- Usefulness: remote control, memory, clock and networking

# Harmonization

- Test procedures
- Specifications underlying voluntary programs
- External power supplies
- Energy use disclosures

# Opportunities for Collaboration

- Support and enhancement of voluntary approaches and programs
- Industry-led standards (e.g. measurement)
- Product-specific initiatives: STBs
- Energy use disclosures
- Consumer education
- Research and analysis

# European Union and EuP Directive

- Key opportunities and outcomes under EU Energy-using Product (EuP) Directive:
  - *Energy Star for consumer electronics*
  - *Energy use disclosures*
  - *Harmonized approach for external power supplies*

# Global Industry Position

- Support voluntary, market-oriented programs and initiatives
- Continue to work cooperatively with governments
- Oppose mandates on technology and products

# Global Industry Position



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# Current CEA Initiatives

- Energy consumption measurement standards for major CE products
- Common approach for conveying product energy usage information to consumers
- CE industry goal for future energy consumption, and energy efficiency design principles



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# Best Practices for Electronics

- Voluntary, market-oriented programs such as Energy Star (Public-private partnerships)
- Standards developed by industry
- Consumer education



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# ***International Conference on Standby Power***

***Session IV: Consumer electronics industry approaches and initiatives for standby power and energy efficiency***

New Delhi | 2-3 April 2008

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