



CEA®

Consumer Electronics Association

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*ITU International Symposium:
“ICTs and Climate Change”
Session 2*

Consumer ICTs: Industry initiatives and policy approaches for saving energy and reducing emissions

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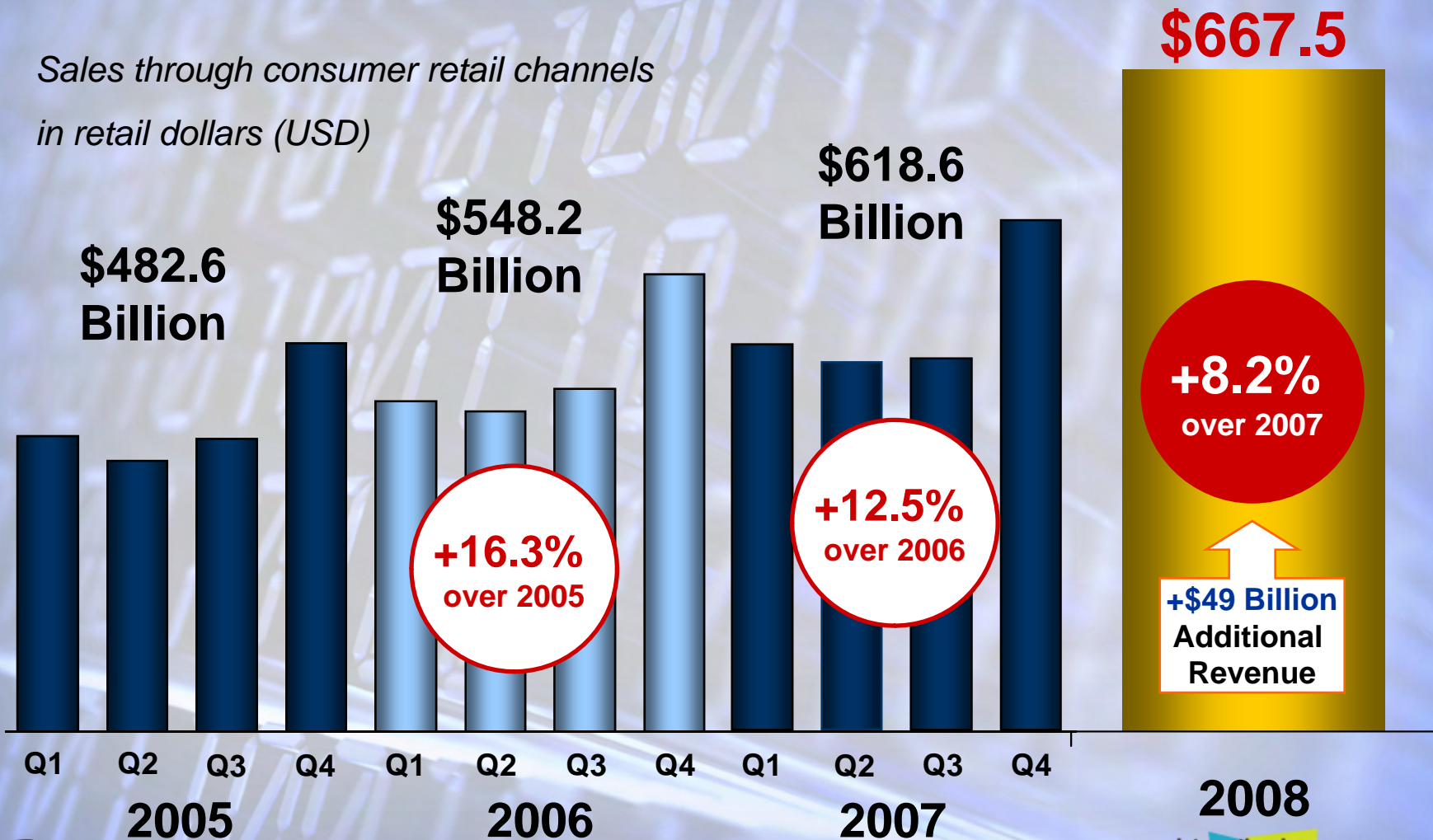
About CEA



- 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

Global CE Expenditures

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



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

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 in the consumer electronics sector while protecting innovation, competition and consumer choice?

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
- Public-private 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



Energy Star: Achievements

- *Electronics are an Energy Star success story*

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

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

Energy Star

- Growing and more active than ever
- Product specifications recently completed:
 - *Televisions*
 - *Set-top boxes*
 - *External power supplies*
- Product specifications under revision:
 - *Computers*
 - *Monitors*
 - *Imaging equipment*



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.

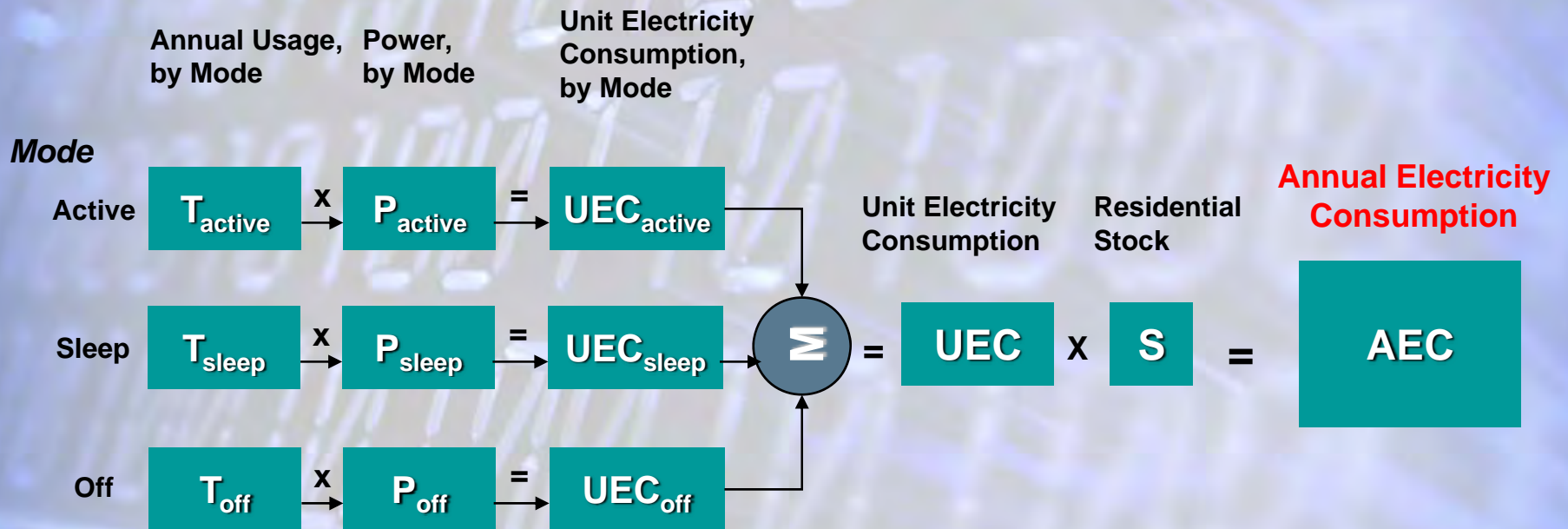
Data Concerns

- 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

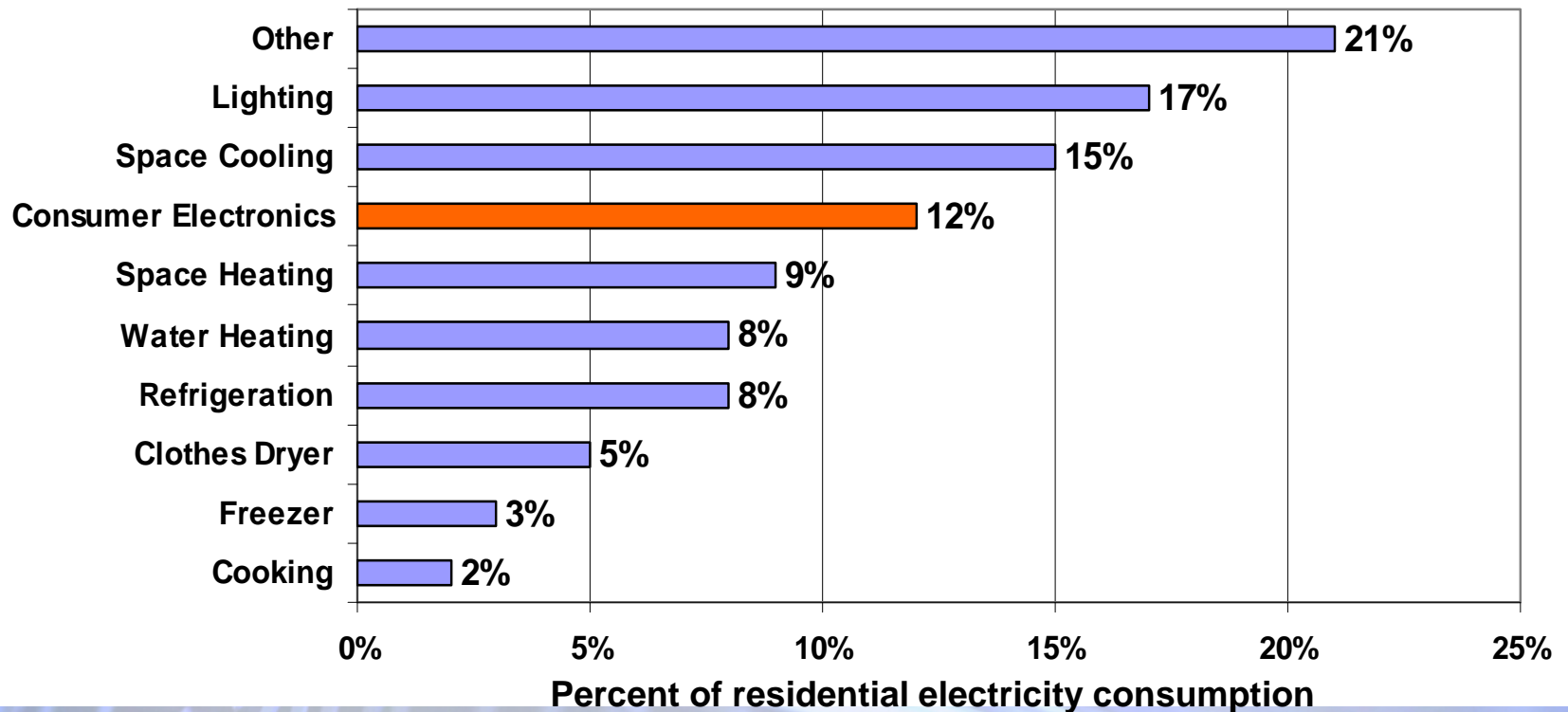
Bottom-up Approach



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

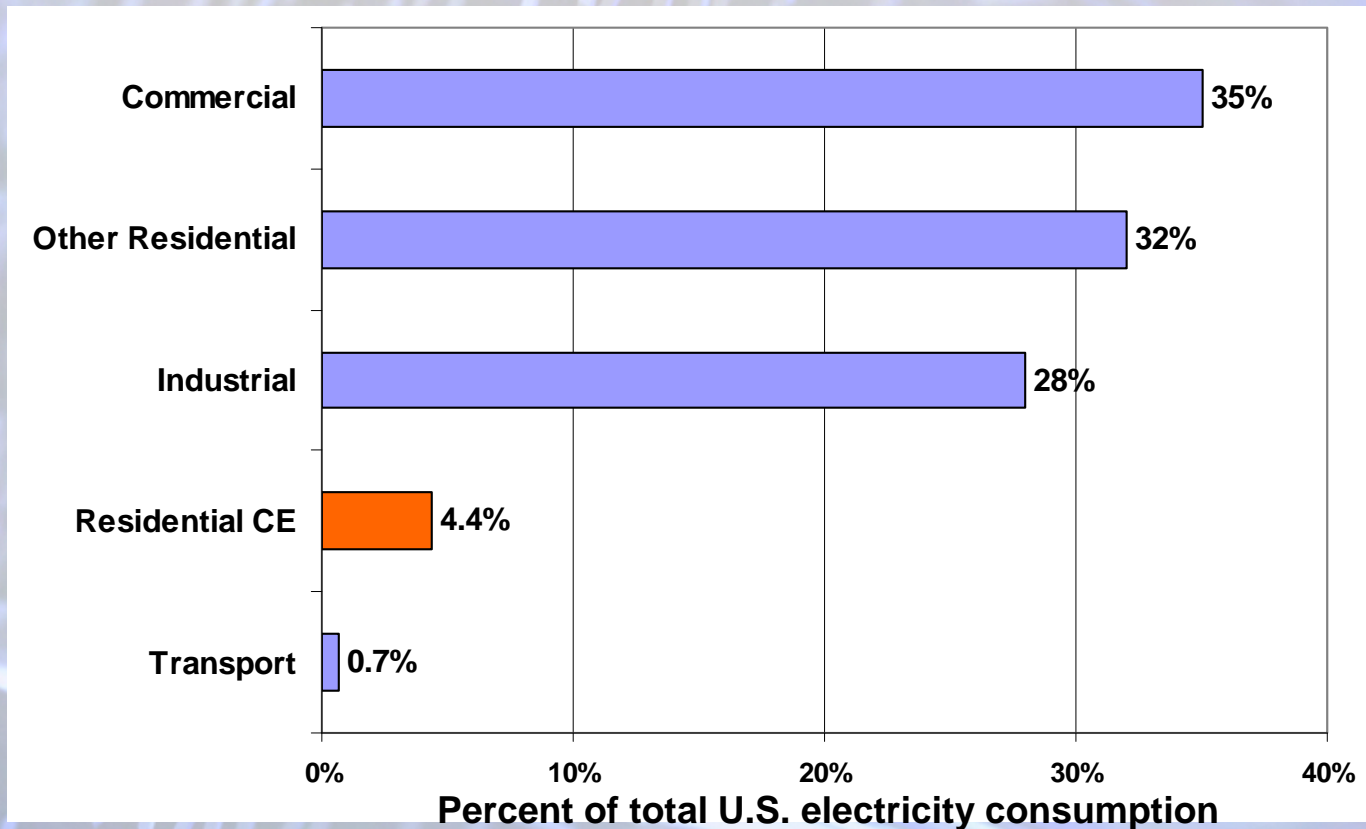
Study Findings: Energy Use

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



Study Findings: Energy Use

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



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

Additional Study

- “The Energy and Greenhouse Gas Emissions Impact of Telecommuting in the U.S.”
- Study commissioned by CEA and conducted by TIAX LLC
- Full report at www.ce.org/energy



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Telecommuting & e-Commerce

- First area of focus was telecommuting (teleworking), when workers spend one or more days working from home each week
- Second area of focus was e-commerce, the purchase of goods and transmission of information through the Internet

Study Findings: Telecommuting

- The estimated 3.9 million telecommuters in the United States reduced gasoline consumption by about 840 million gallons, while curbing CO₂ emissions by nearly 14 million metric tons (equal to removing 2 million vehicles from the road every year).

Study Findings: Telecommuting

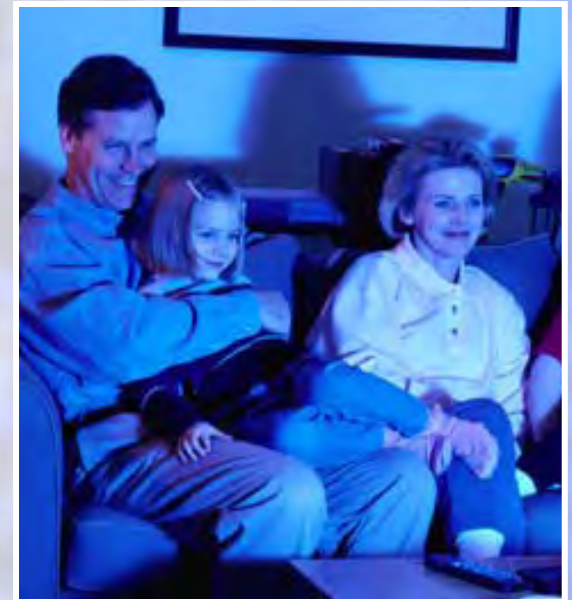
- Using electronics to telecommute saves the equivalent of 9 to 14 billion kilowatt-hours of electricity per year — the same amount of energy used by roughly 1 million U.S. households every year.

Study Findings: e-Commerce

- Downloading electronic goods instead of purchasing physical media in a retail store can provide measurable energy savings.

Study Findings: e-Commerce

- 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.



Conclusions from Study

- ICTs allow workers and consumers to participate in many daily activities, often with lower overall energy and fuel consumption and lower CO₂ generation; on an annual basis, significant national energy savings accrue.


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 62087)

Industry Standards

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

Consumer Education



Enjoy Your Electronics

Protect the Environment

Electronics improve the way we live, work and play. But, there's one place where electronics should have no impact—the environment. Through responsible use, reuse and recycling of electronics, the consumer electronics industry and consumers can protect and preserve the environment—together.

Learn About the 4 R's and Electronics:

↓ ↻ ♻️ !
REDUCE REUSE RECYCLE RETHINK

CALCULATE YOUR ENERGY CONSUMPTION



Use our [Energy Calculator](#) to see what your electronics' use means for your wallet by the minute, day, month and year.

Recycling is easy!
Many retailers offer free recycling of used electronics, so it's easy to be green.
[Locate corporate recycling programs.](#)

Find Recycling
ZIP Code:

Find Green Electronics
Product Type(s):
Computers (96)
DVD Players (71)
Fax Machines (39)
Home Theater (318)
Laptops (910)
Miscellaneous (47)
Monitors - Flat Panel (365)
Portable Audio (10)
Printers - Ink Jet (98)
Printers - Large (10)

[Legal Disclaimer](#)



Energy Saving Tips & Energy Use Calculator for Consumers

The screenshot shows the myGreenElectronics website with a green header and a white main content area. A red oval highlights the central text and the 'Energy Consumption Calculator' link. The website features a navigation menu with 'REDUCE', 'REUSE', 'RECYCLE', and 'RETHINK' options. The main content is titled 'Save Energy with Electronics!' and 'REDUCE ENERGY CONSUMPTION'. It includes a 'Find Recycling' form with a ZIP code field, a 'Find Green Electronics' form with a product type dropdown, and a list of resources including the 'Energy Consumption Calculator', 'Tips for Saving Energy for Electronics', 'Tips for caring for electronics', and 'Repair or Replace'. The website also has a footer with the CEA logo and the URL www.CE.org.

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

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(Hold Ctrl key to select multiple items)

Other Resources

- [myGreenElectronics Newsletter](#)

REDUCE
REUSE
RECYCLE
RETHINK

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

Current CEA Initiatives

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

Opportunities for Collaboration

- Support and enhancement of voluntary approaches and programs
- Industry-led standards (e.g. measurement)
- Harmonization of test procedures
- Harmonization of specifications underlying voluntary programs
- Common approach for external power supplies

Opportunities for Collaboration

- Research and analysis
- Consumer education
- Electric utility rebates
- Energy use disclosures



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Global Industry Position

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

Best Practices for Electronics

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



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