

Workshop on ENERGY STAR Electronics Program Design September 24, 2008 – Long Beach, CA



The Manufacturer Perspective

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Presentation

- CEA and the consumer electronics market
- Vision for energy efficiency
- Value of ENERGY STAR for the CE industry
- Opportunities for partnership and collaboration

Consumer Electronics Association

- Over 2,300 corporate members
- International CES
- Research
- Industry standards
- Public Policy
- Education
- Executive conferences





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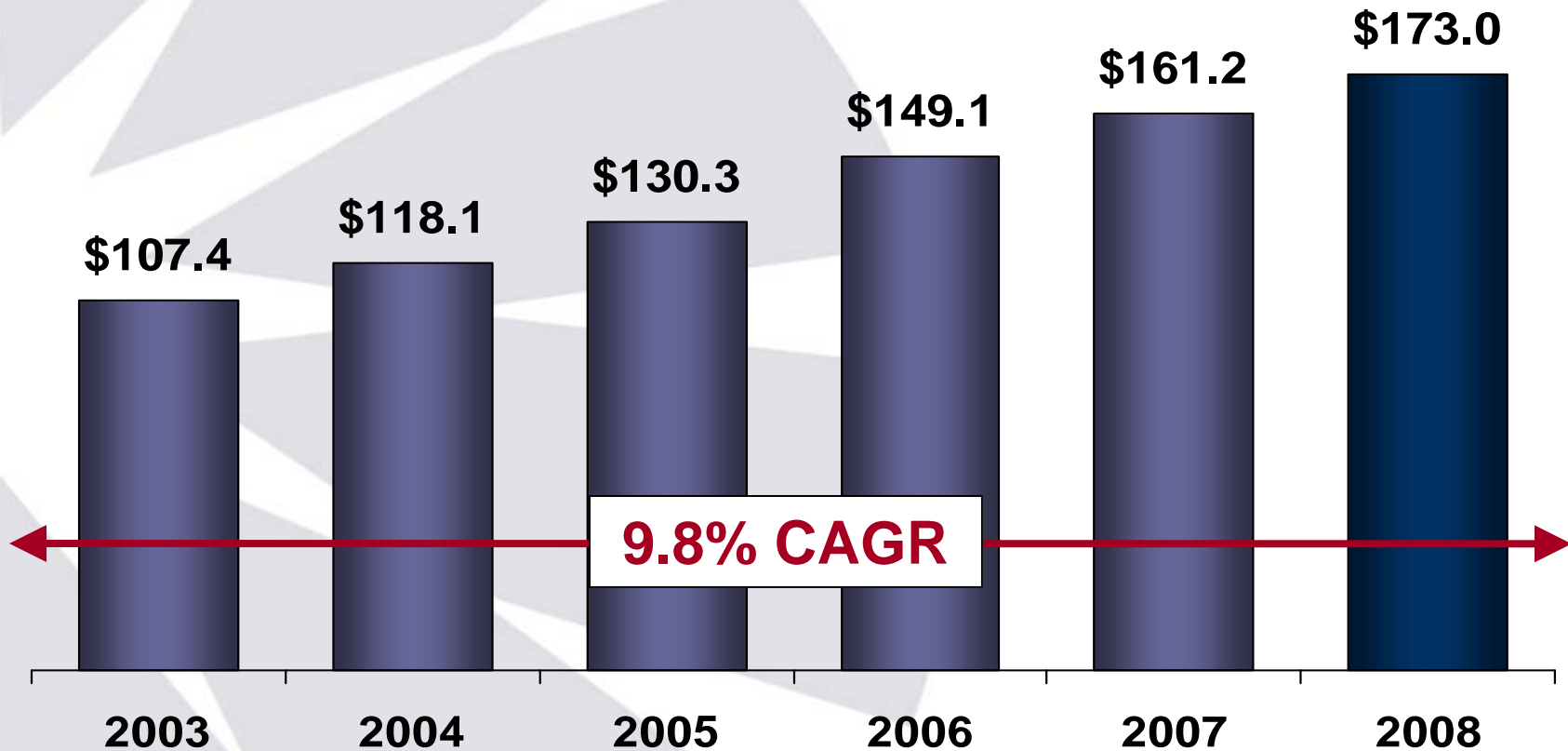
Consumer Electronics

- 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



CE Industry Overview: The Era of Growth

U.S. CE Shipment Revenue in Billions



Source: CEA Sales and Forecasts, July 2008

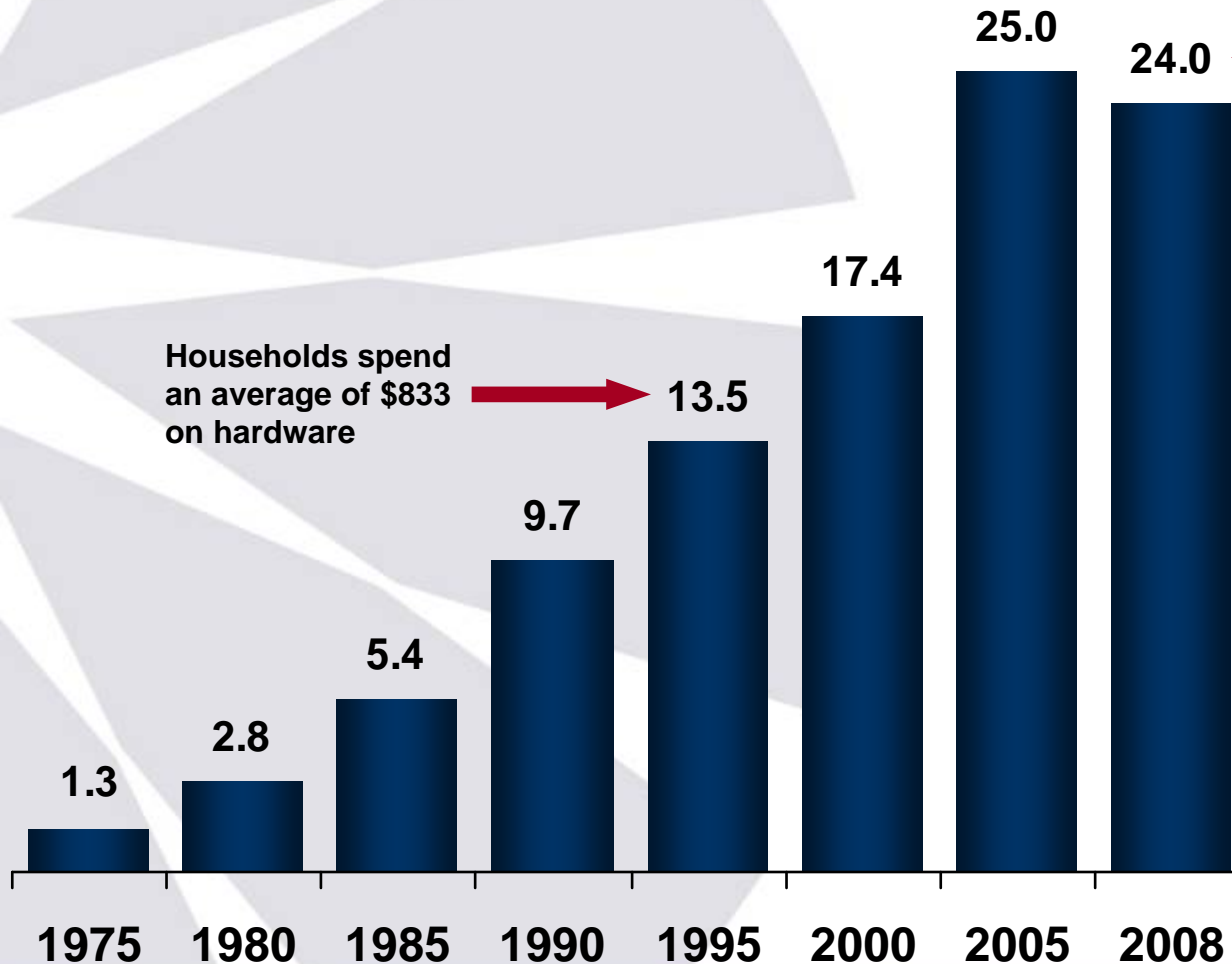


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Consumers Eagerly Embrace CE

Total non-discrete average ownership per U.S. household (Multiple units may be owned)



In 2008, U.S. consumers are expected to purchase about 500 million CE devices.

Key Trends and Growth Drivers

- Convergence of device and content
- Greater realism: Higher resolution displays, images and audio
- Greater connectivity: Wireless takes center stage

2007 Fastest Growing Products (based on U.S. shipments)

Next Gen DVD Players	521%
Head Units w/HD Radio Capability	421%
Full HD (1080p) TVs	264%
<i>8+ megapixel Digital Cameras</i>	<i>190%</i>
<i>Portable Navigation</i>	<i>145%</i>
<i>MP3 Players + Video Playback</i>	<i>83%</i>
LCD TVs	72%
O/E Integration (in-vehicle connectivity)	58%
DVD Players (non-recording, non-portable)	52%
Gaming Hardware	50%

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



Vision for energy efficiency



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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?

CE Industry Approaches & Initiatives

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

Drivers for Market Transformation

Key drivers of energy efficiency 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*

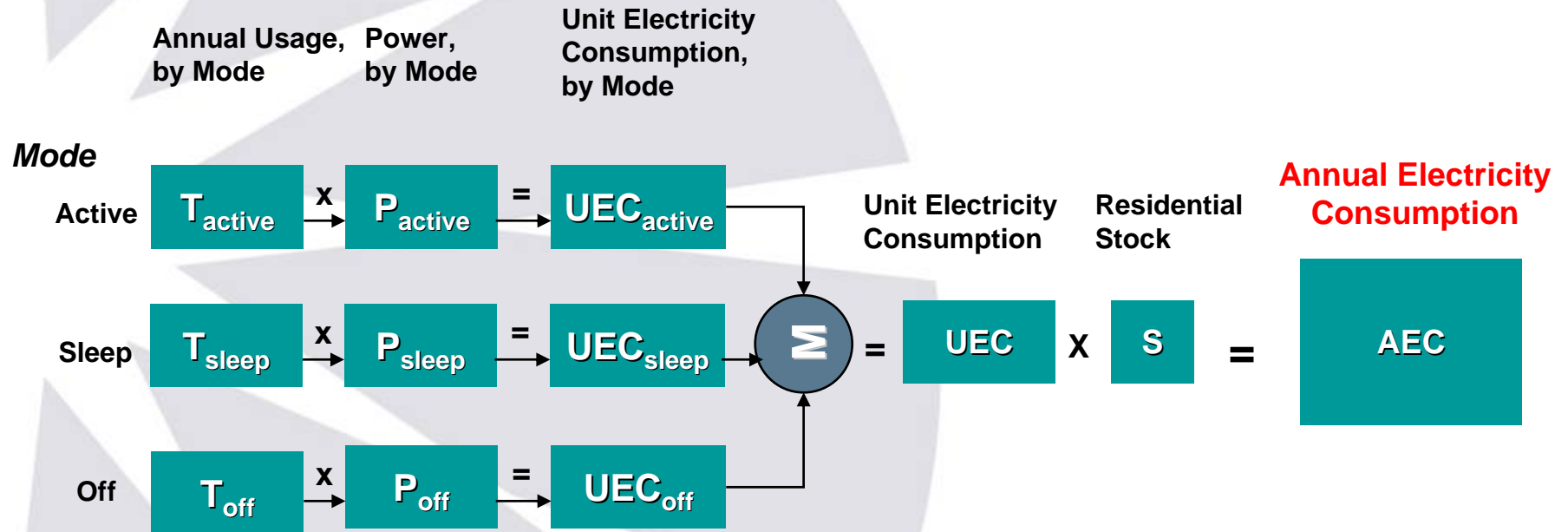
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CEA-Commissioned Study

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

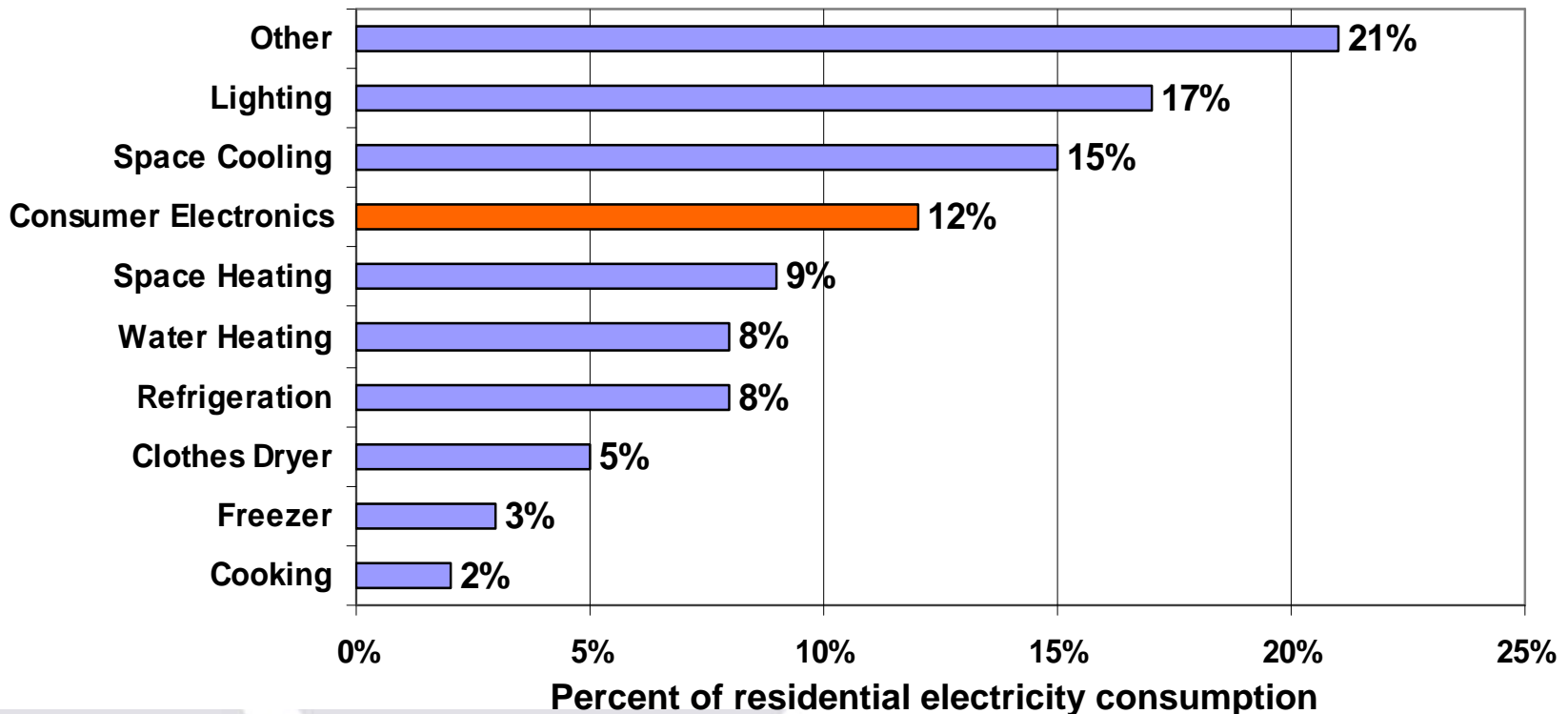
Bottom-up Approach



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

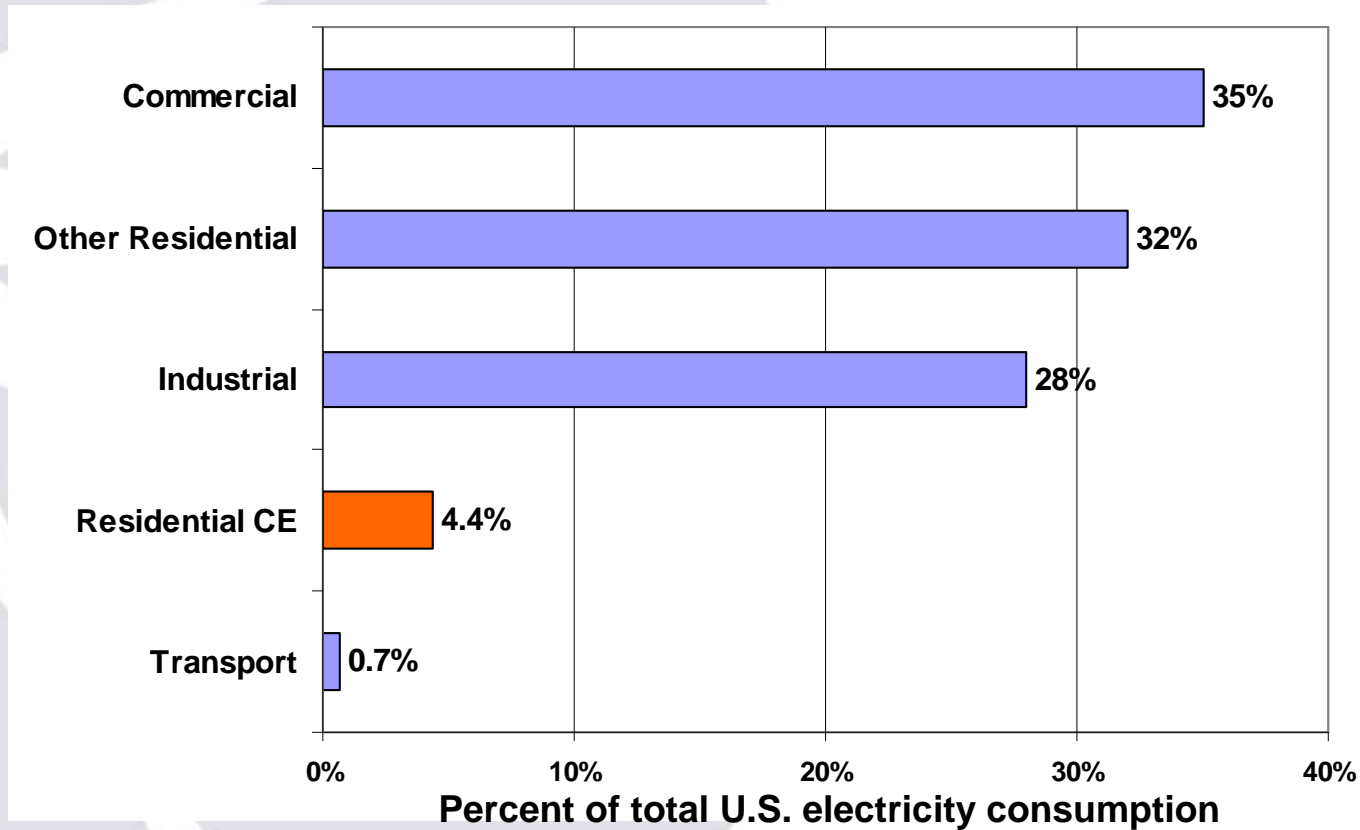
Study Findings: Energy Use

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

New Study Commissioned by CEA

- Electronics significantly reduce energy use and CO₂ 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 CO₂ 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.



CE Industry Approaches & Initiatives

- Research and analysis
- **Standards developed by industry**
- Consumer education
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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 62087:2008(E)]*

Industry Standards

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

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 stakeholders to influence industry standards to save energy while protecting innovation and consumer choice.

CE Industry Approaches & Initiatives

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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:



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.



Find Recycling

Find Green Electronics

Product Type(s):

- Computers (96)
- DVD Players (71)
- Fax Machines (39)
- Home Theater (316)
- Laptops (910)
- Miscellaneous (47)
- Monitors - Mat Panel (265)
- Portable Audio (10)
- Printers - Ink Jet (98)
- Printers - Large (10)

[Legal Disclaimer](#)

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



Energy Saving Tips & Energy Use Calculator for Consumers

myGreenElectronics

REDUCE
REUSE
RECYCLE
RETHINK

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](#)

www.myGreenElectronics.org

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- Research and analysis
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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



CE Industry Approaches & Initiatives

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- **Voluntary, market-oriented programs**



Value of ENERGY STAR for the CE industry



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ENERGY STAR: Advantages

- Voluntary, market-driven and international
- Government-industry partnership
- Captures broad range of CE 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 STAR	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.

Regulatory Approaches

- Establish mandatory requirements
- Limit energy use in one or more operating modes
- Present regulatory burdens and costs (for industry and government)
- Structured and relatively inflexible

The Problems with Regulation

- Government regulation and mandatory limits never keep pace with technology
- Product definitions change
- Products converge, new product categories emerge
- Technical complexities with consumer electronics
- Operating modes and functions change

2008 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 partnership and collaboration



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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
- Energy use disclosures

Promotion of ENERGY STAR for TVs

- New specification for TVs
- Consumer education campaign
- Raise consumer awareness of ENERGY STAR for TVs; support and encourage purchases of TVs meeting the new specification
- Three upcoming major sales periods
- Partnership opportunity



Utility Rebates

- Voluntary, market-oriented, incentive-based approach
- CE market is complex and fast-moving; adding layers of advanced specifications could be problematic

Structuring a Program for CE

- A successful market-oriented efficiency program should rely heavily on the ENERGY STAR program
- Key considerations and opportunities:
 - National/international focus
 - Collaboration (consumer education, industry standards, etc.)



Thank You



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