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ENERGY STAR[®]

**Making It Easy
To Make A Difference**

**ENERGY STAR[®] Labeled
Set-top Boxes**



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Overview

- What is ENERGY STAR®?
- ENERGY STAR® Labeled Set-top Boxes
- STB Specification
- Designing for Energy Performance
- Conclusion



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What is ENERGY STAR[®]?



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The ENERGY STAR[®] Philosophy

- Foster public-private partnerships
- Reduce air pollution
- Recognize the most energy-efficient product models in the market
- Maintain customer satisfaction
- Encourage innovation and competition



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The ENERGY STAR[®] Label

- Voluntary labeling program
- Seeks market transformation
- The ENERGY STAR[®] label is a trusted symbol that identifies products with superior energy performance



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ENERGY STAR[®] Products

- More than 1,200 manufacturers
- About 7,000 product models
- Over 30 product areas, including ...

**Commercial
Buildings**

Windows

Consumer
Electronics

Office
Equipment

Appliances

Residential
Lighting

HVAC

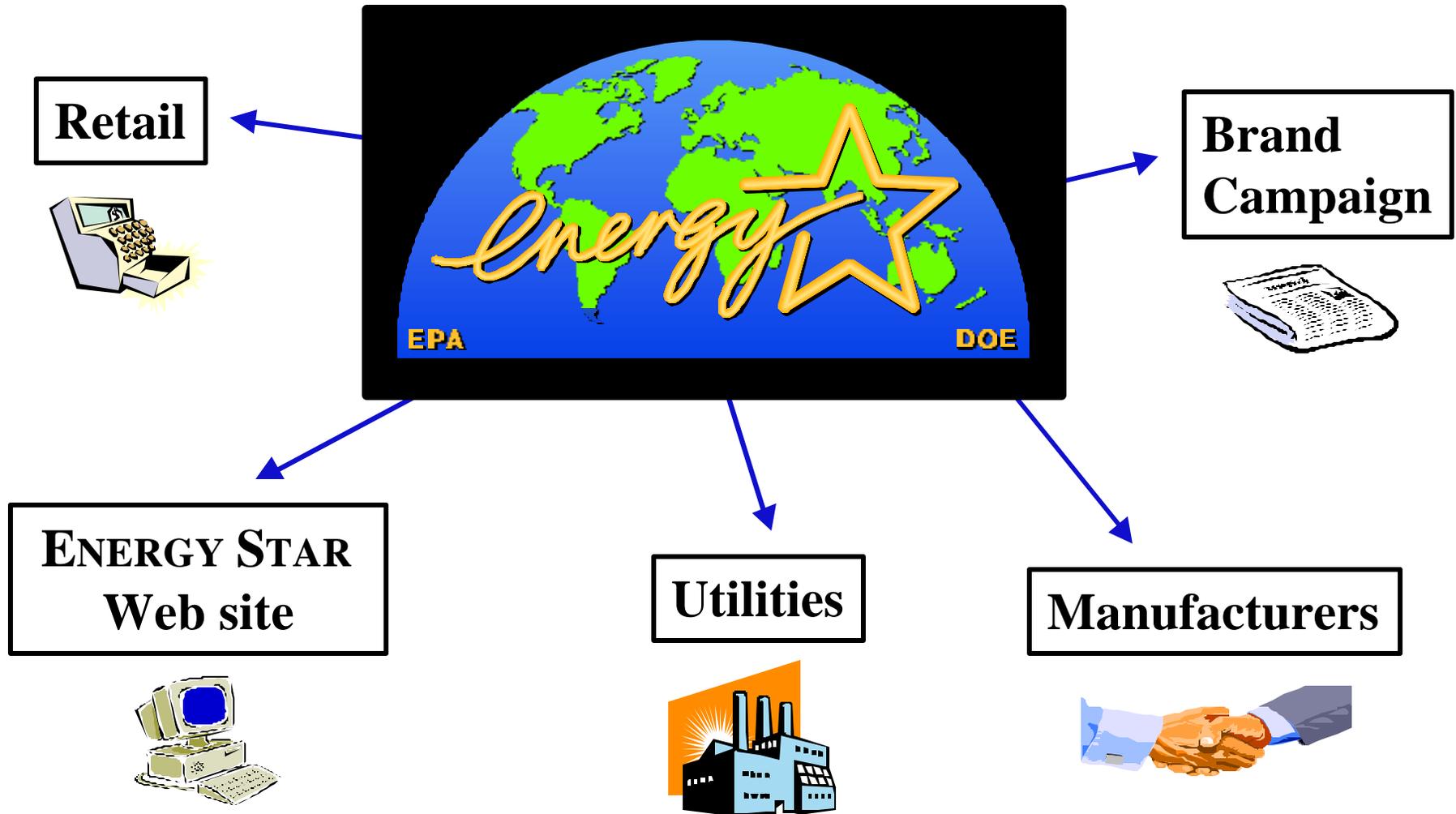
Exit Signs

Insulation

**ENERGY STAR
Homes**



ENERGY STAR[®] Network: A Turn-key Approach

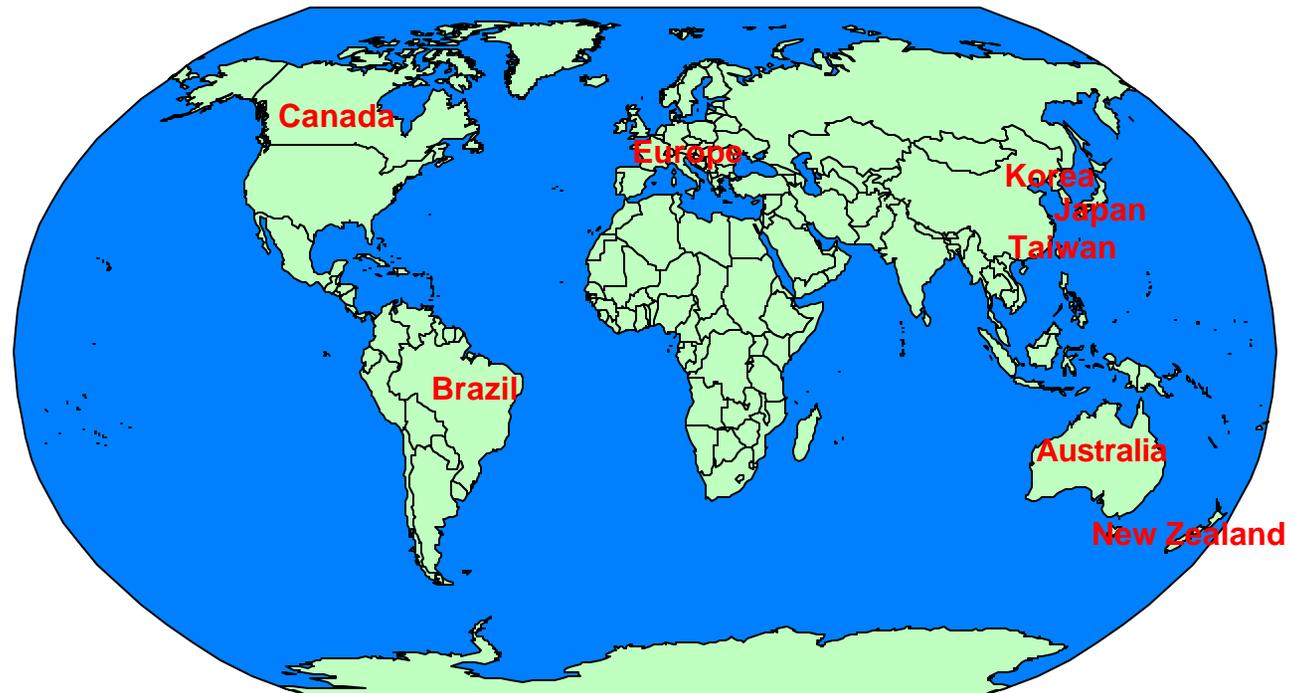




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International Expansion and Coordination





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ENERGY STAR[®] Labeled Set-top Boxes



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Why Label Set-top Boxes?

- Potential for more energy-efficient design
- The growing set-top box market
- Market differentiation
- If all set-top boxes met ENERGY STAR[®] specifications:
 - Consumers would save \$300 million and emissions equivalent to 440,000 cars would be prevented annually



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Why Now?

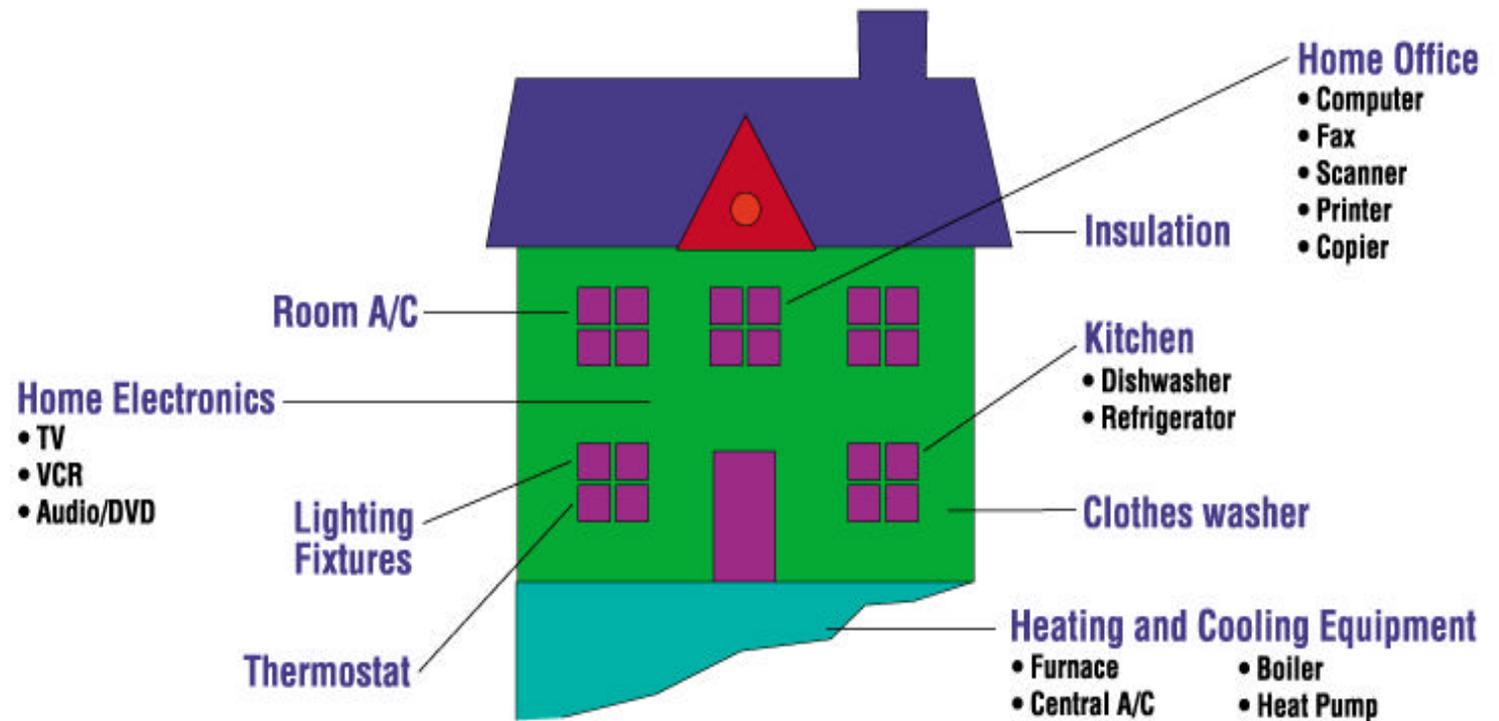
- Europe is developing standards
- California is considering standards
 - High levels of standby power
 - Rising energy costs
 - Blackouts and brownouts



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Whole Home Approach





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What Can the Label Do for You?

- Offer Competitive Advantages
- Satisfy Customers/Meet Demand
- Demonstrate Corporate Stewardship



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Offer Competitive Advantages

Use the label to . . .

- Showcase superior product design
- Differentiate your products
- Gain positive publicity and increased customer loyalty



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Satisfy Customers/Meet Demand

- Consumers have safety/performance concerns
- Some cable operators have expressed concern that STBs run “hot”
 - Adelphia, AT&T, Comcast, MediaOne
- Demand for energy-efficient products is growing



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Demonstrate Corporate Stewardship

- The ENERGY STAR[®] label = real pollution, energy, and dollar savings.
- Be a corporate leader: demonstrate innovation
- Enhance relations with consumers and your image in the marketplace



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Set-top Box Specification



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Product Category	Tier 1: Standby/Low-power Mode (to 12/31/03)	Tier 2: Standby/Low-power Mode (from 1/1/04)	
Category 1 <ul style="list-style-type: none"> • Analog Cable TV Set-top Box • Advanced Analog Cable TV Set-top Box • Digital TV Converter Set-top Box • Internet Access Device • Video Game Console • Videophone Set-top Box • Set-top Box (e.g., Internet access device) with Cable Modem for enhanced communications in Standby/Low-power Mode 	≤ 3 Watts	One specification for all set-top boxes:	
Category 2 <ul style="list-style-type: none"> • Digital Cable TV Set-top Box • Satellite TV Set-top Box* • Wireless TV Set-top Box • Personal Video Recorder 	≤ 15 Watts (for satellite systems, add ≤ 5 Watts for each LNB)		≤ 7 Watts (for satellite systems, add ≤ 5 Watts for each LNB)
Category 3 <ul style="list-style-type: none"> • Multifunction Device (i.e., a physically integrated device that has the core function of a satellite TV set-top box, digital cable TV set-top box, wireless TV set-top box, or personal video recorder plus one or more additional functionalities, such as an Internet access device or video game console) 	≤ 20 Watts (for satellite systems, add ≤ 5 Watts for each LNB)		



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Testing Guidelines

- Self-certification
- Average true power in standby/low-power mode
- Tested as shipped to consumer
- If networked, test while connected



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**Manufacturers, Companies, and
Associations that
Commented or Advised EPA on
STB Specifications**



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Advanced Micro Devices	Memcorp
AT&T/MediaOne	Motorola/General Instrument
Cable Labs	National Cable Television Association
Charter Communications	Pace
Comcast Cable Communications	Philips
Consumer Electronics Association	Pioneer
Cox Communications	Ratek Corporation
Delta Electronics	Scientific-Atlanta
DirecTV	SEGA
EchoStar	Sharp Electronics
Electronic Industries Alliance (EIA)	Silicon Wave
Hughes Electronics	Sony
Information Technology Industry Council (ITI)	Sun Microsystems
Intel	Thomson Consumer Electronics
JVC Americas Corp.	Time Warner Cable
Lucent Technologies	TiVo
Matsushita/Panasonic	Toshiba
	Zenith



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Design for Energy Performance



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Manage Power Use

- Use flash memory or Static RAM (SRAM)
- Turn off set-top outputs and graphics to the TV
- Power only those tuners in active use
- Do not power circuits that are not connected
- Power up interfaces
- Power down sections of the circuitry not in use
- Design operating systems that provide power based on usage or time-based rules



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Design to Maximize Efficient Features

- Operate at higher data transmission speeds
- Add auxiliary circuits to detect state changes
- Design hardware as an enabler
- Slow down the CPU during idle operation

Use More Efficient Components

- Use LCD displays
- Incorporate low power data receivers, low power tuners

Look for Other Opportunities

- Incorporate tuners into ICs



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**Conclusion:
Working to Transform the
Market**



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How To Join ENERGY STAR®

- Sign the Partnership Agreement and become a charter partner
 - In two years, manufacture at least one compliant product
- Label your company's compliant products
- Train and educate staff on selling points of ENERGY STAR® products
- No participation or program fees
- Self-verification



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As a Partner You Receive:

- A full range of program support materials and services
- Free point-of-purchase and sales training materials
- A listing on EPA's Web site
- Sample marketing and media materials
- Access to utility, retail, and co-branding promotions



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For More Information

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