



# ENERGY STAR<sup>®</sup> Program Overview

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**US Department of Energy**  
**IEA Experts Group on Priority**  
**Setting and Evaluation -- April 27-28, 2010**



# Overview



- **What is ENERGY STAR®?**
- **Guiding Principles**
- **Value for Partners**
- **Examples of Success**
- **Challenges and Opportunities**
- **International Dimension**



# What is ENERGY STAR?



- **ENERGY STAR** is a voluntary **government-backed** program dedicated to helping individuals protect the environment through **superior energy efficiency**
- **ENERGY STAR** is the national symbol of energy efficiency, making it easy for consumers and businesses to identify high-quality, energy-efficient products
- **ENERGY STAR** distinguishes what is efficient/better for the environment without sacrificing features or performance
- Products that earn the **ENERGY STAR** meet strict energy performance criteria set by EPA/DOE



# Earning the Label



- **EPA and DOE establish energy-efficiency criteria**
  - Follow key “guiding principles”
  - Open process with input from manufacturers and others
- **Interested manufacturers, retailers, and energy efficiency program sponsors join the program – and gain the ability to use the symbol - by signing a Partnership Agreement**
- **Qualified products can display the ENERGY STAR label**



# ENERGY STAR Guiding Principles



- **Significant energy savings**
- **No impact on product performance**
- **Cost effective**
- **Several technology options can qualify**
- **Energy consumption can be quantified**
- **Label differentiates products and is visible to purchasers**



# 60+ Product Categories Are Covered by ENERGY STAR in the US



**Lighting**  
CFLs  
Residential light fixtures



**Home Envelope**  
Home sealing  
Roof products  
Windows/Doors

**Heating & Cooling**  
Central AC  
Heat pumps  
Boilers  
Furnaces  
Ceiling fans  
Room AC  
Ventilating fans

**Office Equipment**  
Computers  
Monitors  
Printers  
Copiers  
Scanners  
Fax machines  
Multi-function Devices  
Servers

**Commercial Food Service**  
Refrigerators  
Freezers  
Fryers  
Steamers  
Hot Cabinets  
Griddles  
Ovens  
Vending machines

**Appliances**  
Clothes washers  
Dishwashers  
Refrigerators  
Dehumidifiers  
Air cleaners  
Water coolers

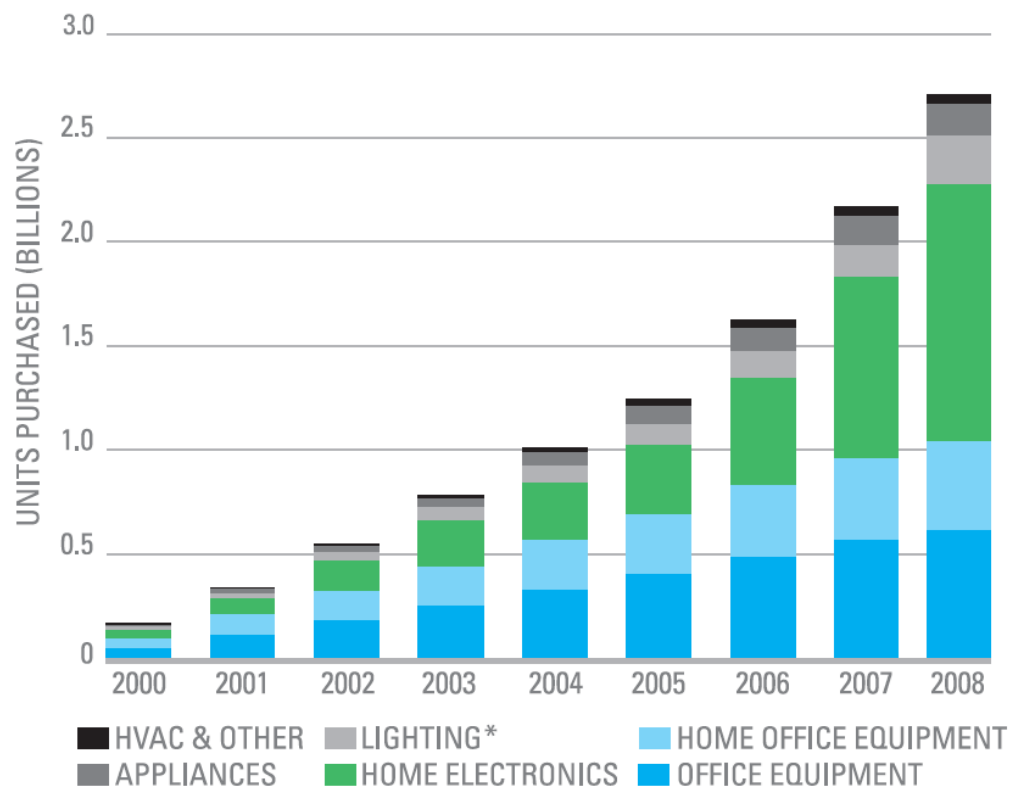
**Home Electronics**  
Battery chargers  
Cordless phones  
Answering machines  
TV  
DVD products  
Home audio  
External power adaptors



# ENERGY STAR Products



- About 3 billion products sold last year
- sold across more than 40,000 models
- in more than 60 product categories
- can reduce energy use by up to 90%



\*Lighting category does not include purchases of compact fluorescent bulbs.



# Market-Building Tool



- **Promotional designation for product marketing**
  - Ads, collateral materials, etc.
- **Basis for Utility Program eligibility**
  - Rebates, financing for ENERGY STAR qualified products
- **Procurement specification for large organizations**
  - Many organizations specify ENERGY STAR
- **Sales tax holidays and other tax incentives (tax credits) often reference ENERGY STAR**
- **Federal ARAR allocation to states of \$300 million**





# Partner Network: Retailers Create Visibility



**In-store Signage**

**FREE GIFT CARD + FREE DELIVERY + 12 MONTHS NO PAYMENTS**  
\* TO \$150 BY MAIL-IN REBATE ON ANY MAJOR APPLIANCE PURCHASE OF \$299 OR MORE. \*\* A \$50 VALUE BY MAIL-IN REBATE. NO PAYMENTS, NO INTEREST FOR 12 MONTHS WHEN PURCHASED ON YOUR HOME DEPOT CREDIT CARD FROM 9/29/05 - 10/2/05.\*

You can do it. We can help. **FREE HOME DEPOT GIFT CARD**  
 Buy a major appliance at the following amounts and receive a Home Depot gift card by mail-in rebate 9/8 through 10/03/05:

\$297 - \$496	\$25 Gift Card
\$497 - \$746	\$50 Gift Card
\$747 - \$996	\$75 Gift Card
\$997 - \$1496	\$100 Gift Card
\$1497 - Plus	\$150 Gift Card

**SAVE MONEY, SAVE ENERGY**  
 Look for the Energy Star® label to cut utility bills without sacrificing performance.

<b>MAYTAG®</b> 25.6 Cu. Ft. Side-by-Side Refrigerator. Electronic cubed/crushed ice. Push-in II retractable water and ice dispenser. MS42651HEW (Depot Direct 217427) <b>\$999</b> ONLY \$29 PER MONTH*	<b>MAYTAG®</b> French Door Refrigerator. Spill-Catcher® shelves. Wide-N-Fresh™ deli drawer. MFJ355HEW (Depot Direct 217427) <b>\$1499</b> PER MONTH*	<b>EXCLUSIVE GE® Adora™</b> Side-by-Side Refrigerator. Tall LightTouch® dispenser provides chilled water, cubed or crushed ice. D559499 (Depot Direct) <b>\$1499</b> ONE PER MONTH*	<b>LG</b> Panorama 25.0 Cu. Ft. Refrigerator <b>\$349</b> PER MONTH*
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**FREE \$150 GIFT CARD\*\*** (Also available in select areas.)

**Weekly Circulars**



# ENERGY STAR Successes

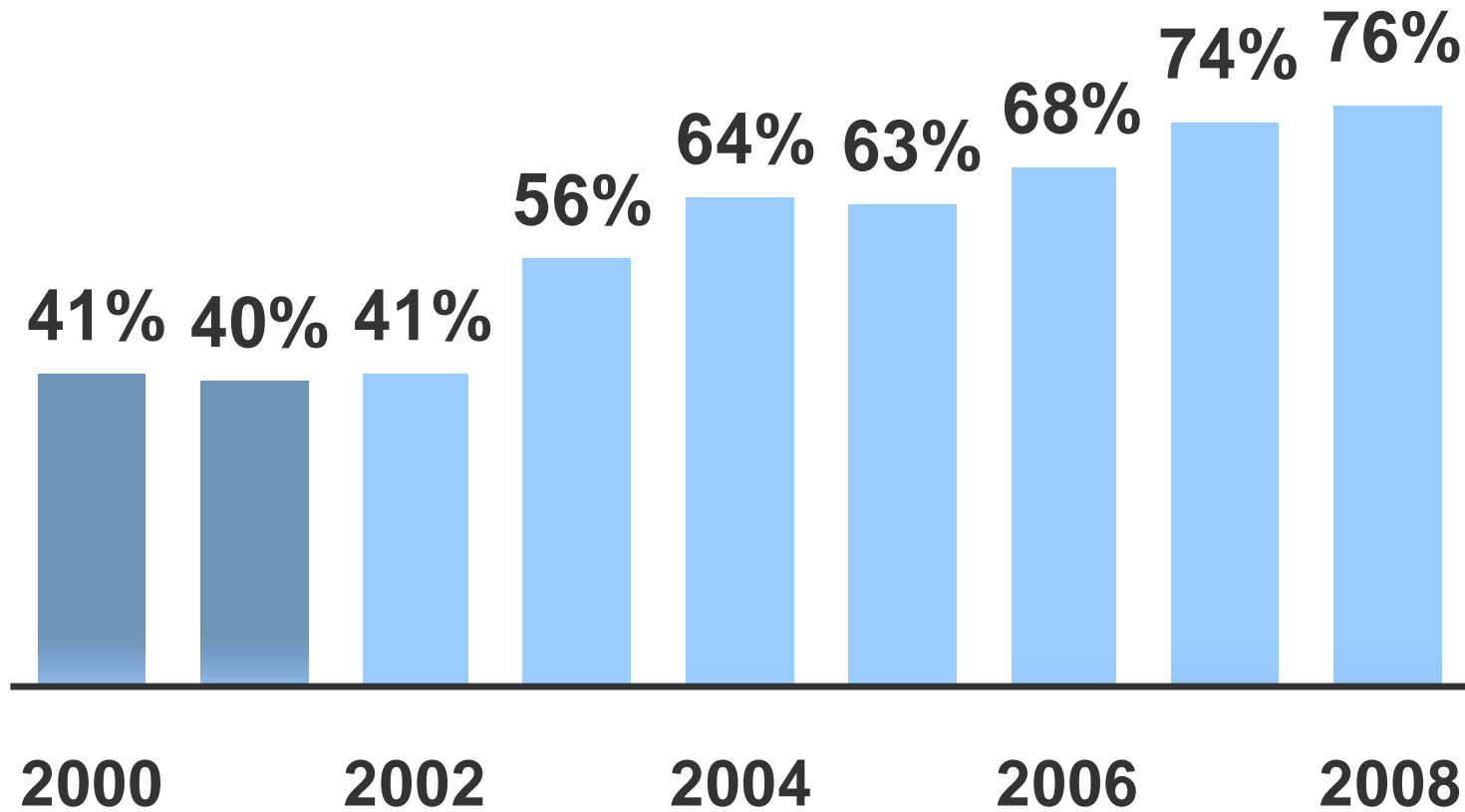


## In 2009 alone, Americans:

- saved **\$17 billion dollars** off energy bills with **ENERGY STAR** ;
- Saved over 190 billion KWH of electricity or approximately 5% of US demand
- saved **45 MMTc<sub>e</sub>**, equivalent to the annual emissions of 30 million cars.



# Consumer Awareness is High



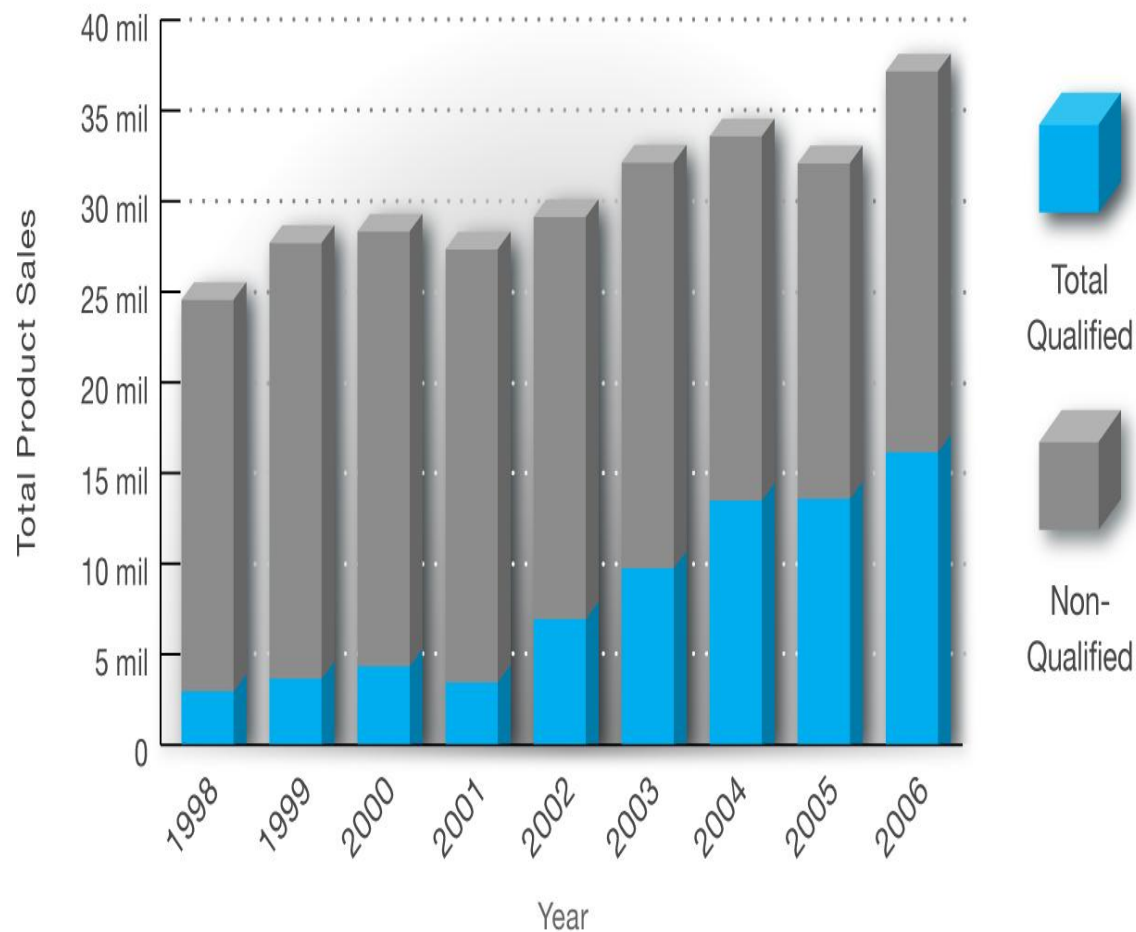
Source: Consortium for Energy Efficiency Household Surveys (2002-2007)



# Appliances

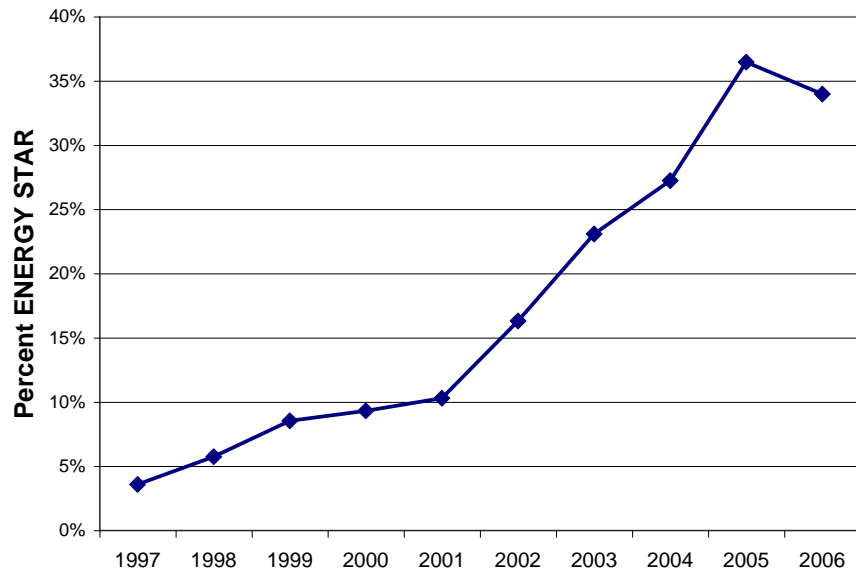


- Market share growth





# Clothes Washer Results



**Every clothes washer sold today is more efficient than the best clothes washer available at the beginning of 1997.**



- **Label introduced in 1998**
- **Promoted by utilities, retailers, manufacturers**
- **Market share increased from less than 1% to 35%**

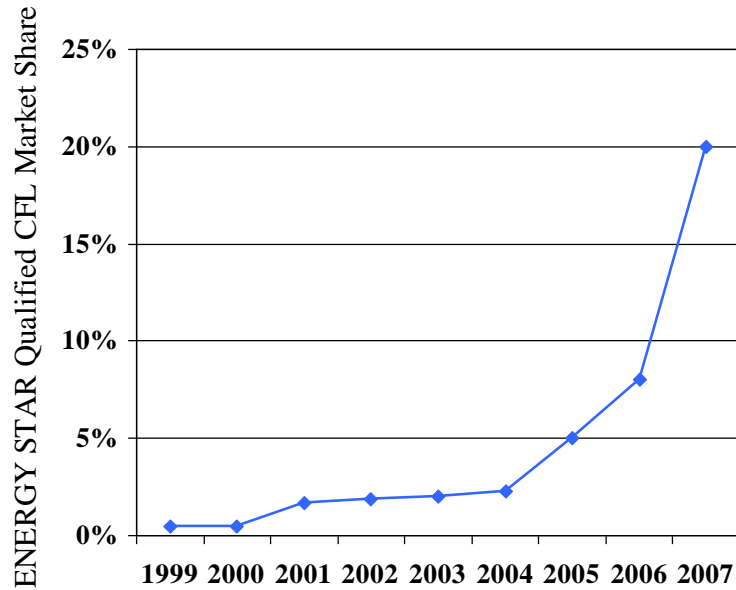


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# CFL Sales



Market Share for ENERGY STAR Qualified CFLs has increased from less than **1%** to almost **20%**.

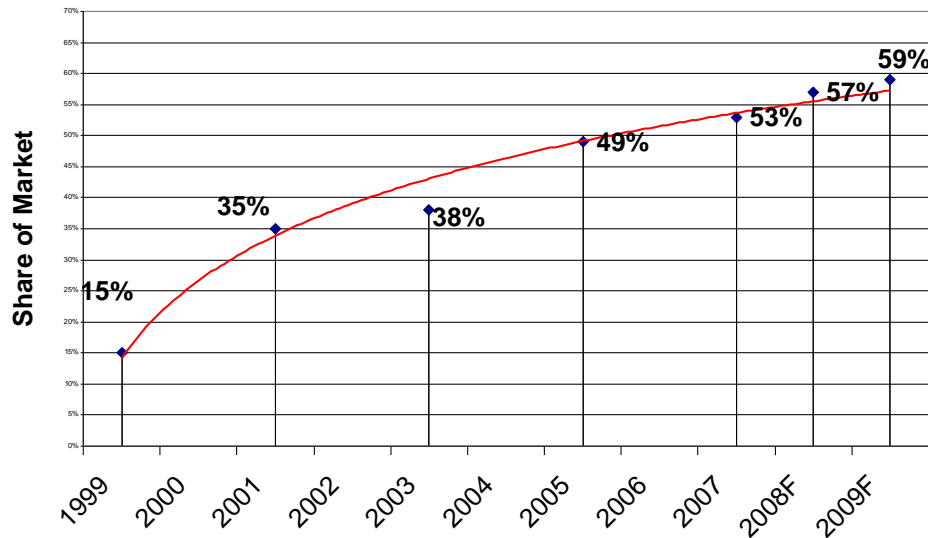
- **Improved quality**
- **Higher customer satisfaction**
- **Increased promotions**
  - Wal-Mart pledge to sell 100 million CFLs in 2007
  - Actually Wal-Mart sales exceeded 100 million
  - Over 50 utilities & states implement promotions
- **Overwhelming support of lighting industry**



# Success Story: Windows



ENERGY STAR Market Share Growth



**Most of the ENERGY STAR windows sold today are 2-3 times more efficient than the single-paned windows that are still standard in most US homes.**

- Added to ENERGY STAR in 1998
- Market share increased from **15%** to over **50%**





# Why ENERGY STAR Water Heaters?



- **Last major residential end use to be addressed by ENERGY STAR**
  - Water Heating accounts for 15.5% of residential energy consumption; 2<sup>nd</sup> largest end use of residential energy
  - For “typical” home, 3rd highest end use expenditure behind heating and cooling
- **Technology advances and entry into advanced technology market of established manufacturers**



# Technologies



**Gas  
Condensing**



**Heat Pump  
Water  
Heater**



**Solar**



**Gas Tankless**

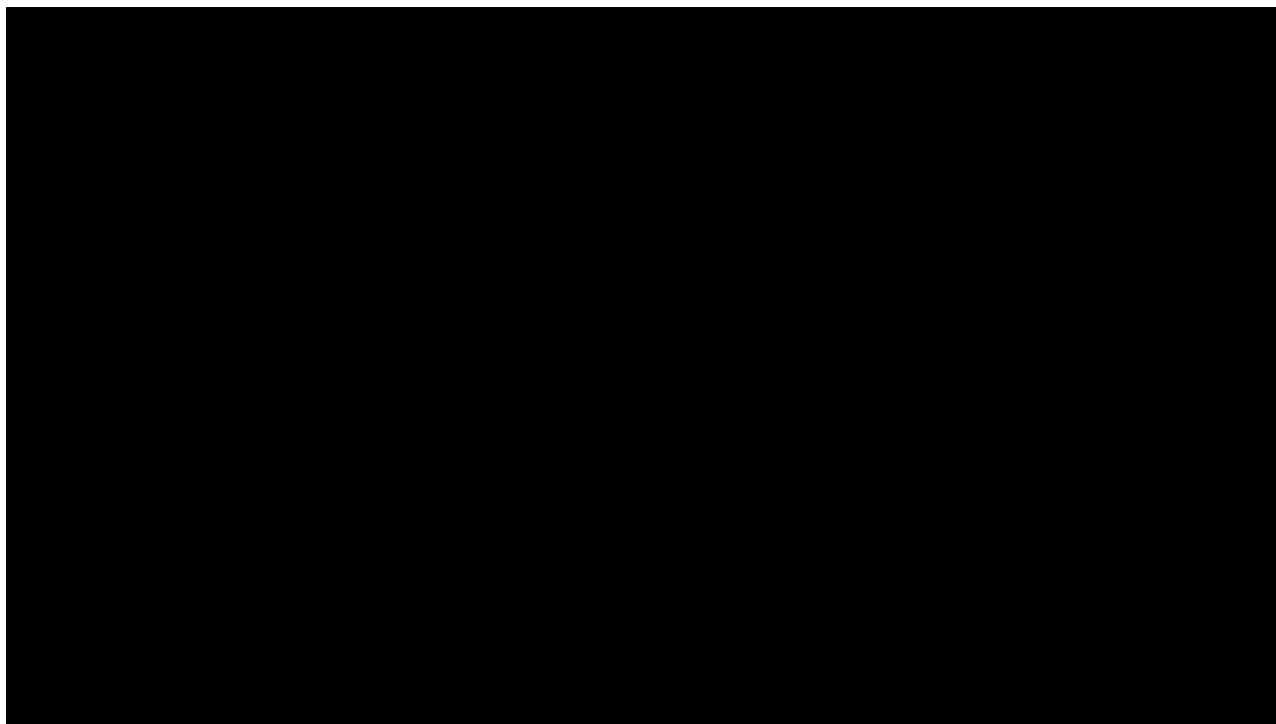


**HE Gas Storage**





# Recent Advertisement





# ENERGY STAR for New and Existing Homes



## ENERGY STAR Qualified New Homes Gaining Market Share

One in 10 new homes built in the United States earns the ENERGY STAR, but in 10 states and more than 20 metropolitan areas, market penetration is greater than 20%.



- **Annually more than 28,000 homeowners are saving energy thanks to state and local sponsored Home Performance with ENERGY STAR – with 27 sponsors around the country**
- **More than 100,000 ENERGY STAR new homes in 2009, for a total of more than 1,000,000 homes**
- **More than 20% of new homes in U.S. earn the label and save owners 20-30% above standard homes**
- **Low-income housing tax credits in some states tied to certification**
- **Energy Star program includes on line assessment tools, installation guidelines, etc.**

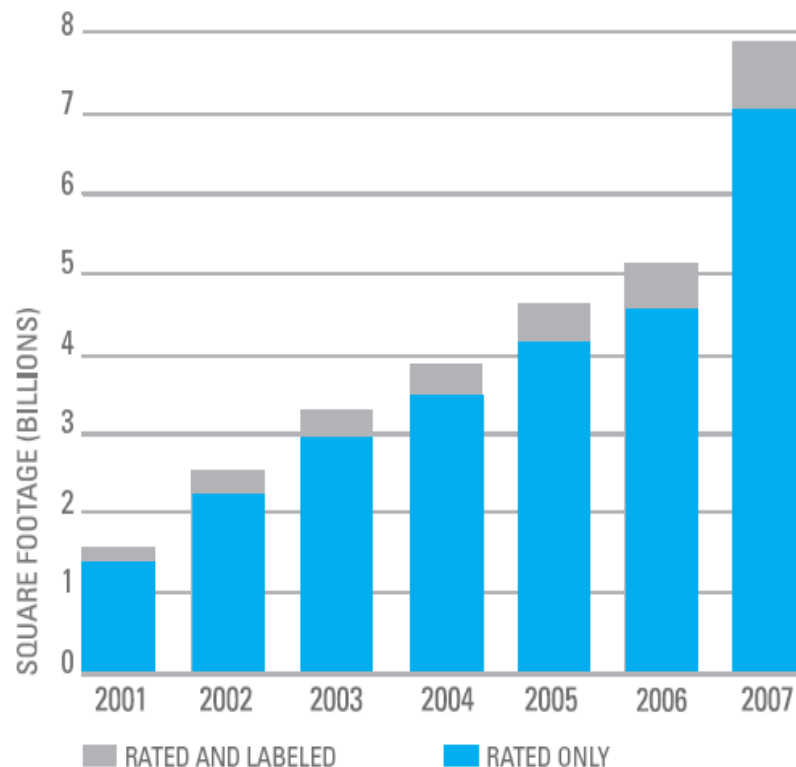


# ENERGY STAR

## Commercial and Industrial



- **Benchmarking through 2009:**
  - More than 80,000 buildings representing more than 11 billion sq ft
  - 8,700 Buildings have earned the ENERGY STAR
  - The ENERGY STAR Challenge is challenging organizations across multiple sectors to improve the performance of their entire portfolio by 10% or more.
- **Partners with 17 manufacturing sectors (e.g. steel, petrochemicals, cement, glass, automobiles, etc.) and hundreds of industrial companies.**
- **Energy – Water Nexus; wastewater facilities and energy use**





# Challenges – Program Integrity



- ❖ **Challenges - over reliance on industry**
  - Manufactures integrity
  - Industry self certification and self policing
  - Aftermarket product testing by manufactures competition self compliance to assure efficiency claims
  
- ❖ **March 2010 Government Accountability Report**
  - Covert testing shows the certification process subject to fraud and abuse
  - Bogus products could qualify for the program
  - Self certification of new products is insufficient



# ENERGY STAR

## Response/Improvements



- ❖ **Bolster verification and testing**
  - Manufactures must submit complete laboratory testing reports and results from an approved, accredited laboratory
  - DOE conducting off-the-shelf product testing at third-party, independent test laboratories
  - Ongoing verification testing program to ensure continual compliance
- ❖ **Enforcement**
  - Formation of enforcement teams to monitor compliance
  - Action taken against 35 manufactures



# ENERGY STAR

## Response/Improvements



### ❖ **“SUPER STAR”** program

- **US EPA will set performance levels for super efficient products**
- **“Super Star” is to reflect higher tier; the name and look of this higher tier will be developed and rolled out in fall of 2010**
- **Generally, products in top 25% will qualify at Energy Star and top 5% will qualify as “Super Star”**





# ENERGY STAR is International



- **U.S. Government has arrangements with agencies in other countries regarding ENERGY STAR for office equipment**
  - Japan
  - Peoples Republic of China
  - Taiwan
  - Switzerland
  - Australia: also includes home electronics and others
  - New Zealand: also includes home electronics and others
  - Canada: also includes most other product categories
- **U.S. Government has a formal agreement with the European Union on ENERGY STAR for office equipment**



# International Harmonization



- **Policymakers and manufacturers both benefit by leveraging limited resources and sharing valuable knowledge**
- **Cooperation can lead to uniform internationally recognized test procedure and potentially uniform specification for globally-traded products**
  - **Minimizes manufacturers' cost of participation and compliance**
  - **Ensures comparability of efficiency claims worldwide**
- **Government coordination facilitates specification levels based on a global data set**



# Thank you



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