



How ENERGY STAR Assists Energy Efficiency Program Administrators

U.S. Environmental Protection Agency

ENERGY STAR Overview



- Voluntary, public-private partnership
- Recognized, trusted symbol
- Third-party credibility of EPA and DOE
- Program Goals:
 - Reduce energy use
 - Reduce greenhouse gas emissions
- Vast network of Partners (more than 12,000)
- Large energy savings (as of 2006):
 - 170 billion kWh (or almost 5% of total electricity use)
 - 35,000 MW of peak power
- On track to double in 10 yrs

Why ENERGY STAR Works



- Many existing cost-effective opportunities to save money with efficiency
- Program designed to overcome market barriers by providing information and tools that alter decision-making for the long term
- Credible, objective information, upon which businesses and homeowners can make informed decisions that are in their interest
- Reduces transaction costs and lowers investment risks to make projects attractive

Why Energy Efficiency Program Administrators Participate



- Customer satisfaction/business image *(79% prefer a utility that offers energy efficiency services over a utility that only provides electricity) (1)*
- Systems benefit/public goods or PUC mandates
- Decrease the time and expense and increase efficacy of energy efficiency programs
- Develop strategic alliances
- Contribute to a greater good

EE Program Administrator Role



- Partner with EPA and DOE
 - Through signed partnership agreement
 - Join network of organizations leveraging and agreeing to protect ENERGY STAR
- Raise customer awareness of the benefits of ENERGY STAR qualified products, homes, buildings and building improvements
- Link incentives to ENERGY STAR performance levels
- Engage local partners in cooperatively promoting ENERGY STAR actions
- Meet state/local mandates for reducing energy use and air pollution

Partnership Requirements

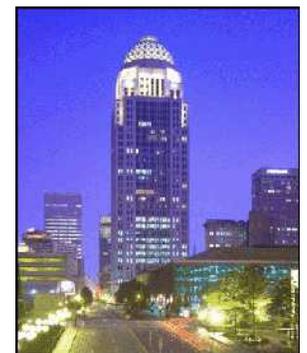


- Properly use the ENERGY STAR name and logos
- Commit to promote ENERGY STAR to customers in one or more areas: Products, Homes, Home Performance, Whole Buildings
- Submit an action plan letting us know the basics of each program area
- Additional partnership agreement/requirements for Home Performance with ENERGY STAR

Portfolio of Strategic Investments



- Define, educate, and promote on cost-effective energy/environmental savings through single designation: ENERGY STAR
- Residential initiatives
 - Efficient products
 - Efficient new homes
 - Existing home efficiency improvements
 - Affordable housing
- Commercial initiatives
 - Efficient products
 - Existing building efficiency improvement
 - Efficient new construction
- Industrial initiatives





Residential Initiatives

- Products for the Home
- New Home Construction
- Existing Home Improvement
- Affordable Housing



Products for the Home

Product Labeling



- Currently label more than 50 product categories that range from 10-90% more efficient than standard counterparts
- Work in an open/transparent specification development process with manufacturers, utilities, trade associations, NGOs and others to negotiate specifications
- Weigh multiple factors in developing/revising specifications:
 - Can significant energy savings be realized nationally
 - Can product performance be maintained or enhanced
 - Will purchaser recoup additional investment in reasonable period
 - Can efficiency be achieved with several technology options (nonproprietary)
 - Can energy performance be measured and verified
 - Will labeling differentiate and be visible to purchasers

Residential Products



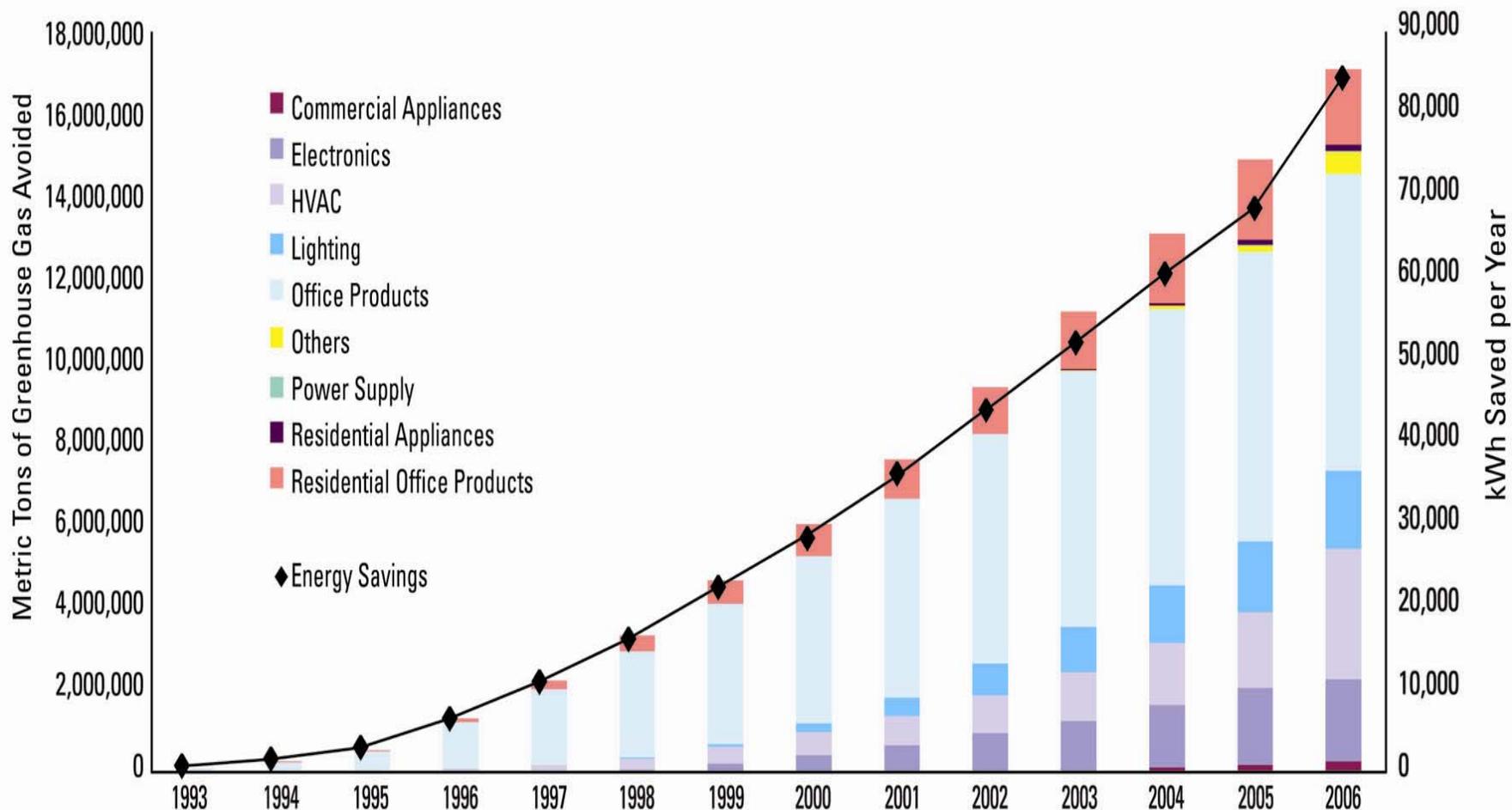
EPA managed products	DOE managed products
Appliances: <ul style="list-style-type: none"> • Dehumidifiers • Air Cleaners • Water Coolers 	Appliances: <ul style="list-style-type: none"> • Refrigerators/Freezers • Dishwashers • Room Air conditioners • Clothes Washers
Lighting: <ul style="list-style-type: none"> • Residential Light Fixtures • Decorative light strings 	Lighting: <ul style="list-style-type: none"> • CFLs
<ul style="list-style-type: none"> • Insulation & Roof products 	<ul style="list-style-type: none"> • Windows/doors/skylights
<ul style="list-style-type: none"> • Heating and Cooling 	
<ul style="list-style-type: none"> • Home Electronics 	
<ul style="list-style-type: none"> • Office Equipment 	
<ul style="list-style-type: none"> • Commercial Food Service 	
<ul style="list-style-type: none"> • Other Commercial Products 	

Market snapshot



Category	E* savings vs. standard new (2007)	Marketshare (est. 2007)
Home Office Products	6-60%	30-75%
Home Electronics	28-89%	0-61%
Appliances	10-73%	13-46%
HVAC	6-30%	2-71%
Res. Lighting	75%	4-20%

Key Results:



Due to qualified products managed by EPA

Government Offers



- **Performance specifications**
 - Offering 10-90% energy savings over typically purchased products
 - Offering 30% energy savings per home across suite of products
 - Offering significant energy savings to business
- **Consumer-oriented resources**
 - National and product specific education/promotions to engage national manufacturers and retailers
 - Marketing templates
 - Training center for sales associates and others
 - Consumer tips and education tools
 - Consumer assistance tools including special deals finder, store locator, qualifying product lists
- **Partner assistance**
 - Networking and matchmaking
 - Program best practices and peer exchange
 - Evaluation assistance --- sales data for some product categories

Program Sponsors are Pursuing



- Consumer education on the full suite of ENERGY STAR products (and related energy savings tips)
- Programs/incentives related to CFLs and fixtures/ceiling fans w/lights
- Refrigerator retirement and replacement with ENERGY STAR for some subsectors (e.g., lower income multifamily).
- Retirement and recycling of second refrigerator more broadly
- Programs/incentives for clothes washers in some jurisdictions, particularly if water benefits can be accounted for in cost effectiveness tests
- Promotion of HVAC – coupled with quality installation and sizing (more later)



New Home Construction

ENERGY STAR Homes



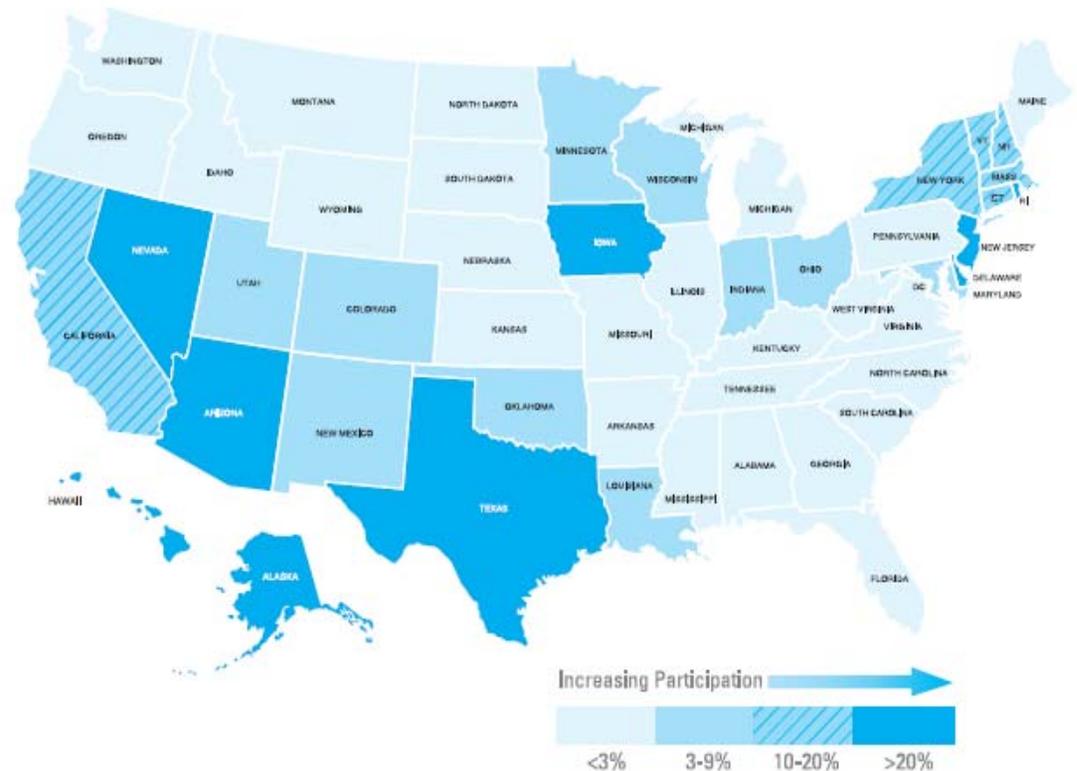
- An ENERGY STAR home requires a score of 80 or 85 or more plus prescriptive requirements that tighten the envelope. This generally leads to a 20-30% energy savings on heating, cooling and water heating
 - Pilot Program for Multi-Family High-Rise with specs that require 20% better than ASHRAE 90.1
- EPA partners with utilities, homebuilders, and Home Energy Raters to promote energy-efficient technologies and building practices.
- Home builders construct homes to the ENERGY STAR specifications
- Third party, Home Energy Raters verify that homes meet the ENERGY STAR guidelines.
- The ENERGY STAR label makes it easy for homebuyers to select energy-efficient homes.



Key Results



- Savings per home typically 20-30% more efficient than standard homes
- About 850,000 homes built
- About 130,000 ENERGY STAR new homes in 2007 – 10% market penetration
- Many markets with more than 20% market penetration



Government Offers



- Performance Specifications
 - Offering 20-30% energy savings on heating, cooling and water heating
- Consumer and builder oriented resources
 - Marketing toolkit for builders
 - ENERGY STAR Outreach Campaign
 - Brochures and fact sheets
 - Builder recognition
- Partner Assistance
 - New Sponsor and Utility Guide on Best Practices
 - Annual utility and Sponsor Meeting
 - Trainings and Presentations to builders
 - Technical assistance

Program Sponsors Are Pursuing



Full-scale ENERGY STAR New Homes programs with program elements such as:

- Consumer outreach and education
- Builder outreach and education including sales training
- Assistance in building a network of raters if market is lacking
- Financial incentives to defray cost of rating or equipment
- Additional energy efficiency features such as ENERGY STAR Advanced Lighting Package



Existing Home Improvement

- Home Performance with ENERGY STAR
- Quality Installation of HVAC
- Education to DIY Market

Home Performance with ENERGY STAR



- Offering 20% energy savings per home on average
- Sponsored by an Energy Efficiency Program Administrator
- Specially-trained contractors, using state-of-the-art equipment, offer whole-house energy audits, recommend comprehensive improvements, and provide services to complete the improvements
- Typical improvement measures include: Air Sealing and Insulation, Duct Sealing, HVAC Replacement
- Sponsor checks participating contractors work to verify it meets high standards based on an agreed upon protocol
- Homeowner chooses and pays for improvements based on credible information.

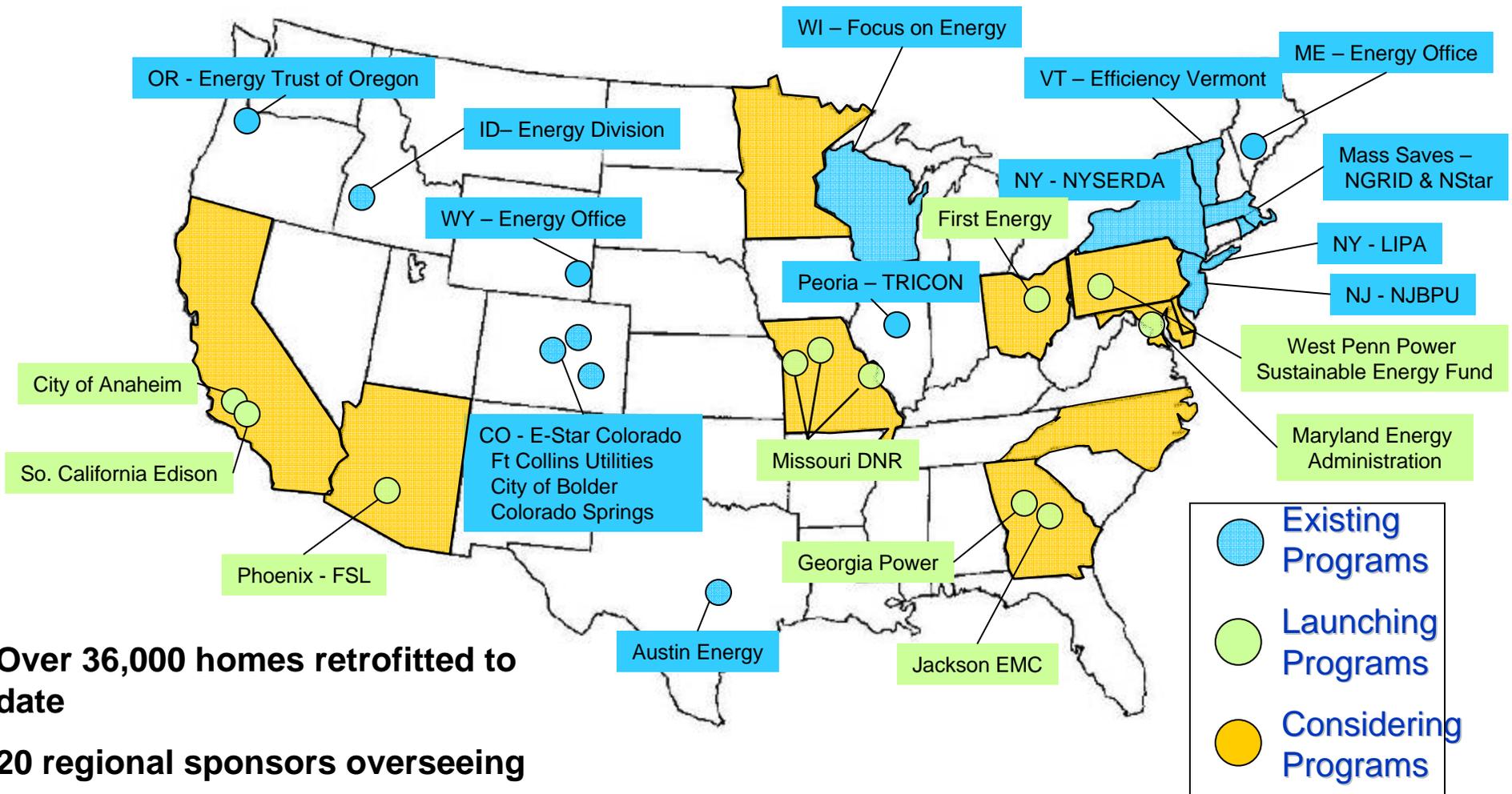
Program Requirements



Program sponsors role in helping create delivery infrastructure and ensuring quality is key:

- Facilitate connection of homeowners to qualified contractors who conduct whole-house analysis
- Facilitate installation of recommended measures
- Verify energy performance and conformance to health and safety standards
- Ensure quality through rigorous contractor training/certification and inspection oversight

Home Performance with ENERGY STAR Results



Over 36,000 homes retrofitted to date

20 regional sponsors overseeing program

Government Offers



- Consumer recognized brand
- Program start-up assistance
 - Program Development Guidance
 - Program Plan Best Practices Guide
- Business development assistance for contractors
 - Contractor Business Development Guide
 - Successful Contractor Profiles
 - Sales and Marketing Training
- Marketing materials
 - Marketing Toolkit (for both sponsors and contractors)
 - Recommendations for Planning a Home Energy Makeover Contest
 - Consumer Brochure
- www.energystar.gov/hpwessponsors

Program Sponsors are Pursuing



- Full-scale residential home improvement programs with key elements such as:
 - Consumer education and outreach
 - Home contractor technical and business training
 - Standard diagnostics
 - Home improvement measures
 - Incentives linked to completed home improvement projects
 - Verification of energy savings and quality work



HVAC Quality Installation

HVAC Quality Installation

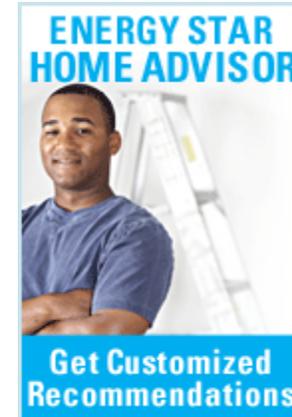


- Launching Program in 2008 at CEE – Tomorrow!
- Based on ACCA and CEE work on proper installation of HVAC equipment
- Estimated Savings: 1900 kWh/home in southern climates
- Components
 - Contractor installs system to meet proper sizing, refrigerant charge, air flow, and duct leakage specifications
 - Verification that contractor installed HVAC system properly by third party.

Homeowner Education through the web



- To educate homeowners, program administrators can:
 - Use the Home Energy Yardstick
 - Use Home Energy Advisor to get climate specific home improvement recommendations
 - Promote Seal and Insulate DIY Guide to educate customers about insulation and air-sealing





Affordable Housing

Affordable Housing Initiatives



- The ENERGY STAR New Homes Program applies to new affordable housing if it is three floors or less
 - Can make homes 20-30% more energy efficient than code
- ENERGY STAR Multi-family High-Rise can apply to taller buildings
 - Can make high rise 20% more energy efficient than a building built to ASHRAE 90.1
- Home Performance with ENERGY STAR can be used to improve existing affordable housing
 - On average can make an existing home 20% to 30% more energy efficient
- ENERGY STAR labeled products and appliances can help reduce plug load in affordable housing
 - Plug load can account for 50% of energy consumption

Government Offers



- **Tools**
 - ENERGY STAR Bulk Purchasing Tool for products
 - Savings calculators and life cycle cost models for purchasing and procurement decisions for products and homes
 - New Homes Partner Locator to find ENERGY STAR builders
 - Web-links to a comprehensive source of state, local and federal incentives that promote renewable energy and energy efficiency
 - Case studies
- **Outreach and Marketing**
 - Information on how utilities can develop an affordable housing program
 - Presentation on ENERGY STAR and Affordable Housing
 - Fact sheet on ENERGY STAR and Green Home Building
 - ENERGY STAR's Change A Light Outreach Campaign
 - List of Habitat for Humanity Chapters that build ENERGY STAR
- **Other Resources**
 - Assistance in incorporating energy efficiency into state-based low-income tax credit
 - Affordable Housing Builder Option Packages for ENERGY STAR New Homes
 - Piloting low income mortgage product.
 - Link to valuable DOE affordable housing research and HUD programs for efficiency.



Commercial Buildings

- Commercial Products
- Improving existing buildings
- New construction
- Industrial Facilities



Commercial Products

Products for Business



- Same product development process as residential products
- EPA Managed Products
 - Office equipment including copiers, fax machines, printers, scanners, computers, monitors, and multifunction devices
 - Electronics and audio products
 - Commercial appliances including vending machines, hot food holding cabinets, steamers, fryers, ice makers, dishwashers
- DOE Managed Products
 - Coin operated clothes washers

Market snapshot



Category	E* Savings vs. standard new	Marketshare (est. 2007)
Office products	16-62%	30-98%
CFS/Appliances	18-64%	12-46%

Key results



- Market transformation in office products has necessitated multiple revisions to specifications. Pursuing active (as well as sleep mode) efficiency has become standard in specification development process.
- Rapidly growing suite of CFS products allows pursuit of ENERGY STAR kitchen suite in one of the most energy intensive spaces in many buildings

Government Offers



- **Performance specifications**
 - Office equipment: New computer specification will save businesses \$670 per compute over lifetime; adding monitors savings more than double
 - CFS: Offering 6-64% over typically purchased products; full kitchen suite could save about 285 Mbtu/yr
 - Offering significant energy savings to business
- **Business-oriented resources**
 - National power management campaign
 - Tools for bulk purchasing
 - Special deals finder, store locator, qualifying product lists
 - Marketing templates
 - Training center for sales associates and others
 - Consumer assistance tools including special deals finder, store locator, qualifying product lists
- **Partner assistance**
 - Networking and matchmaking
 - Train-the-trainer opportunities for power management

Program sponsors are pursuing



- Education on the full suite of ENERGY STAR products for businesses)
- Programs/incentives related to CFS equipment
- Education and incentives related to computer/monitor power management



Existing Buildings

Existing Buildings Strategy



- Strategies to reduce building energy use by 10, 20, and 30%
- Value proposition/market segmentation
- Continuous improvement management practices
- Benchmarking
- Whole-building improvements (O&M as well as capital)
- Rebenchmarking/measuring & tracking
- Recognition

Energy Performance Rating is Key to ENERGY STAR Efforts



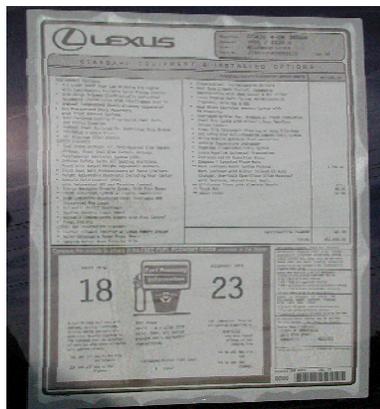
Is 10 MPG high or low for an automobile?



Is 90 kBtu/SF/YR high or low for an office building?



Fuel Efficiency
MPG



Energy Efficiency Rating
1 - 100



Eligible Space Types



Hospitals



Retail



Office Buildings



Hotels



Medical
Office Buildings



Waste Water
Treatment Plants



Courthouses



Financial Centers



Warehouses



Dormitories



Supermarkets



Schools

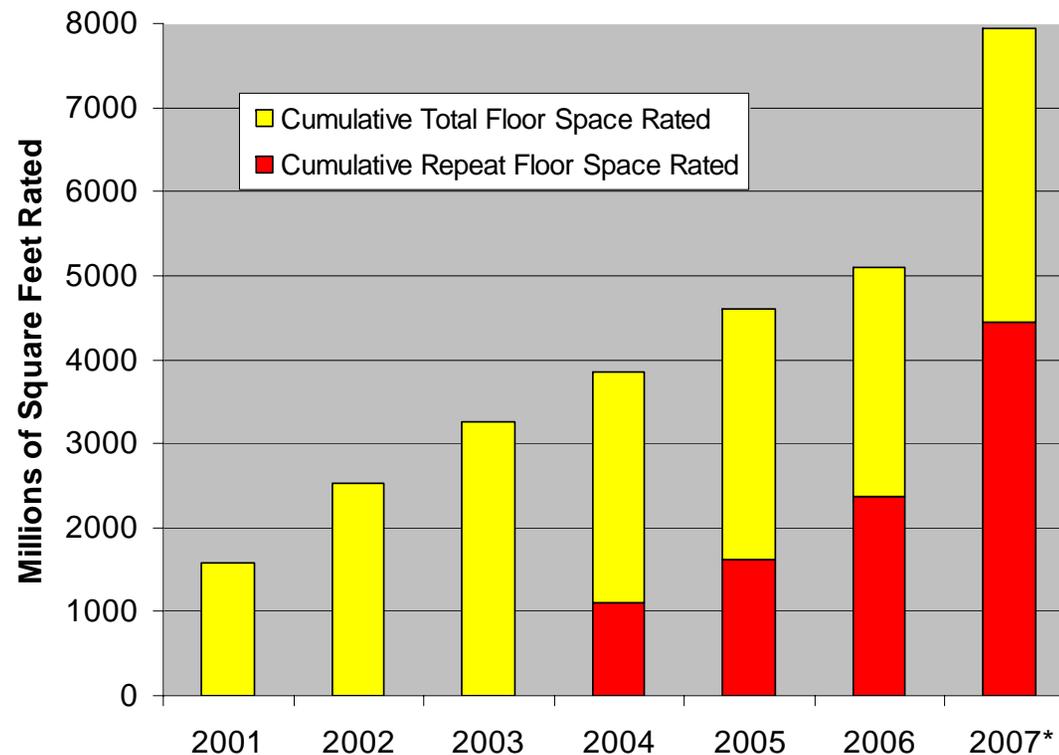


Rating Activity Gains Momentum



Trends:

- Close to 8 billion square feet rated through November 2007
- Reflects a dramatic increase over past years, including a 55% increase over 2006



Notes:

- Unless otherwise noted, all rating/labeling 2007 data is through November 30.
- New energy rules/algorithms introduced in 2004; apply to the benchmarking data for 2004 and subsequent years. All other years reflect benchmarking data under the old energy rules/algorithms.

Government Offers



- National Campaign: ENERGY STAR 10% Challenge
 - Engaging thousands of organizations
- Marketing Materials
 - By sector
- Benchmarking Training and Technical Resources
- Tools and Resources for Energy Management and Project Evaluation
- Case Studies
- Service and Product Provider Directory
- Partner Network

Program Sponsors Are Pursuing



- Aligning commercial programs with the whole-building performance model
- Leveraging ENERGY STAR partnership to engage CEOs along with facility managers in continuous energy improvement
- Promoting and facilitating benchmarking and re-benchmarking as a standard business practice
- Promoting and leveraging the 10% Challenge



New Buildings

New Construction Strategy



- ENERGY STAR provides a process to guide the design of new buildings to save 25% or more energy compared to average of existing buildings
- Facilitate designs that meets goals of key national initiatives, e.g., 2030 Challenge of 50% energy reduction from national average.
- Provide a consistent national metric for measuring energy performance
- Leverage industry associations to create incentives for achieving superior designs

Key Results



- Over 100 A/E firms are ENERGY STAR Partners
- 32 projects have received “Designed to Earn ENERGY STAR”
 - 11 projects achieved a 50% energy reduction target
- Governments incorporate Target Finder in set new goals
 - District of Columbia Green Building Act of 2006
 - Denver’s Greenprint and Executive Order 123
- Energy performance target included in USGBC LEED-NC Schools

Government Offers



- Target Finder (EPA energy performance rating system)
 - Set an annual energy target for building designs
 - Comparing energy use from simulations with energy performance goals
 - Monitoring impact on performance as design is modified
- Building design guidance
- Case studies
- Recognition
 - “Designed to Earn the ENERGY STAR”

Program Sponsors are Pursuing



- Target Finder for setting performance targets to guide new construction initiatives
- Providing additional incentives for newly constructed buildings that demonstrate ENERGY STAR performance
 - Energy Trust of Oregon: ENERGY STAR track



Industrial Energy Efficiency

ENERGY STAR Industry Strategy



- Promote corporate energy management
 - Creates an organization-wide system and program for managing energy
 - Delivers sustained reductions over time and is designed for continual improvement
 - Relates itself to the core business of the company
- Thus, businesses with corporate energy management programs:
 - Realize energy and cost savings and greenhouse gas reductions

Government Offers



- Annual energy forum
- Energy Guides – “how to” for energy efficiency in a specific industry
- Plant energy performance indicators (EPI)
 - Enable higher level energy management
 - Compare how efficiently a plant uses energy relative to those of its industry nationally
 - Enable goal setting
 - Empower management to require greater energy performance from plants

Specialized Industry Focuses

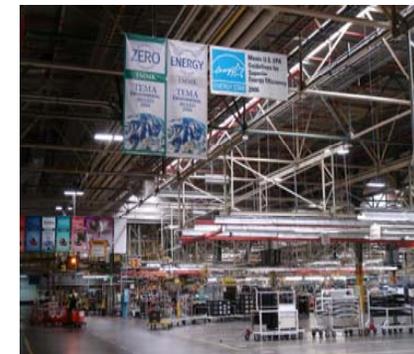
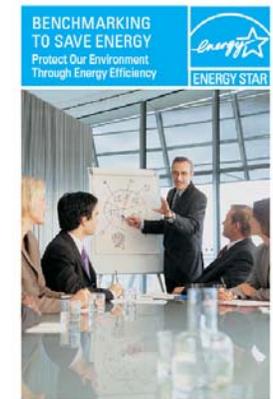


Focus Industry	Year in Progress	Peer Exchange Forum	Energy Guide	Energy Performance Indicator (EPI)
Cement	4	Annual	Complete	Complete
Corn Refining	5	Annual	Complete	Complete
Food Processing	2	Annual	Complete	Under testing
Glass	2	Annual	Complete	Under testing
Motor Vehicle	6	Annual	Complete	Complete
Petrochemicals	1	Initiated	In Process	Complete
Petroleum Refining	3	Annual	Complete	Complete
Pharmaceuticals	3	Annual	Complete	In Process
Pulp & Paper	1	Initiated	In Process	Exploring options

Other Government Offerings



- Strategic Energy Management
 - New outreach materials
 - *Teaming for Energy Management*
 - *Benchmarking to Save Energy*
- Energy Performance Indices
 - Released: Motor vehicle assembly, wet corn milling, cement, petroleum refining
 - In development: Pharmaceuticals, food processing, glass
 - 35+ industrial facilities earned the ENERGY STAR in 2007



Program Sponsors are Pursuing



- Promoting of best practices to specific industries
- Promoting corporate-wide energy management
 - Working with industries and individual manufacturers to improve strategic energy management at the **CORPORATE** level
- Promoting and facilitating benchmarking and energy performance indicators as a standard business practice
- Promoting and leveraging the 10% Challenge

This Afternoon



- Residential Initiatives
 - Efficient products (lighting, appliances, CE)
 - Home Improvement (HVAC, Quality Installation)
 - New Homes
 - Home Performance
- Commercial & Industrial Initiatives
 - Efficient products (commercial food service)
 - Market Trends (ES Challenge, Climate Change, Green Buildings, National Action Plan)
 - Next Steps (water/waste water, data centers)

EPA Energy Efficiency Program Sponsor (EEPS) Contacts



Emerging Markets/New Accounts

Maureen McNamara
(202) 343-9047
mcnamara.maureen@epa.gov

Existing Homes

Dale Hoffmeyer
(202)-343-9013
hoffmeyer.dale@epa.gov

C&I

Tracy Narel
(202) 343-9145
narel.tracy@epa.gov

New Homes

Sam Rashkin
(202) 343-9786
rashkin.sam@epa.gov

Products

Hewan Tomlinson
(202) 343-9082
tomlinson.hewan@epa.gov

Useful Web Links



www.energystar.gov

www.energystar.gov/nationalcampaigns

www.energystar.gov/training

www.energystar.gov/homeperformance

www.energystar.gov/homes

www.energystar.gov/benchmark

www.energystar.gov/newbuildingdesign

www.energystar.gov/challenge

www.energystar.gov/industry