



ENERGY STAR

ENERGY STAR: Qualified New Homes Program



How does this ENERGY STAR program meet utility goals?

Energy Savings

- ENERGY STAR qualified homes are at least 15-20% more efficient than the 2004 International Residential Code (IRC)
 - include additional energy-saving features that typically make them 20-30% more efficient than standard homes.
- ENERGY STAR for New Homes programs reduce energy demand and utility bills, while improving the comfort, quality, durability, and affordability of homes.
 - Average National savings/home: \$447
 - Average Carbon savings/home: 0.74 MTCe
 - 2,030 kWh and 131 therms with electric cooling and gas heating, or
 - 3,500 kWh with electric cooling and heating annually.
 - 1kW peak demand reduction per house.



ENERGY STAR

Program Cost-Effectiveness

- One electric utility reported a levelized cost of .06 \$/kwh
 - However, ENERGY STAR Homes delivers both electricity savings and heating fuel savings. For programs for integrated electric and gas savings, the cost effectiveness will be greater
- Over 50 regional sponsors around the country have found strong cost-effectiveness performance



How does the Program work?

- 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.

A sample of an ENERGY STAR Qualified Home label. It features the Energy Star logo and the text "AN ENERGY STAR QUALIFIED HOME". Below this, there are fields for "Address:", "Built by:", "Verified by:", and "Date:". There is also a section for "Optional information:". At the bottom, there is a small text block stating: "This home has been independently verified through an EPA-approved sampling protocol to meet ENERGY STAR's strict guidelines for energy efficiency. Each ENERGY STAR-qualified home can keep 4,000 lbs of greenhouse gases out of our air each year." and the website "www.energystar.gov".



How successful has ENERGY STAR been recently?

- By the end of 2007:
 - More than 5,000 partners—including more than half of the nation's 100 largest builders—were voluntarily constructing homes to earn the ENERGY STAR.
 - Nearly 12% of all new homes nationwide earned the ENERGY STAR (2006).
 - In 25 major metropolitan areas and states, more than 20% of new homes earned the label.
 - About 850,000 homes have earned the ENERGY STAR.



How can ENERGY STAR support utilities in sponsoring New Homes programs?

ENERGY STAR provides utilities support to implement an ENERGY STAR New Homes Program

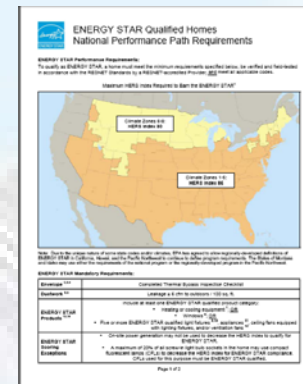
- Technical Support and Program Development Support
 - Spec definition
 - Training
 - Best Practice Guidebooks and national meetings
- Builder recruitment
 - Training and presentations for builder recruitment
- Outreach and Promotion
 - Marketing toolkit
 - Outreach Partnership Campaign
 - Brochures and fact sheets
 - Builder Recognition



How can ENERGY STAR support utilities in sponsoring New Homes programs?

Technical Support

- EPA sets technical specifications for label
- EPA provides guidance for implementing technical specifications and assists in developing regional variations.
- EPA also provides extensive guidance and training, including the Thermal Bypass Checklist Guide, through its Web site.





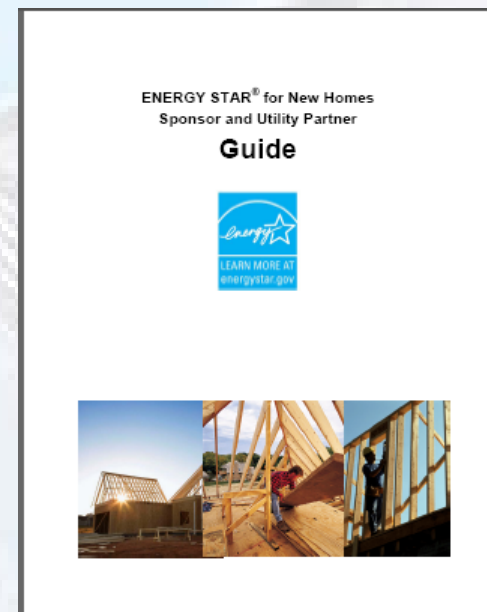
How can ENERGY STAR support utilities in sponsoring New Homes programs?

Program Development Support

- New Sponsor and Utility Partner Guide

Reference for utilities when developing new ENERGY STAR Homes programs or improving existing programs.

- Annual Utility/Sponsor Meeting

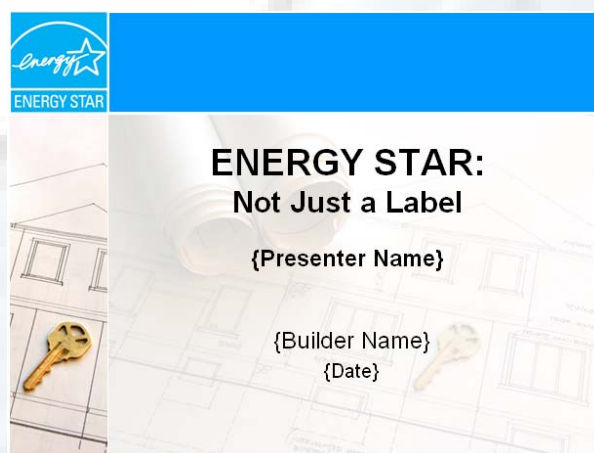




How can ENERGY STAR support utilities in sponsoring New Homes programs?

Builder Recruitment

- Utilities can use presentations developed by EPA to:
 - train homebuilder sales staff,
 - recruit new builders, and
 - educate allies in the realty and appraisal industries.





How can ENERGY STAR support utilities in sponsoring New Homes programs?

Outreach and Promotion

ENERGY STAR Marketing Toolkit

Web-based tool allows homebuilders to quickly create customized consumer materials that showcase the features and benefits of their ENERGY STAR qualified homes.

- Templates available for customization include:
 - Features Flyer
 - Checklist Flyer
 - Benefits Flyer
 - Cost Flyer
 - Lighting Flyer
 - Environmental Flyer
 - Benefits Display Card
 - Web Buttons/Banners

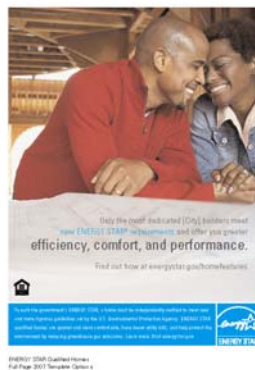




How can ENERGY STAR support utilities in sponsoring New Homes programs?

ENERGY STAR Outreach Partnership Campaign

- EPA provides cooperative advertising funds to groups of homebuilders, raters, and utilities.

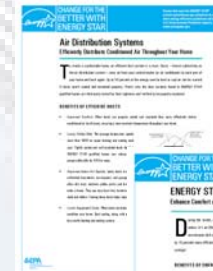




How can ENERGY STAR support utilities in sponsoring New Homes programs?

Brochures and Fact Sheets

- Utilities can download or order hardcopies of materials that explain the features and benefits of ENERGY STAR qualified homes to consumers and homebuilders.

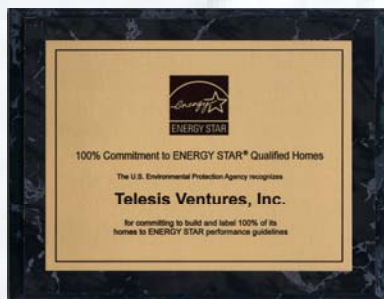




How can ENERGY STAR support utilities in sponsoring New Homes programs?

Recognition

- EPA provides partners with recognition for their participation through:
 - Awards for meeting program milestones
 - Listing on the ENERGY STAR Web site (with contact information and links to builder web sites).





How are utilities implementing ENERGY STAR homes programs?

Oncor Electric Delivery

- Co-branded marketing materials
- Sales training
- Technical training
- Realtor training
- Quality assurance
- Financial incentives
- More than 60,000 ENERGY STAR homes since 2001
- Approximately 7,000 ENERGY STAR homes in 2007
- 242 builder applications for 2008
- Over 10 MW & over 11 million kWh of annual energy savings for the utility



All the comforts of home, plus a few new ones.

The Lone Star just got some company.

Now more than ever, Texans are choosing ENERGY STAR qualified homes. That's because with tighter construction, energy-efficient heating and cooling equipment, and healthier indoor air, ENERGY STAR qualified homes help you breathe easier and stay comfortable year round. And because they're built to be more energy-efficient, they can help save you money on energy bills.

You're not alone in wanting a more comfortable home. For a complete list of homebuilders in Texas, please visit: www.TexasEnergyHomes.org.



Oncor Electric Delivery is a proud ENERGY STAR Partner.



How are utilities implementing ENERGY STAR homes programs?



Step up to Efficiency, Comfort and Quality.

Welcome home to higher quality, comfort and true efficiency. Compared to standard homes, ENERGY STAR® homes use substantially less energy, delivering hundreds of dollars in annual savings. Your family will enjoy a more quiet and comfortable home – and you'll enjoy peace of mind, knowing your new home meets strict energy efficiency guidelines. To learn more, visit georgiapower.com/energystar.



Georgia Power

- Co-branded marketing materials
- Sales training
- Technical training
- Financial incentives
- Sponsor rater certification
- ENERGY STAR statewide “Awareness Weekend”
- Pilot program 2006-2007
- Program launched in January 2008
- Goal of 10,000 ENERGY STAR homes per year by 2010



ENERGY STAR® NEW HOMES

Efficiency | Comfort | Quality

georgiapower.com/energystar





For New Homes: Advanced Lighting Package

- A valuable marketing tool to promote energy efficient residential lighting infrastructure
- A way for builders to distinguish their products
- A simple way for utilities & EEPs to incentivize efficient lighting infrastructure
- Adopted by various green building programs:
 - U.S. Green Building Council's LEED for Homes
 - National Association of Home Builders' Green Building Guidelines
 - Built Green Colorado
- Definition:
 - 60% of all hardwired fixtures, indoor and outdoor, are ENERGY STAR qualified
 - All ceiling fans installed must be ENERGY STAR qualified





For New Homes: Advanced Lighting Package

- Tools and Resources:
 - Promotional literature for builders and consumers
 - Promotional language for use in builder advertising
 - ENERGY STAR Training Center
 - ALP Energy Bill Savings Chart
 - Training sessions for:
 - Builders
 - Electrical Distributors
 - Showrooms
 - Case Studies

LEARN MORE AT
energystar.gov

ENERGY STAR®, a U.S. Environmental Protection Agency program, helps us all save money and protect our environment through energy efficient products and practices. For more information, visit www.energystar.gov.

ENERGY STAR® Advanced Lighting Package (ALP) Energy Bill Savings Chart

This table illustrates the potential annual energy bill and bulb replacement savings that could be realized by using fixtures that earned the ENERGY STAR in your home. ENERGY STAR qualified lighting provides bright, warm light similar to incandescent while requiring less energy, generating less heat, and use bulbs lasting up to 10 times longer.

Electricity price per kilowatt-hour	Fixture quantity	Total annual electricity and bulb replacement savings	Increase to home sales price	Total annual mortgage increase	Net annual electricity and bulb replacement savings	Net savings over bulb life (approximately 9 years)
\$0.10	40	\$416	\$500	\$37	\$379	\$2,961
	36	\$374	\$450	\$33	\$341	\$2,665
	32	\$333	\$400	\$30	\$303	\$2,369
	28	\$291	\$350	\$26	\$265	\$2,073
	24	\$250	\$300	\$22	\$227	\$1,777
	20	\$208	\$250	\$18	\$189	\$1,480
	16	\$166	\$200	\$15	\$152	\$1,184
	12	\$125	\$150	\$11	\$114	\$888
	8	\$83	\$100	\$7	\$76	\$592

The ALP Defined:

- * A comprehensive set of ENERGY STAR qualified light fixtures and ceiling fans.
- * Must consist of a minimum of 60% ENERGY STAR qualified hard-wired fixtures—indoor and/or outdoor.
- * All ceiling fans must be ENERGY STAR qualified.

**ENERGY STAR QUALIFIED
LIGHTING USES 75% LESS
ENERGY THAN STANDARD
LIGHTING AND LASTS UP TO
10 TIMES LONGER**



Increased Lighting Savings (California)

- **ALP can deliver significant additional energy savings!**

High Efficacy Fixtures per Single Family Home	Total # of Required Qualified Fixtures	Annual Electricity Use (kWh)	Annual Electricit y Savings (kWh)	Annual Electricity Savings (%)
T24-2005 Compliant (Baseline)	13	1642	n/a	n/a
60% ENERGY STAR Qualified Fixtures (ALP minimum)	19	1296	346	21%
75% ENERGY STAR Qualified Fixtures	24	1097	545	33%
100% ENERGY STAR Qualified Fixtures	32	655	987	60%



ENERGY STAR

ENERGY STAR:

Home Performance with ENERGY STAR

A Joint EPA and DOE Program



How does this ENERGY STAR Program meet Utilities' Goals?

Energy Savings

- Total energy saving of 20% to 30% can be achieved for heating and cooling for existing homes
- Home Performance with ENERGY STAR reduces energy demand and utility bills, while improving the comfort, quality, durability and affordability of homes

Table 1. Potential per Home Energy Savings by Climate Zone

	NORTHEAST	MIDWEST	SOUTH	WEST
Electricity (kWh)	1400	1700	4600	1400
Natural Gas (Therms)	400	400	200	200
Typical Improvements	Increasing attic insulation; insulating crawl spaces or rim joists; duct sealing, repair and insulation; air sealing; and installing programmable thermostat, energy-efficient replacement water heater, heat pump, air conditioner, furnace, boiler, lighting or windows.			

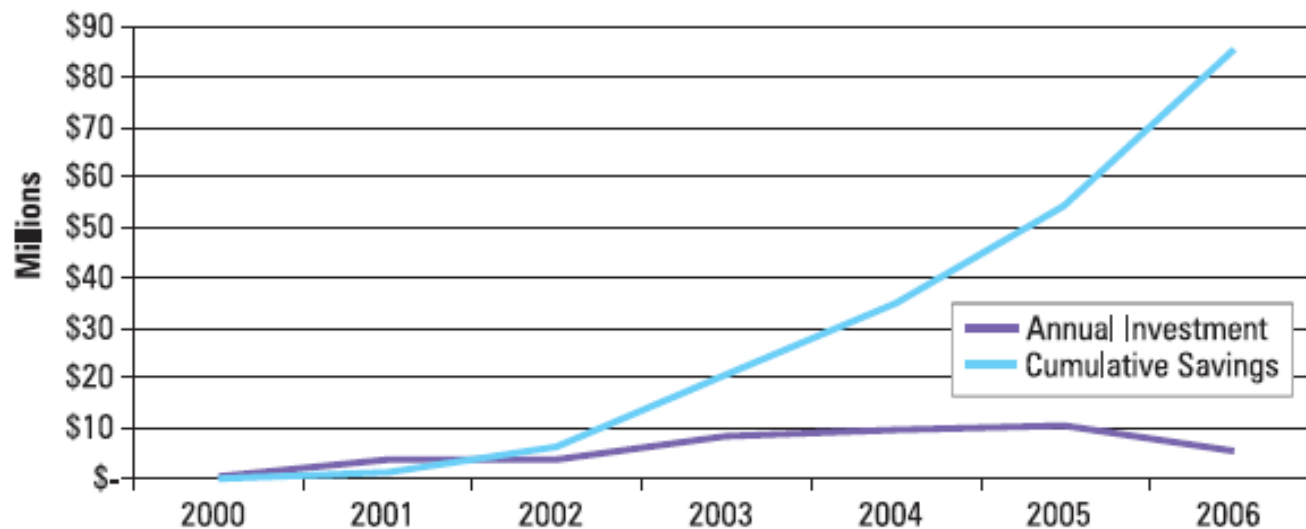
- Average national savings/home: \$400
- Average carbon savings/home: .6 MTCe
- Estimated peak electricity demand savings
 - 1.6 kW per home in summer
 - 0.9 kW per home in winter



Program Cost-effectiveness

- **Estimated levelized cost of conserved energy (CCE) of 0.05 \$/kWh***

Graph 1. New York Home Performance with ENERGY STAR Program
Investment and Customer Savings (15 yr life cycle)



*Based on information from Austin Energy



How does the Program Work ?

Home Performance with ENERGY STAR

- Encourages comprehensive home energy improvements for existing homes
- Helps capture significant savings potential of a whole-house approach
- Utility recruits contractors, helps direct marketing, and QA/QC
- Verification documents energy savings





How does the Program Work?

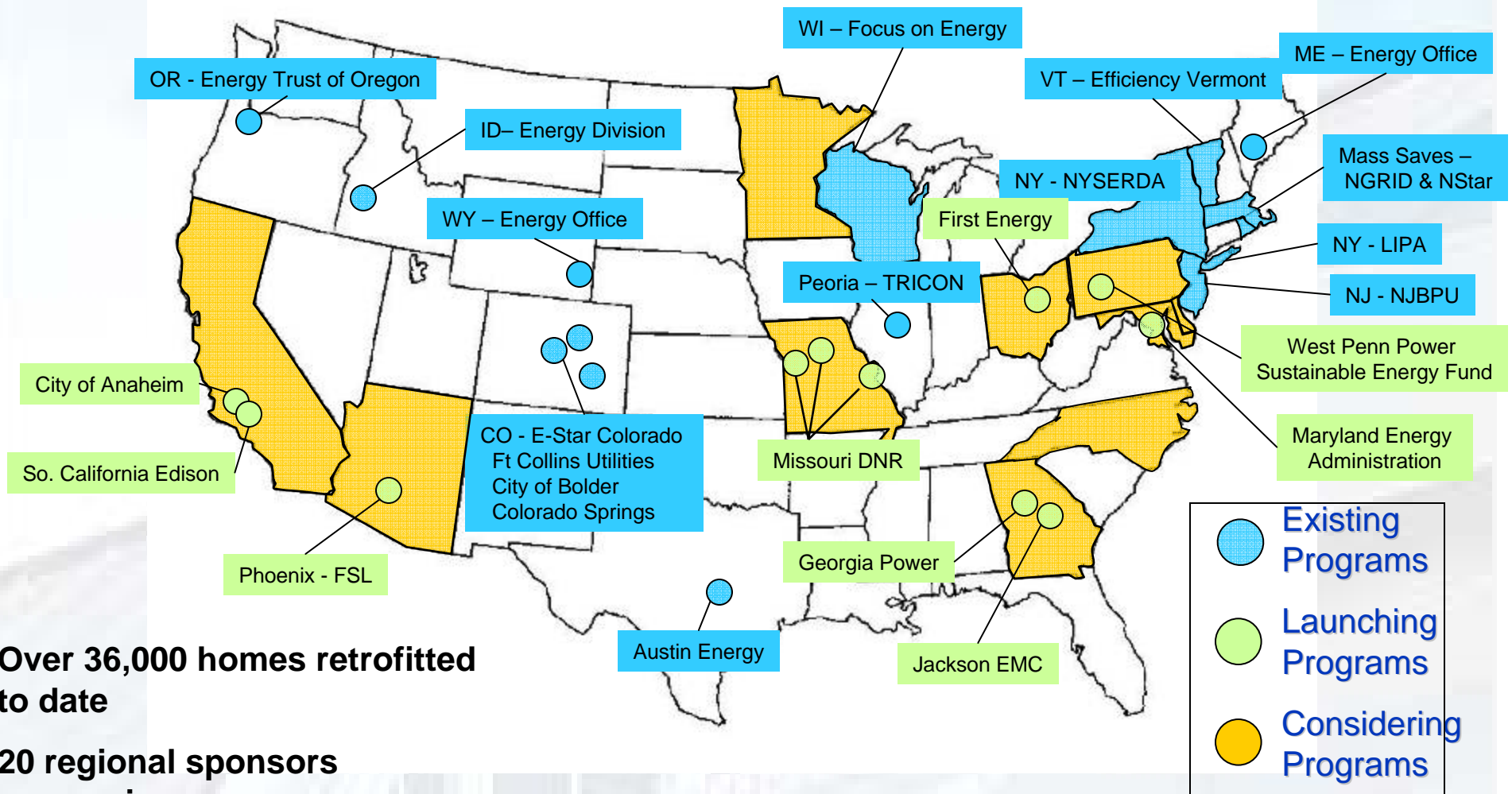
- **Whole-house energy inspection**
 - Energy specialist trained in building science
- **Diagnostic testing (before work)**
 - Can include: air infiltration, HVAC air flow, duct leakage, infrared imaging
- **Summary report**
 - Results
 - Recommendations
 - Estimated costs and savings
- **Contractor makes Improvements**
- **Test out to ensure improvements achieve savings**
- **Quality control inspections of work**





ENERGY STAR

National Activity



Over 36,000 homes retrofitted to date

20 regional sponsors overseeing program



ENERGY STAR

Recent Success

- Programs in-place or in-development in 20 markets.
 - New York State Energy Research and Development Authority

50 participating contractors helped New Yorkers invest over \$110 million to improve the energy efficiency of more than 15,000 homes and save over 16,000 Mwh of electricity and over 600,000 MMbtu of fossil fuels. As of 2005, the on-Peak Coincident Demand Reduction attributed to the program was 1.7 MW.
 - Wisconsin - Focus on Energy

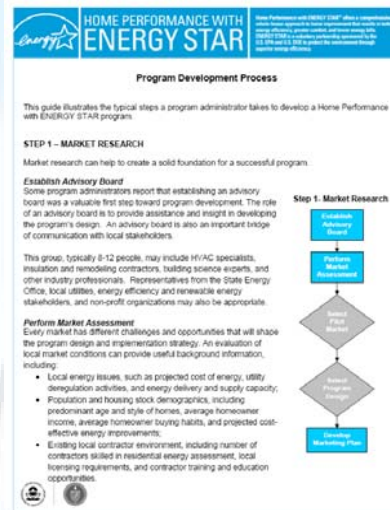
Saving on average 1,100 kWh of electricity and 500 therms of natural gas per home.
 - Austin Energy

Over 70 participating contractors completed 1400 projects in 2005 with a peak demand savings of over 3000 kW.



How can ENERGY STAR support Utilities in Sponsoring HPwES?

- Program Start-up Guides
 - Program Development Fact Sheets
 - Program Plan Best Practices Guide
 - Contractor Business Development Guide
 - Successful Contractor Profiles
 - Quality Assurance Guides
 - Finance Start-up Guide
 - Annual Symposium for Partners at ACI Conference



Home Performance Special Issue 2006

So You Want to Be a Home Performance Contractor...



How can ENERGY STAR support Utilities in Sponsoring HPwES?

Outreach and Promotion

- Web-based Consumer tools for to generate interest in whole house improvements
 - ENERGY STAR Yardstick
 - Based on energy bills, ranks the home based on energy use
 - ENERGY STAR Home Advisor
 - Provides homeowners with recommendations for improvements
- Tools can be framed on utilities' web-page

ENERGY STAR Home Advisor

Enter Basic Information About Your Home | Get Recommendations from ENERGY STAR | Learn More

Potential Total Energy Savings for Homes in your Area: 24% *

Seal air leaks in your home

Reducing air infiltration (the amount of air leaking in and out of your home through cracks in walls, windows and doors) is often the most cost-effective way to improve your home's energy efficiency and comfort. Use caulk, spray foam, or weather stripping to reduce these leaks. Or, hire a professional to test and seal your home.

- Use the Do-It-Yourself Guide to ENERGY STAR Home Sealing to reduce air infiltration
- Hire a professional to seal your home to reduce air leaks and infiltration

Seal the leaks in your ductwork

Sealing and insulating ducts can improve the efficiency of your heating and cooling system by 20 percent or more. Accessible ducts, such as those in attics, basements, crawlspaces, and garages, can be sealed using a specialized sealant called duct mastic (duct tape is not recommended) available at home improvement stores. Or, consider hiring a professional to test and seal your ductwork with an aim of achieving a specific reduced leakage rate.

- Aim to seal ducts to 10% total leakage
- Insulate ducts in unconditioned spaces to R-6

Add more insulation to your home

There are several common types of insulation — fiberglass, cellulose, rigid foam board, and spray foam. When correctly installed, each type can deliver comfort and lower energy bills during the hottest and coldest times of the year. Insulation performance is measured by R-value — its ability to resist heat flow. Higher R-values mean more insulating power. The recommended insulation levels in your area are:

- R-38 for the Attic
- R-13 for the Wood Frame
- R-10 to R-13 for the Basement Wall/Crawl Space



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How can ENERGY STAR support Utilities in Sponsoring HPwES?

Partner Support

- Annual Partners Meeting and Symposium held at national ACI conference
- Financial Support for Quality Assurance Provider Network for sponsors
 - Building Performance Institute (BPI)
 - RESNET
- Federal grant support network for non-profit sponsors
- DOE supporting standards development with BPI
- Award Recognition Program for sponsors and contractors

