

Home Performance with ENERGY STAR February 20, 2007 Patricia Plympton, DOE/NREL Robert Knight, BKI Andrew Fisk, NYSERDA

WHY ENERGY STAR? IT BEGINS WITH THE ENVIRONMENT







"90% likely mankind has caused global warming" 2007 U.N. Report on Global Climate Change

Argentinean Glaciers:



Source: http://news.bbc.co.uk/1/shared/spl/hi/picture_gallery/05/sci_nat_how_the_world_is_changing/html/1.stm

American Existing Homes





- 110+ million existing homes today
- Residential energy prices increased between 1999 -2004
 - ✓ Nat gas 60%
 - ✓ Electricity –
 10%
 - ✓ Heating oil –
 77%

Opportunity with Energy in Homes

- HOME PERFORMANCE WITH ENERGY STAR
- Over 110+ million existing homes how many of them "under perform"?
- Remodeling activity continues to be one of the largest industries in America – over \$220 Billion annually
- The Perfect Storm is here: rising interest in all things "Green", increasing utility bills, indoor air quality issues, and global climate change.

What is Home Performance with ENERGY STAR?



- Home Performance with ENERGY STAR is a whole-house approach in which contractors participate and ensure quality assurance
- Quality Assurance
 - ✓ Inspection 3rd party
 - ✓ Certification/Accreditation
 - ✓ Connection to National ENERGY STAR Program

What is Home Performance Contracting?

HOME PERFORMANCE WITH ENERGY STAR

- Performing whole-house assessment of home's performance to address:
 - ✓ Comfort
 - ✓ Moisture and Durability
 - ✓ Health and Safety
 - ✓ Energy Use
- Developing comprehensive list of prioritized recommendations for the homeowner – beyond just energy audits
- Implementing home energy improvements
- Test-out to ensure combustion safety and quality work

Whole-house Approach

HOME PERFORMANCE WITH ENERGY STAR

- Complete visual and diagnostic assessment
 ✓ Energy specialist trained in building science
- Diagnostic testing
 - ✓ Air infiltration
 - ✓ Duct leakage
 - Combustion safety testing
- Summary report
 - ✓ Results
 - ✓ Recommendations
 - ✓ Estimated costs and saving
- Implement home energy improvements

Customer: Anne Rosenberg This report addresses the key recommendations for improving the comfort, safety and efficiency of your home.				Annual Cost Savings by Improvement in Recommended Packages		
Improvement Description	Non-energy benefits		Improve- nent Cost	Basic Insulation Only	Total Envelope	The Whole House Packag
Energy Star ECM Drive Furnace: Install new natural gas 80,000 Btu/hr FURNACE wit efficiency of 90.0 %.	●Increased equity. h	+	\$ 4,000			\$ 517/yr
Wall Insulation: Upgrade 1,040 square feet of existing wall to Gyp Bd 2x4 16" OC, 3.5" Cellulose, 1" Wood, R-12	Improve comfort, increase value of building.	+	\$ 1,872	\$ 509/yr	\$ 457/yr	\$ 437/yr
Add R-30 Attic Insulation: Upgrade 1,000 square feet of existing ceiling to Gyp Bd, 2x6 16" OC, 8" Blown Fiberglass, 6" Cellulose, 1 49	 Improve comfort, increase value of building. 2- 	+	\$ 1,260	\$ 144/yr	\$ 129/yr	\$ 123/yr
Deluxe Air Sealing Package: Reduce overall air leakage of heated area from 3800 CFM50 to 2000 CFM50.	Reduce drafts.	+	\$ 1,200	\$ 581/yr	\$ 522/yr	\$ 499/yr
Energy Star Windows: Install 2 double pane clear windows with wood/viny frame.	 Improve comfort (reduce drafts), increase value of building. 	+	\$ 900		\$ 40/yr	\$ 38/yr



Home Performance with ENERGY STAR Locally Sponsored Programs





HPwES Update



- Over 18 programs active or starting around the country
- At least 8 new programs in exploration phase for 2007/2008
- Over 25,000 homes have been improved average energy savings is 30%, average comfort improvement - priceless

HPwES Quality Assurance

- Essential to ensure recommendations are unbiased and installed to best practices
- Certification/Accreditation
 - ✓ Building Performance Institute (BPI)
 - Technician certification
 - Contractor accreditation
- Inspection Oversight
 - ✓ 15% sampling



Leverage the Federal Tax Credits

HOME PERFORMANCE WITH ENERGY STAR

- Homeowner Tax Credit Up to \$500
 - ✓ 10% of cost up to \$200 for Window Replacement
 - ✓ 10% of cost up to \$500 for Insulation
 - ✓ \$300 for High Efficient Central A/C and Heat Pumps
 - ✓ \$150 for High Efficient Heating Equipment
 - ✓ \$300 for Heat Pump Water Heater
- Solar Energy Systems
 - ✓ Solar Water Heating 30% of cost up to \$2,000
 - ✓ Photovoltaic Systems 30% of cost up to \$2,000
- Fuel Cells 30% of cost up to \$1,000 per kW (.5 kW min)

New opportunities for raters with HPwES

Conceptually:

- Assist remodelers in assessing homes for home energy improvements
- Once qualified by local program, act as general contractor for homeowners doing home performance projects
- Once qualified by local program or BPI, act as quality assurance provider
- Once qualified by local program, serve as Home Performance with ENERGY STAR "consultant"
- With additional BPI training and certification, perform field proctoring for BPI Building Analyst certification

Resources for Raters



- Typical resources available to raters with local sponsored programs:
 - ✓ Use of Home Performance with ENERGY STAR logo
 - ✓ Additional training in building science and health and safety
 - Certification programs available with Building Performance Institute or another similar program-sponsored certification
 - Rebates for additional diagnostic equipment (some programs)
 - Cash incentives to complete home performance testing and provide reports (some programs)
 - ✓ Marketing tool kits

More information:



- Building Performance Institute and RESNET how home energy raters fit into building performance
 ✓ Wed: 3:30pm – 5:00pm Nautilus 1, RESNET and BPI
 ✓ Steve Baden, Larry Zarker
- Patricia Plympton, DOE-NREL 202-646-5214 patricia_plympton@nrel.gov
- Chandler von Schrader, EPA 202-343-9096 vonschrader.chandler@epa.gov
- www.energystar.gov/homeperformance