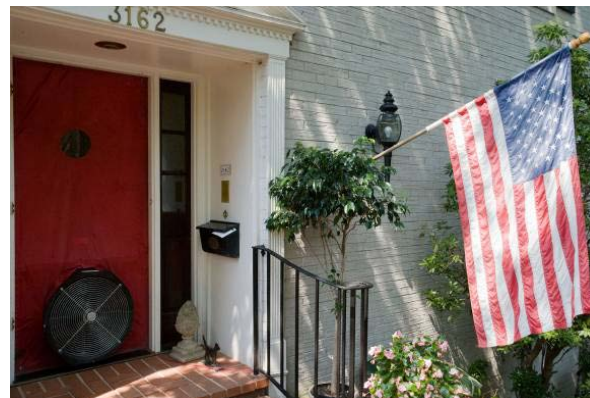


Home Performance with ENERGY STAR



*Existing Homes Efficiency – If You
Want Better Buildings – Go with HPwES*



August 5, 2010
Chandler von Schrader, EPA
Casey Murphy, ICF Int'l
Matthew Phillips, Austin Energy

Agenda



- Inside the Home of Home Performance delivery
- Connecting your program to HPwES – don't reinvent – piggyback!
- Requirements of a HPwES Sponsor & Contractor
- Take a look at Austin Energy's HPwES program
- Keeping HPwES alive post DOE funding
- Next steps and questions

Perfect Energy/Environment Storm is Brewing



- Huge national WX goals
- Infrastructure will be hard pressed
- Utilities stepping up or being pushed
- Energy costs are rising
- Climate change is here
- DOE funding stimulus
- Media is spinning green
- New generation plants tough to pass



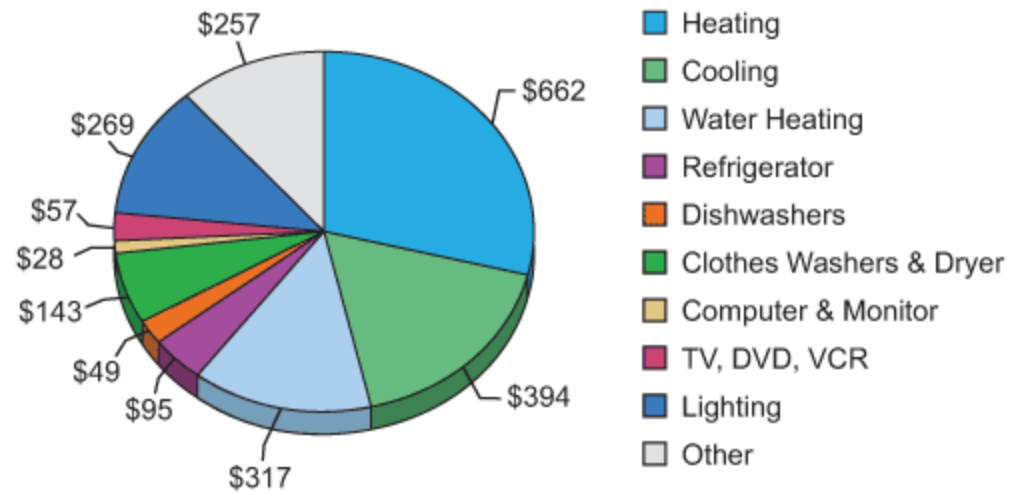


Residential Energy Use



- 114 million households¹
 - 69% built before 1980¹
 - 68% or 76 million owner occupied¹
 - 59% single-family owner occupied¹

Typical House's Annual Utility Bill



- Average energy cost \$2200/year

- Heating and Cooling almost 50%
 - 56% heat with natural gas²
 - 26% heat with electricity²
 - 64% cool with central AC²

¹2007 Building energy Data Book, DOE

²2005 RECS, Single-Family Homes Table US14, HC2.4 and HC2.6 EIA/DOE

100 Million Existing Homes Today (*And They Ain't Going Away*)



- One-third of owner-occupied homes are at least 45-years-old
- Another one-third are between 25 and 45-years-old
- **70% of the homes in 2050 are standing today**
- Majority of homes are in increasing need of remodeling and repair...AND upgrade of the home's performance.
- Opportunity rich environment - Who are they going to call?

EECBG Competitive Grants



- \$390 Million “Retrofit Ramp-Up” program
- \$64 Million for cities, counties, and Indian tribes

<http://www.eecbg.energy.gov/Downloads/EECBGCompetitiveFOA148MON.pdf>

DOE issued this FOA in conjunction with the Recovery through Retrofit Report issued by White House Middle Class Task Force and the Council on Environmental Quality. Applicants were encouraged to be aware of guidance and other information in this report.

http://www1.eere.energy.gov/wip/eecbg_grants.html

Recovery Through Retrofit Report



BARRIERS

Access to Information:

Consumers do not have access to straightforward and reliable information.

Access to Financing:

Homeowners face high upfront costs and are often unable to recoup the value of their investment.

Access to Skilled Workforce:

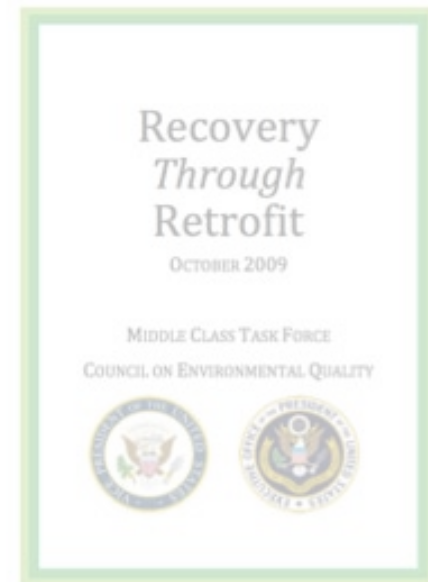
There is an insufficient amount of skilled workers to expand energy retrofit programs on a national level.

Program Elements

QA/QC

Demand

Supply



Controlling Air, Thermal and Moisture Flow are Key to Home Performance



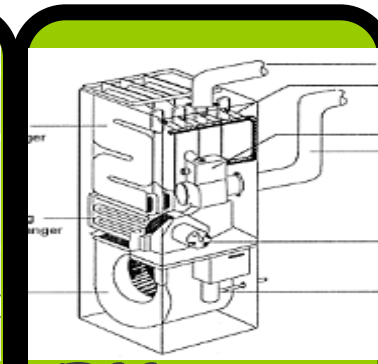
Air Sealing



Tight Ducts



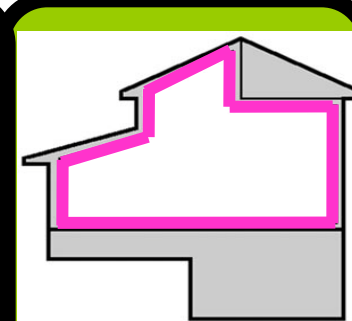
Advanced Windows



Efficient Equipment



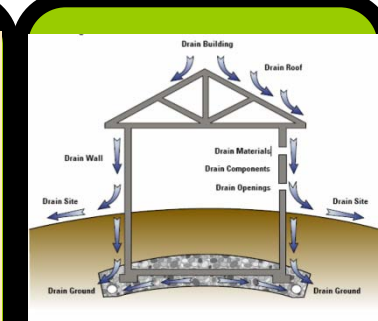
Insulation Installation



Complete Air Barrier



Right Sizing



Bulk Moisture

Can Roofers Fix This?



Energy Savings



- Whole-house energy saving of 20% and more is achievable

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.			

- Estimated peak electricity demand savings
 - 1.6 kW per home in summer
 - 0.9 kW per home in winter
- Estimated levelized cost of conserved energy (CCE) of 0.05 \$/kWh*

*Based on information from Austin Energy

Tier One – Nuts and Bolts



Program Tasks:

- Recruitment, training & certification of auditors and **installers/contractors**
- Well defined in-home process – with savings report software
- Promote through web portal and utility marketing
- Clear incentives – fee or free
- Define & deliver QA and EM&V
- Referral to HPwES program if in place

Can Insulators Fix This?



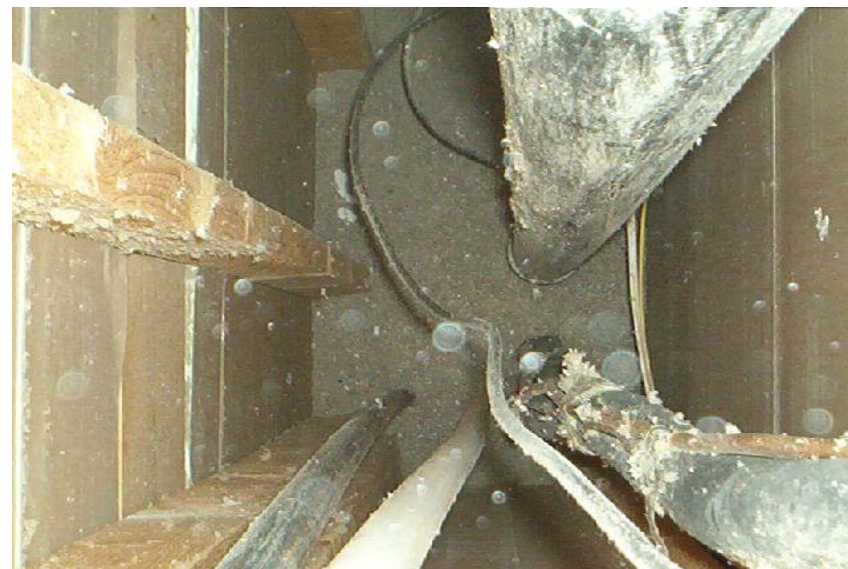


Insulators see this as Good Work





Air Sealing? Maybe....



Who Fixes This?



How Comfortable is this House?





Maybe a Comprehensive Audit?



Would a HVAC Contractor Look Here?



**Maybe a comfort
problem in the bonus
room?**



HPwES to the Rescue!



Present Results and Proposal



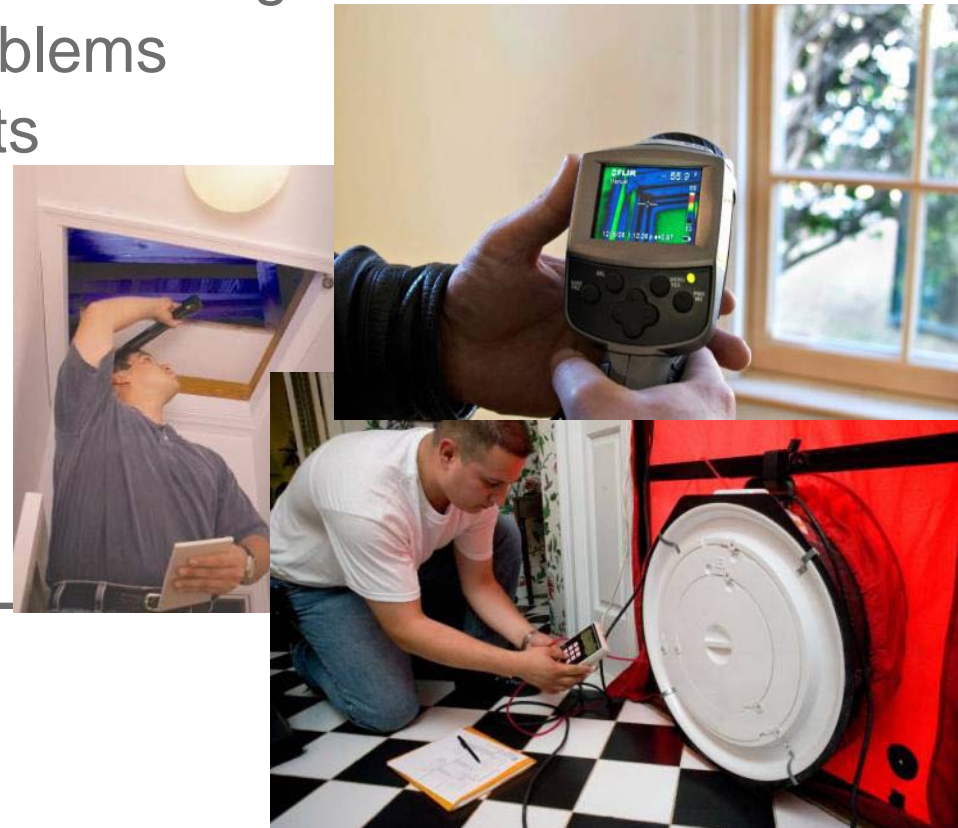
Selling is EVERYTHING!!



HPwES Comprehensive Job



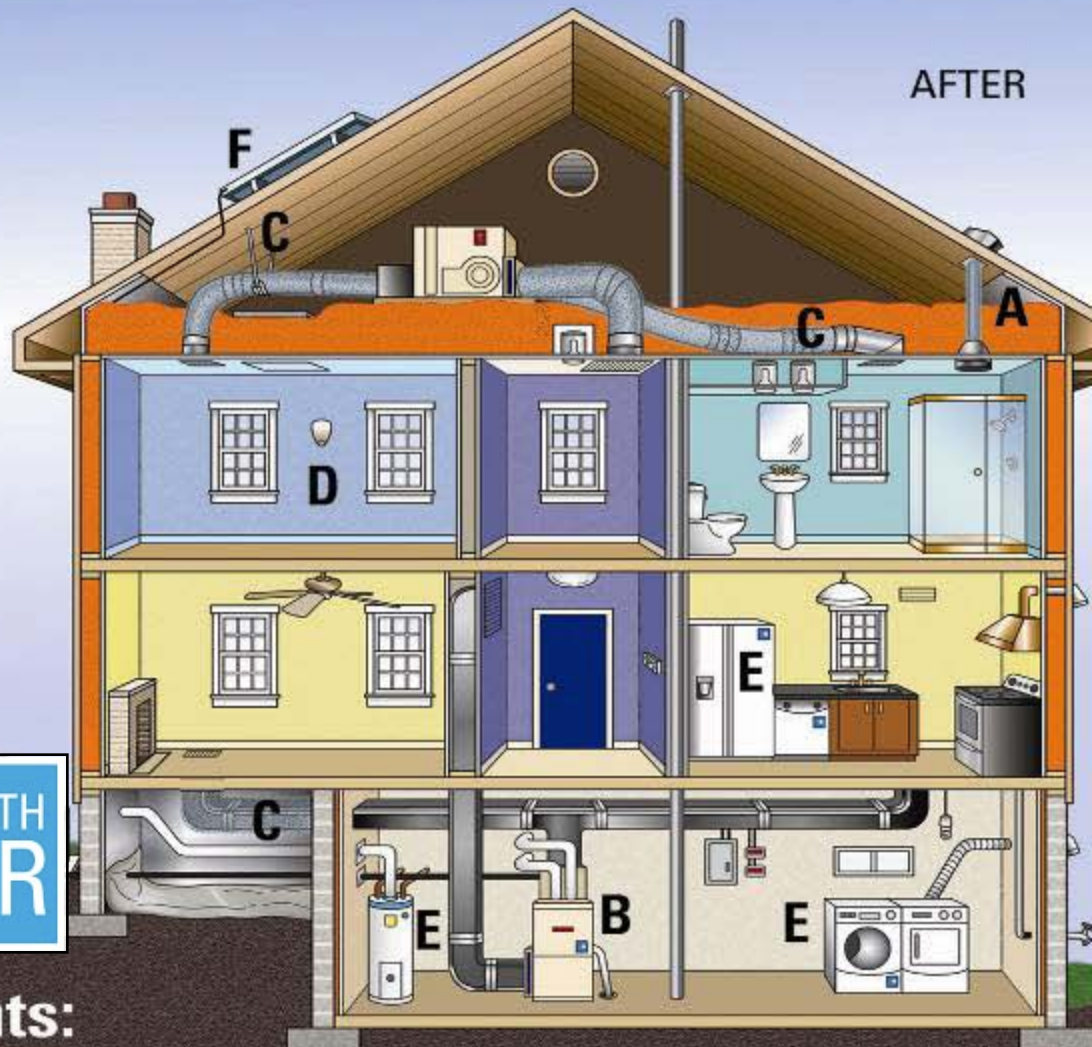
- Whole-house energy inspection
 - Energy specialist trained in building science
 - Using tools figure out problems
 - Connect performance dots
 - Summary report
 - Findings
 - Recommendations
 - Estimated costs and savings
- DO WORK – TEST OUT
- Report work!



BEFORE



AFTER



HOME PERFORMANCE WITH
ENERGY STAR

Typical Home Improvements:

- A** Sealing Air Leaks and Adding Insulation
- B** Improving Heating and Cooling Systems
- C** Sealing Ductwork

- D** Replacing Windows
- E** Upgrading Lighting, Appliances, and Water Heating Equipment
- F** Installing Renewable Energy Systems

Home Performance with ENERGY STAR



- Sponsored by a utility, state or local gov't
- A network of specialty trained contractors
 - Comprehensive audit with diagnostic tools
 - Recommend a package of improvements that typically save 20% of total energy use
 - Ready to complete work – or provide contacts
 - Homeowner chooses and pays for work
 - Post-work performance test
- Sponsored delivered quality assurance



Components for a Successful HPwES Program

- Committed & trained contractors – without this, nada
- Program marketing – using multiple channels that are sustained, must raise awareness and make phone ring
- Incentives – both big and understandable, must drive comprehensive work
- Financing – both attractive and easy, ratchet to promote comprehensive work
- Job reporting – without this, nada
- Quality Assurance – protects everyone and ES logo

Home Retrofit Program Elements



- **Goals, Budget, Stakeholders**
 - What do we want to accomplish? How will it be funded?
 - Who will lead? Who will compliment?
- **Standards**
 - Home Performance Assessment
 - Work quality
 - Test-out
- **Contractor Recruitment**
 - Who is qualified to do this work?
 - Training and certification
- **Quality Assurance**
 - How can I, in good faith, refer citizens to contractors?
 - Verifying work meets standards
- **Increasing Consumer Demand**
 - What is your message and how will homeowners hear it?
- **Financing**
 - How will homeowners afford these improvements?
- **Program Evaluation**



Sponsor Requirements



- Submit a plan (we have templates) – demonstrate capacity
 - Contractor competency / building
 - Savings estimating tools / data mgmt
 - Marketing plan / demand building
 - Budget and production goals
- Sign a Partnership Agreement
 - Agree to Reporting & QA requirements

Sponsor Must Build It



- Supply
 - Identify, recruit, train, certify, mentor participants
 - Reference training standards / define qualifications for program participation
 - Enable companies to differentiate themselves in the marketplace
 - Give them tools and resources to be profitable



Sponsor Must Build It



Arizona Home
Performance



HOME PERFORMANCE WITH
ENERGY STAR

- Demand

HOME BENEFITS HOW IT WORKS ENERGY UPGRADES FIND A CONTRACTOR SUCCESS STORIES FINANCING & REBATES

GET A REFERRAL

Sign-up for our Newsletter

Rebates for Energy Efficiency Upgrades

Home Performance with Energy Star Rebates*

Customers who sign up for a \$99 comprehensive home assessment gain access to special rebates through their Home Performance with ENERGY STAR contractor. These rebates include:

Sealing Air Leaks

- >> APS offers rebates up to \$250 for air sealing that reduces infiltration and improves insulation's performance.

Improving/Adding Insulation

- >> APS offers rebates up to \$250 to upgrade attic insulation to R-30 when the existing insulation

- Educate homeowners – about energy usage, the program, and the process – leverage ENERGY STAR brand
- Identify and overcome barriers to purchase
 - Cost of initial audit
 - Lower total costs via rebates
 - Enable homeowners to finance cost-effective solutions

QA Sponsor Rigors



- Starts with trained workforce – understands program rules of engagement via signed Participation Agreement with sponsor
 - ENERGY STAR logo use guidelines policed
- Mentor contractors early – helps all parties



Sponsor Reporting Requirements



- Quarterly reports – jobs done, site inspections
 - Key is getting right carrot for contractors to submit jobs! Make reporting easy...
- Year-end summary – will serve as application for national ENERGY STAR award recognition





Quality Assurance



- Essential to achieve program success
 - Energy savings - software
 - Credibility/reputation
- Requirements
 - Contractor participation agreement
 - 100% job reporting (electronic encouraged)
 - 100% job report review
 - 5% onsite inspection (1 in every 20 jobs)
 - Tier 1 – 3 of first 5 jobs will be inspected or mentored
 - Tier 2 – 20% of next 20 jobs inspected
 - Tier 3 – 5% of all jobs inspected
 - Customer satisfaction survey

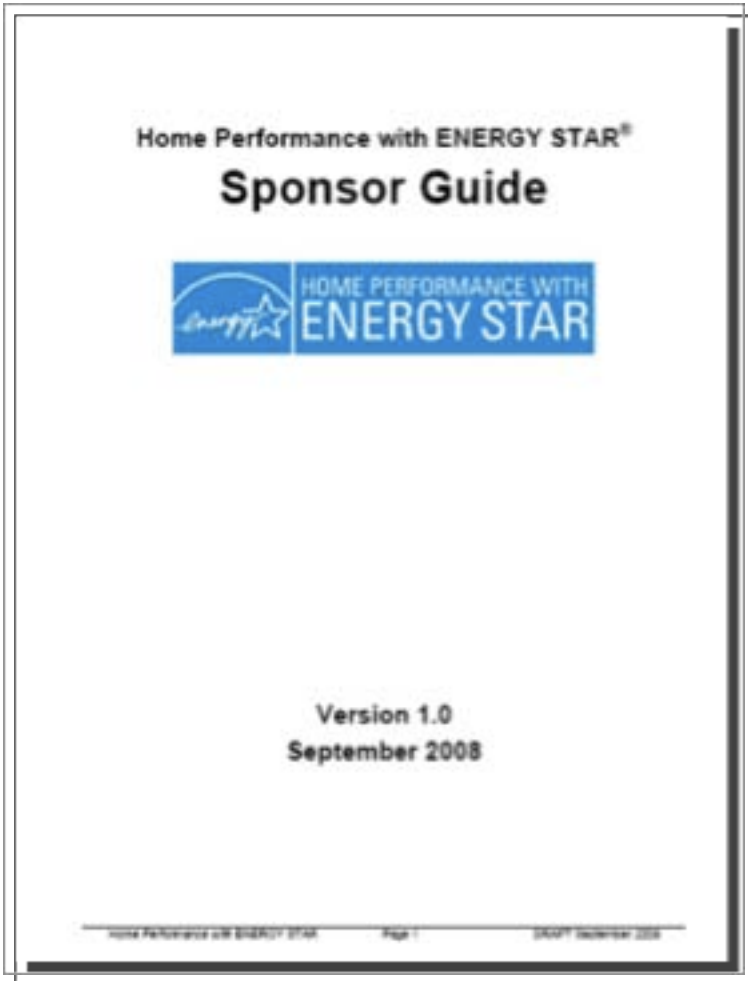


Contractor Tests After Improvements to Verify Results

- Diagnostic testing (after work)
 - i.e. Air infiltration, HVAC air flow, duct leakage, combustion safety testing
- Feedback to
 - the contractor
 - the homeowner
 - the program administrator
- Verified improvements and persistent energy savings



Planning -- We can Help



Home Performance with ENERGY STAR Program Plan Template

Use this Program Plan Template to develop an implementation plan. EPA and DOE are available to help answer questions and provide guidance. Consult our HPwES Sponsor Fact sheet and Sponsor Guide for detailed guidance. Fill out and submit your Program Plan with a signed HPwES Partnership Agreement. Please allow HPwES two weeks to review your plan. Once your plan is approved you will be listed on our website and receive an email with My Energy Star Account (MESA) instructions to access our on-line supporting material. We reserve the right to decline sponsorship if we feel there is inadequate resources and planning to initiate a HPwES program, and will retroactively advise you to what needs to be addressed.

Program Sponsor

Organization Type

State Government	City or county Government	Public Utility	Non-Profit Organization (chartered by state to implement energy efficiency programs)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Source of Funding

System Benefit Charge	Grant	Rate Recovery	Other
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Provide background information about the source

Budget Category (in \$)

	Pilot Phase*	Year 1	Year 2	Year 3	Year 4	Year 5
Management	\$	\$	\$	\$	\$	\$
Program Development	\$	\$	\$	\$	\$	\$
Contractor Recruitment	\$	\$	\$	\$	\$	\$
Training/Certification	\$	\$	\$	\$	\$	\$
Mentoring	\$	\$	\$	\$	\$	\$
Marketing	\$	\$	\$	\$	\$	\$
Contractor Job Incentives	\$	\$	\$	\$	\$	\$
Homeowner Incentives	\$	\$	\$	\$	\$	\$
Infield Inspections (CA)	\$	\$	\$	\$	\$	\$
Evaluation	\$	\$	\$	\$	\$	\$
Total	\$	\$	\$	\$	\$	\$

What goals do you plan to achieve?

Contractor Participation Goal (if contractors)						
Job Completion Goal (if of jobs)						
Electric Savings Goal (kWh)						
Peak Electric Savings Goal (kW)						
Natural Gas Savings Goal (therms)						

What metropolitan area or service territory will be served by the program?

Why did you decide to partner with ENERGY STAR to sponsor a HPwES program?

Program Elements



- Planning (goals, budget, stakeholders)
- Standards
 - Comprehensive Home Assessment
 - Work quality
 - Test-out
- Contractor Recruitment, Training & Certification
 - Who is qualified to do this work?
- Quality Assurance
 - Verifying work meets standards
- Increasing Consumer Demand
- Program Evaluation

The image shows a document titled "Program Sponsor Partnership Agreement For Home Performance with ENERGY STAR®". It includes the following sections:

- Return this form to ENERGY STAR:** HomePerformance@energystar.gov, US EPA (Mail Code 602J), 1225 Pennsylvania Ave, NW, Washington, DC 20460, FAX: 202-343-2299.
- Eligible Organizations:** Organizations that implement a residential home improvement program that meets the criteria for Home Performance with ENERGY STAR, a joint U.S. Environmental Protection Agency and U.S. Department of Energy program.
- Through this agreement, ENERGY STAR and (hereafter "the Partner") agrees to work in cooperation to promote Home Performance with ENERGY STAR under the program name _____ (hereafter "the program").**
- Organization Name:** _____ **Email:** _____
- Address:** _____ **City/State/Zip:** _____
- Telephone:** _____ **Far:** _____ **Web Site:** _____
- Major Metro Area(s) Served:** _____
- Partner Commitments**

The following are the terms of the ENERGY STAR Partnership Agreement for Home Performance with ENERGY STAR (HPwES) Program Sponsors. Guidance on this agreement is available at: www.energystar.gov/hpessponsors.

A. ENERGY STAR Brand Requirements—The partner agrees to comply with ENERGY STAR branding requirements as follows:

1. Comply with current ENERGY STAR [Identify Guidelines](http://www.energystar.gov), (available at www.energystar.gov) which describe how the ENERGY STAR mark, marketing graphics, and name may be used. The Partner is responsible for adhering to these guidelines and for ensuring that its authorized representatives, such as implementation contractors, advertising agencies, and participating contractors are also in compliance. In order for the Partner to ensure compliance, the Partner must maintain a current list of authorized representatives which ENERGY STAR may request to verify compliance.
2. The Partner is responsible for the proper use of the ENERGY STAR marks, as well as the proper use of the Home Performance with ENERGY STAR marketing graphic used by participating program contractors.
3. Feature the appropriate ENERGY STAR mark(s) on Partner's Web site and in other promotional materials. To link to the Partner on the ENERGY STAR web site, the Partner must first comply with the ENERGY STAR Web Linking Policy found on the ENERGY STAR Web site.
4. Submit all Web site designs, and marketing materials, developed for the Partner's Home Performance with ENERGY STAR promotions to ENERGY STAR (using the address listed above) for review to ensure accuracy of ENERGY STAR marks used and consistency of the ENERGY STAR messages. The Partner will allow a minimum of five full working days for ENERGY STAR to review and approve Web site designs and marketing materials.
5. Provide Home Performance with ENERGY STAR training to all employees who provide customer service. This training shall include: a) a description of Home Performance with ENERGY STAR, b) tips for answering questions about Home Performance with ENERGY STAR, and c) information on the economical and environmental benefits of energy efficiency.
6. Notify ENERGY STAR (using the address listed above) of a change in the designated responsible party or contacts for this agreement within 30 days.

EPA Form 5820-17 1 of 4 8/21/2008
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Download
Sponsor Guide and
Program Plan Template
from web site to help with planning

Funding – Beyond Grants



- Leverage short-term funding to build long-term relationships
- Establish long-term funding infrastructure

Resources

– *Advancing State Clean Energy Funds*

http://www.epa.gov/RDEE/documents/clean_energy_fund_manual.pdf

– *Who Should Pay for Raterpayer Funded Energy Efficiency Programs*

<http://www.raonline.org/Pubs/RatePayerFundedEE/RatePayerFundedEEPartI.pdf>

- Build utility connections as future funding source – demonstrate savings are real and substantial

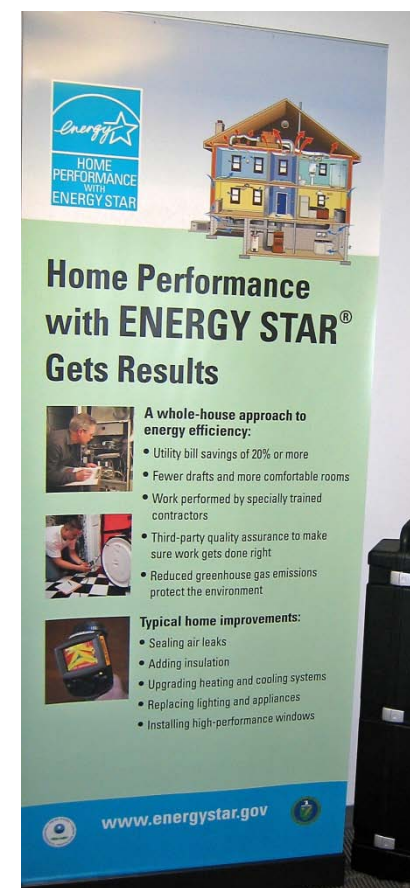
I hope they realize how important this is.



Don't "reinvent the wheel" Partner with ENERGY STAR



- Program Development
 - One-on-one Assistance
 - Sponsor Guide
 - RFP Sample Language
- Promotional Video
- Website Templates
- Consumer Brochure
- Promotional Banner Stands
- Online Marketing Toolkit
 - Advertising templates
- Contractor Business Development Guide
- Contractor Recruitment Workshops
- Contractor Sales Workshop
 - Sales Book Template
 - Bill Analysis Tool



Home Performance with ENERGY STAR: Marketing Tools for Sponsors and Contractors

EPA and DOE provide a variety of materials to help program sponsors and participating contractors educate homeowners about making their homes more energy efficient, reducing high energy bills, improving comfort, and protecting the environment through Home Performance with ENERGY STAR (HPwES). Take advantage of these available tool and resources:



HOME PERFORMANCE WITH ENERGY STAR MARKETING GRAPHIC. Use this logo in advertising, signage, and promotional materials to associate your program or services with the nationally-recognized and trusted ENERGY STAR program.



MARKETING TOOLKIT. Use this online tool to create highly-customized marketing materials that promote the value of HPwES to consumers. Available templates include print advertisements, direct mail postcards, val-pak inserts, fact sheets, yellow page ads, and web buttons and banners.



PROMOTIONAL VIDEO. Use this 7-minute video to explain the value of HPwES to homeowners. Consider showing the video on house calls, at local home shows, and on your web site.



HOME PERFORMANCE HOUSE GRAPHICS. These detailed graphics demonstrate the common problems found in many homes, and how HPwES can help to solve them.



PROMOTIONAL BANNERS. Use at trade shows, home shows, and other events. They are available for loan to sponsors and contractors; and graphics files are available to allow you to create versions with your own logo, web site, or other contact information.



BROCHURES. Provide homeowners with ENERGY STAR publications that reinforce the value of making energy-efficient home improvements, including the HPwES consumer brochure, Guide to Energy Efficient Heating & Cooling, Seal & Insulate with ENERGY STAR, Duct Sealing, and other brochures about ENERGY STAR qualified lighting, appliances, and home electronics.



HOME ENERGY YARDSTICK. Host this tool on your web site to help homeowners compare their energy use to others across the country and help decide if they should take action to improve the efficiency of their home. The Yardstick can be a powerful tool for lead generation and customer screening.

Instructions for hosting online tools are available on the ENERGY STAR Web site www.energystar.gov; and hard copies of guides and brochures can be ordered free-of-charge at www.energystar.gov/publications.

Homeowner Education Through the Web



- ENERGY STAR @ Home

Go room-by-room

www.energystar.gov/home

Can be hosted on your site



- Home Energy Advisor

Make a plan

www.energystar.gov/homeadvisor



- Home Energy Yardstick

Track your progress

www.energystar.gov/yardstick

Can be hosted on your site





ENERGY STAR Publications

Residential Resources

A Guide to Energy-Efficient Heating and Cooling

Help us change the world, with ENERGY STAR light solutions.

The cover features a large photo of a smiling family (a man, a woman, and a child) and several smaller inset photos showing children and a light bulb.

A DO-IT-YOURSELF GUIDE TO SEALING AND INSULATING WITH ENERGY STAR[®]

SEALING AIR LEAKS AND ADDING ATTIC INSULATION

The cover features a photo of a family sitting on a porch and the Energy Star logo.

Educational Resources

YOU CAN BE AN ENERGY STAR!

A Who's Guide To Saving Our Planet For Who's OF All Shapes and Sizes!

The cover features a cartoon illustration of a large grey elephant and a small blue character, with the Energy Star logo at the bottom.

www.energystar.gov/publications

Form Templates Available



Home Performance Assessment Summary Report			
Smith Home Performance Contracting 1 Address Street, City, ST 00000 • Phone: 000-000-0000 • Fax: 000-000-0000 • smithhpc@smithhpc.com			
Customer Name:	Customer Phone Number (h):		
Customer Address:	Customer Phone Number (w):		
City, State, Zip:	Customer Email:		
Inspection Date:	Home Performance Analyst:		
Your Home Performance Assessment identifies opportunities to improve the performance of your home based on our analysis. This report summarizes the findings, prioritizes recommended improvements, and helps you determine the best improvements for your home.			
Findings and Recommendations			
Priority	Findings on Existing Conditions	Recommendations for Improvements	
Air Sealing	Blower door test: _____ cfm50 Tightness std.: _____ cfm50	<input type="checkbox"/> Reduce leaks by _____ % <input type="checkbox"/> No recommendations Air seal the following leakage pathways: <input type="checkbox"/> Basement/crawl penetrations <input type="checkbox"/> Exposed sill plate <input type="checkbox"/> Attic penetrations <input type="checkbox"/> Top wall plates in attic <input type="checkbox"/> Flue/chimney penetrations <input type="checkbox"/> Open attic stairs/walls <input type="checkbox"/> Attic hatch/pulldown <input type="checkbox"/> Base and ceiling molding <input type="checkbox"/> Door and window frames <input type="checkbox"/> Around fireplace/mantle <input type="checkbox"/> Weatherstrip: <input type="checkbox"/> doors <input type="checkbox"/> windows <input type="checkbox"/> hatches <input type="checkbox"/> outlets <input type="checkbox"/> Recessed lights: <input type="checkbox"/> covers <input type="checkbox"/> inserts <input type="checkbox"/> new housings <input type="checkbox"/> Other: _____	
	<input type="checkbox"/> Basement/crawl ceiling <input type="checkbox"/> Interior baseboard/top molding/fireplaces <input type="checkbox"/> Sill plate <input type="checkbox"/> Window and door frames <input type="checkbox"/> Attic floor <input type="checkbox"/> Window and door frames <input type="checkbox"/> Attic hatch(es) <input type="checkbox"/> Band joist between floors <input type="checkbox"/> Recessed lights <input type="checkbox"/> Major air leakage bypass(es): <input type="checkbox"/> Other: _____	<input type="checkbox"/> Duct sealing _____ hours <input type="checkbox"/> Air flow balancing <input type="checkbox"/> Include duct blaster test for leakage to outside <input type="checkbox"/> Repair or reconnect ducts <input type="checkbox"/> Add return(s) <input type="checkbox"/> Replace approx. _____ % of duct system <input type="checkbox"/> Duct cleaning <input type="checkbox"/> No recommendations	
Duct Sealing	Duct leakage observed at:	<input type="checkbox"/> No ducts in unconditioned space <input type="checkbox"/> Duct disconnects/failures at: _____	
	<input type="checkbox"/> Main trunk connections OR <input type="checkbox"/> No ducts in unconditioned space <input type="checkbox"/> Branch line connections <input type="checkbox"/> Duct disconnects/failures at: _____ <input type="checkbox"/> Accessible register connections <input type="checkbox"/> Unable to visually diagnose duct work	<input type="checkbox"/> Duct sealing _____ hours <input type="checkbox"/> Air flow balancing <input type="checkbox"/> Include duct blaster test for leakage to outside <input type="checkbox"/> Repair or reconnect ducts <input type="checkbox"/> Add return(s) <input type="checkbox"/> Replace approx. _____ % of duct system <input type="checkbox"/> Duct cleaning <input type="checkbox"/> No recommendations	
Insulation Levels	R-Value/Inches Insulation	<input type="checkbox"/> Walls R-Value/Inches Insul. _____ <input type="checkbox"/> Attic (flat) _____ <input type="checkbox"/> Attic (slope) _____ <input type="checkbox"/> Knee/wall(s) _____ <input type="checkbox"/> Floor over uncond. _____ <input type="checkbox"/> Rim/joists _____ <input type="checkbox"/> Crawl walls _____ <input type="checkbox"/> Basement walls _____ <input type="checkbox"/> Ductwork (uncond. space) _____	<input type="checkbox"/> Insulate in the following locations: R-Value/Inches Insul. _____ <input type="checkbox"/> Walls _____ <input type="checkbox"/> Attic (flat) _____ <input type="checkbox"/> Attic (slope) _____ <input type="checkbox"/> Knee/wall _____ <input type="checkbox"/> Floor _____ <input type="checkbox"/> Rim/joist _____ <input type="checkbox"/> Foundation walls _____ <input type="checkbox"/> Ductwork _____ <input type="checkbox"/> No recommendations
	<input type="checkbox"/> Single pane windows Condition: <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/> Double pane windows Condition: <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/> Double pane low-e Condition: <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/> Storm windows Condition: <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/> Doors Condition: <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor	<input type="checkbox"/> Replace windows with a u-value of _____ and solar gain is _____ <input type="checkbox"/> Replace _____ door(s) w/ _____ <input type="checkbox"/> Solar screens <input type="checkbox"/> Other: _____ <input type="checkbox"/> No recommendations	
Mechanical Equip. Evaluation	Main heating system is a _____ and age _____	<input type="checkbox"/> Replace main heating system with new _____ with _____ rated efficiency <input type="checkbox"/> Replace 2nd heating system with new _____ with _____ rated efficiency <input type="checkbox"/> Fix/replace condensate line <input type="checkbox"/> Remove 2nd heating system <input type="checkbox"/> Install prog. thermostat <input type="checkbox"/> Replace filter(s) <input type="checkbox"/> Fix/replace condensate line <input type="checkbox"/> Other: _____ <input type="checkbox"/> No recommendations	
	System efficiency is _____ and age _____ Condition: <input type="checkbox"/> Good <input type="checkbox"/> Service <input type="checkbox"/> Replace Prog. thermostat <input type="checkbox"/> Yes <input type="checkbox"/> No # of thermostats: _____ 2nd heating system is a _____ and age _____ System efficiency is _____ and age _____ Condition: <input type="checkbox"/> Good <input type="checkbox"/> Service <input type="checkbox"/> Replace Prog. thermostat <input type="checkbox"/> Yes <input type="checkbox"/> No Filter condition: _____ Filter size: _____ Qty: _____ Condensate line: _____ Blocks: <input type="checkbox"/> Yes <input type="checkbox"/> No Leaks: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Other: _____	<input type="checkbox"/> Replace main cooling system with _____ SEER system <input type="checkbox"/> Replace 2nd cooling system with _____ SEER system <input type="checkbox"/> Clean/adjust blower <input type="checkbox"/> Check and adjust charge <input type="checkbox"/> Clean coils inside/outside <input type="checkbox"/> Check and adjust airflow <input type="checkbox"/> Fix/replace condensate line <input type="checkbox"/> Clean/adjust blower <input type="checkbox"/> Check and adjust charge <input type="checkbox"/> Clean coils <input type="checkbox"/> Check and adjust airflow <input type="checkbox"/> No recommendations	

Findings and Recommendations (cont.)		
Priority	Findings on Existing Conditions	Recommendations for Improvements
Mechanical Equip. Evaluation (cont.)	Main cooling system is: <input type="checkbox"/> Central <input type="checkbox"/> Room <input type="checkbox"/> Heat pump System efficiency is _____ and age _____ Condition: <input type="checkbox"/> Good <input type="checkbox"/> Service needed 2nd cooling system is: <input type="checkbox"/> Central <input type="checkbox"/> Room <input type="checkbox"/> Heat pump System efficiency is _____ and age _____ Condition: <input type="checkbox"/> Good <input type="checkbox"/> Service needed Air handler location: _____	<input type="checkbox"/> Replace main cooling system with _____ SEER system <input type="checkbox"/> Replace 2nd cooling system with _____ SEER system <input type="checkbox"/> Clean/adjust blower <input type="checkbox"/> Check and adjust charge <input type="checkbox"/> Clean coils inside/outside <input type="checkbox"/> Check and adjust airflow <input type="checkbox"/> Fix/replace condensate line <input type="checkbox"/> Clean/adjust blower <input type="checkbox"/> Check and adjust charge <input type="checkbox"/> Clean coils <input type="checkbox"/> Check and adjust airflow <input type="checkbox"/> No recommendations
	Water heating system is a _____ and age _____ Estimated system efficiency is _____ or age _____ Condition: <input type="checkbox"/> Good <input type="checkbox"/> Replace Temperature Setting: _____ Size: _____ Gallons Low flow showerheads: <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Replace water heating system with new _____ with _____ rated efficiency <input type="checkbox"/> Install solar hot water <input type="checkbox"/> Pipe insulation <input type="checkbox"/> Install low flow showerhead <input type="checkbox"/> Insulation jacket <input type="checkbox"/> Other: _____ <input type="checkbox"/> No recommendations
Appliances and Lighting	Refrigerator Age: _____ <input type="checkbox"/> ENERGY STAR Dishwasher Age: _____ <input type="checkbox"/> ENERGY STAR Clothes washer Age: _____ <input type="checkbox"/> ENERGY STAR Dryer Age: _____ <input type="checkbox"/> ENERGY STAR Other: _____ <input type="checkbox"/> ENERGY STAR High-use lighting _____ % CFL bulbs All lighting _____ % CFL bulbs Renewable opportunities: _____	<input type="checkbox"/> Replace with ENERGY STAR refrigerator <input type="checkbox"/> Replace with ENERGY STAR dishwasher <input type="checkbox"/> Replace with ENERGY STAR clothes washer <input type="checkbox"/> Replace with dryer <input type="checkbox"/> Install _____ ENERGY STAR CFL bulbs in high-use fixtures <input type="checkbox"/> Purchase ENERGY STAR CFLs when replacing bulbs <input type="checkbox"/> Install renewables: _____
	Heating System Water Heater CO tests <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> Pass <input type="checkbox"/> Fail Draft tests <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> Pass <input type="checkbox"/> Fail Spillage tests <input type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> Pass <input type="checkbox"/> Fail Ambient CO in living space <input type="checkbox"/> Pass <input type="checkbox"/> Fail Ambient CO in CAZ <input type="checkbox"/> Pass <input type="checkbox"/> Fail Oven CO test <input type="checkbox"/> Pass <input type="checkbox"/> Fail Gas or oil leaks detected <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> CO Monitor Locations: _____ <input type="checkbox"/> Yes <input type="checkbox"/> No Htg/DHW sys venting issues <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Smoke Detector Description: _____ <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Inoperable	<input type="checkbox"/> We strongly recommend the following course of action(s): _____ <input type="checkbox"/> No recommendations <input type="checkbox"/> Other: _____ <input type="checkbox"/> Fix fuel leaks at: _____ <input type="checkbox"/> Fix venting issues at: _____
Locations with Signs of Moisture or Durability Issues	Locations with signs of moisture or durability issues: <input type="checkbox"/> Windows <input type="checkbox"/> Crawl/Basement <input type="checkbox"/> Attic <input type="checkbox"/> Walls <input type="checkbox"/> Roof <input type="checkbox"/> Soffits <input type="checkbox"/> Other: _____ <input type="checkbox"/> Sill plate <input type="checkbox"/> Interior: _____ <input type="checkbox"/> Other: _____	<input type="checkbox"/> Add attic ventilation <input type="checkbox"/> Replace/fix roof <input type="checkbox"/> Re-grade around foundation <input type="checkbox"/> Add gutters <input type="checkbox"/> Install sump pump <input type="checkbox"/> Extend downspouts <input type="checkbox"/> Other: _____
	Improperly vented, non-operable, or needs ventilation: <input type="checkbox"/> Master bath <input type="checkbox"/> 3rd bath <input type="checkbox"/> Dryer <input type="checkbox"/> Whole-house <input type="checkbox"/> 2nd bath <input type="checkbox"/> Range hood <input type="checkbox"/> Crawlspace <input type="checkbox"/> Other: _____	<input type="checkbox"/> Replace/install exhaust fan <input type="checkbox"/> Install dehumidifier <input type="checkbox"/> Add humidistat/timer <input type="checkbox"/> Other: _____
Recommended Measures Summary		
Estimated Annual kWh Savings _____ Estimated Annual Therm Savings _____ Estimated Annual Storage Fuel Savings _____ Estimated Total Annual Energy Cost Savings _____ Estimated Package of Improvements Installed Cost _____ Monthly Payment at _____ % _____ Yr. Term _____ Simple Payback (Installed Cost + Annual Savings) _____	Non-Energy Benefits: <input type="checkbox"/> Reduced drafts <input type="checkbox"/> Reduced maintenance <input type="checkbox"/> Improved comfort <input type="checkbox"/> Improved indoor air <input type="checkbox"/> Increased durability <input type="checkbox"/> Reduced dust <input type="checkbox"/> Increased home value <input type="checkbox"/> Reduced odors <input type="checkbox"/> Reduced moisture issues <input type="checkbox"/> Environmental	
I understand that the above recommendations do not constitute a binding contract proposal. I am interested in receiving such a proposal as a next step. Customer Signature: _____ Date: _____		



Increasing Consumer Demand



- Marketing
 - Website
 - Consumer education
 - Advertising
 - Grass-roots campaigns
- Public Relations
- Incentives

The screenshot shows the top portion of the Home Performance with ENERGY STAR website. It features a navigation menu with links for 'HOME', 'WHAT TO EXPECT', 'TYPICAL HOME IMPROVEMENTS', and 'FIND A CONTRACTOR'. The main content area is titled 'HOME PERFORMANCE WITH ENERGY STAR in Northern Virginia' and includes a list of common energy issues: 'Do you have high energy bills?', 'Is your heating and cooling system not keeping your home comfortable?', and 'Does your home have drafty windows and doors?'. Below this, there is a section for 'Installing replacement windows, a new heating or air conditioning system, or adding more insulation may fix part of the problem. But if you want an energy-efficient home, greater comfort, and lower utility bills, the way to get the best results is with the comprehensive, "whole-house approach" offered by Home Performance with ENERGY STAR.' To the right, there are three featured sections: 'What's Your Score?' with a 'LAUNCH' button, 'What to Expect' with a 'WATCH' button, and 'Find A Contractor' with a 'FIND A CONTRACTOR' button.

BENEFITS of HOME PERFORMANCE WITH ENERGY STAR

- Utility bill savings of 20% or more
- Fewer drafts and more comfortable
- Work performed by specially trained
- Third party quality assurance to

The advertisement features a photograph of two young girls sitting on a window sill, looking out a window. Text on the left side of the image reads: 'Home improvement that makes everyone more comfortable'. Below the photo, there is a small text block: 'Home Performance with ENERGY STAR offers a comprehensive whole-house approach to home improvement that leads to lower energy bills, greater comfort, and lower utility bills. Home Performance with ENERGY STAR is a comprehensive whole-house approach to home improvement that leads to lower energy bills, greater comfort, and lower utility bills. Home Performance with ENERGY STAR is a comprehensive whole-house approach to home improvement that leads to lower energy bills, greater comfort, and lower utility bills.' At the bottom right of the ad, there is a logo for 'HOME PERFORMANCE WITH ENERGY STAR'.

The advertisement features a photograph of a diverse family of four (a man, a woman, and two children) smiling. The text on the left side of the image reads: 'ENERGY STAR' in large blue letters. Below this, it says 'CHANGE THE WORLD, START WITH ENERGY STAR' in large blue letters. At the bottom, it says 'Take the ENERGY STAR Pledge' followed by a 'GO' button with a right-pointing arrow.

MO Example - Efficiency Investment Substantial



- 1,364 jobs reported by MO DNR for 2009
- \$7,000 average job
- \$9,500,000 invested improvements by MO homeowners by MO based firms
- At 20% savings – approximately \$400 yr per home served, total MO homeowners saved over \$500,000 – and these savings will continue



YOUR HOME CONTRIBUTES TO THE QUALITY OF OUR ENVIRONMENT

U.S. Environmental Protection Agency · U.S. Department of Energy

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ENERGY STAR

Products

Home Improvement

New Homes

Buildings & Plants

Partner Resources

Home > Home Improvement > Home Performance with ENERGY STAR

Home Improvement

Common Home Problems

Home Energy Yardstick

Home Energy Audits

Air Seal & Insulate

Heat & Cool Efficiently

Home Performance with ENERGY STAR

Locations

For Sponsors

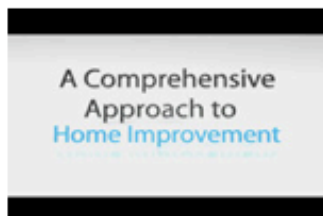
Home Improvement FAQs

For Contractors

For Insulation Manufacturers

[Join ENERGY STAR](#)

Home Performance with ENERGY STAR Video: A Comprehensive Approach to Home Improvement



[Chapter 1: A Comprehensive Approach to Home Improvement](#)

Length: 1:09

[Captioned Version](#)



[Chapter 2: The Evaluation](#)

Length: 1:05

[Captioned Version](#)



[Chapter 2: Air Sealing and Adding Insulation](#)



[Chapter 4: Heating and Cooling](#)

Length: 0:39

[Captioned Version](#)



[Chapter 5: Ducts](#)

Length: 0:41

[Captioned Version](#)



[Getting the Job Done...Right.](#)

WATCH VIDEO ▶

A Comprehensive Approach to Home Improvement



Residential Programs



Austin Energy awarded:



&

Sustained Excellence Award
2007-2010

Austin Energy – Austin, Texas

- ◆ Municipal-Owned Electric Utility
 - *10th Largest Municipal Utility*
- ◆ Serves > 888,000 Population
 - *320,000 Residential*
 - *40,000 Commercial*
- ◆ Generation – 3,170 MWs
 - *Coal 35%, Nuclear 28%, Gas 28%, Purchase Power 5%, Renewable 4%*



Residential Program



Program Offerings

- Home Performance with ENERGY STAR[®]
 - Rebates
 - Loans
- Solar Shading
- Attic Insulation
- Radiant Barrier
- Duct Sealing, Replacement & Testing

Residential Program



Program Offerings (cont.)

- Air Infiltration
 - Comprehensive
 - System Performance

- HVAC Replacement
 - Package Units
 - Central Split Systems

Residential Programs



Home Performance with ENERGY STAR®

System Replacement: (Package & Split)

14.0 SEER-11.5 EER or Greater

Air Conditioning/Heat Pumps

Rebates from \$300 up to \$600

Attic Insulation-R Value of 38

Add R Value x attic sq. ft. x \$0.0035 x \$45= Rebate

Radiant Barrier: \$0.10 per sq. ft.

Solar Screens, Film, Low E Glass (\$1.00 per square ft.)

South, West, East 1 hour or more-40% of window

Residential Programs



Comprehensive

Duct Replacement 50% or less of duct work

\$1.75 per linear ft.

Duct Insulation

\$1.25 per linear ft.

Duct Sealing

\$0.12 per sq. ft.

Test out: Blower door, back draft and duct blaster is required

System Performance

- Duct Replacement 50% or more of duct work & Window A/C units are converted to a central A/C system
 - \$1.75 per linear ft.
- Duct Insulation:
 - \$1.25 per linear ft. (wrap)
 - \$0.30 per linear ft (drape or bury)
 - \$200 Each System
 - \$50 per New Return Air Improvement

Residential Program



Loan Options

- Velocity Credit Union
- 0%-6.0% APR Unsecured Loans
- 3-10 Year Term Options
- Single Family-Duplex Properties Eligible
- Up to \$11,000

HPwES Program



Participation & Energy Savings 2005-2009

Year	2005	06	07	08	09
Participants	1,399	1,731	1,960	2,436	2,654
MW	2.4	2.5	3.1	4.02	4.43
MWh	2,810	3,610	3,382	4,390	4,864

Questions ?

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Financing – Making It Affordable




- Recent Innovations in Financing Clean Energy - SWEEP
 - [http://www.swenergy.org/pubs/Recent Innovations in Financing for Clean Energy.pdf](http://www.swenergy.org/pubs/Recent_Innovations_in_Financing_for_Clean_Energy.pdf)
- Guide to Energy Efficiency and Renewable Energy Financing Districts
 - <http://www.ci.berkeley.ca.us/ContentDisplay.aspx?id=44262>
- Financing Guidebook for Energy Efficient Program Sponsors
 - http://www.energystar.gov/ia/home_improvement/downloads/FinancingGuidebook.pdf
- ENERGY STAR Mortgage and Financing
 - http://www.energyprograms.org/energystar/lenders/lender_faq.html
- State-Sponsored Energy Efficiency Grant, Loan and Tax Credit Programs – EPC Issues Brief
 - <http://www.energyprograms.org/briefs/0701-GrantLoanPrograms.pdf>

In Conclusion



- Home Performance is **the** right delivery – yet needs trained workforce, attractive incentives and a motivated sponsor
- Don't re-invent the wheel on existing home's efficiency programs – dial in
- Look to build infrastructure toward sustainability – leverage training resources and utilities
- Don't under-estimate marketing and consumer education needs



YOUR HOME CONTRIBUTES TO THE QUALITY OF OUR ENVIRONMENT

U.S. Environmental Protection Agency • U.S. Department of Energy

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Home Improvement


- Common Home Problems
- Home Energy Yardstick
- Home Energy Audits
- Air Seal & Insulate
- Heat & Cool Efficiently
- Home Performance with ENERGY STAR
 - Locations
 - For Sponsors**
 - Home Improvement FAQs
 - For Contractors
 - For Insulation Manufacturers
- Join ENERGY STAR

Home Performance with ENERGY STAR for Sponsors


Home Performance with ENERGY STAR, sponsored nationally by U.S. EPA and U.S. DOE, offers a comprehensive, whole-house approach to improving energy efficiency and comfort at home, while helping to protect the environment. An increasing number of utilities, state energy offices, and other agencies are using Home Performance with ENERGY STAR as an important part of their residential energy efficiency portfolio.

[Home Performance with ENERGY STAR Contractor Partnership pilot program planned for Northern Virginia.](#)


About Home Performance with ENERGY STAR



Benefits of Sponsorship




Program Locations




RESOURCES & TOOLS

DEVELOP YOUR PROGRAM



MARKET YOUR PROGRAM



Brave New World of Efficiency!



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