Home Performance with ENERGY STAR

Existing Homes Efficiency – If You Want BetterBuildings – Go with HPwES

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

Agenda

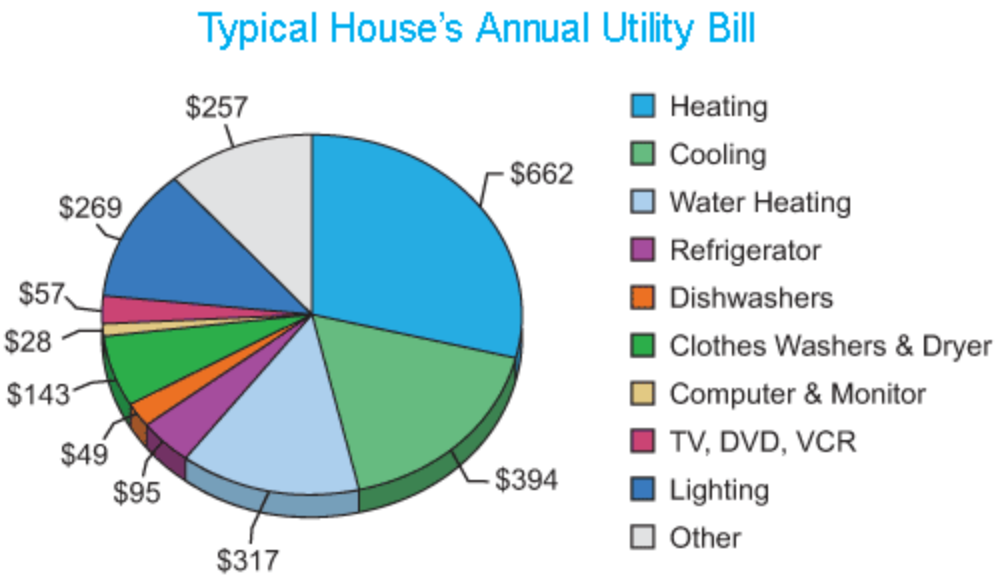
- Inside the Home of Home Performance delivery
- Connecting your program to HPwES – don't reinvent – piggyback!
- Requirements of a HPwES Sponsor & Contractor
- Take a look at Austin Energy's HPwES program
- Keeping HPwES alive post DOE funding
- Next steps and questions

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 households[1]
  - 69% built before 1980[1]
  - 68% or 76 million owner occupied[1]
  - 59% single-family owner occupied[1]



- Average energy cost $2200/year

- Heating and Cooling almost 50%
  - 56% heat with natural gas[2]
  - 26% heat with electricity[2]
  - 64% cool with central AC[2]

[1]2007 Building energy Data Book, DOE
[2]2005 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.

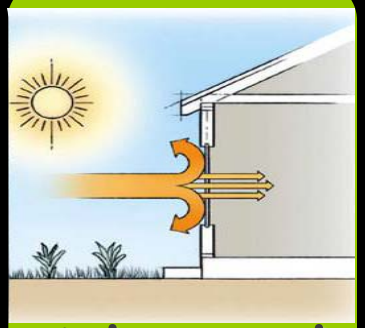
Program Elements

- QA/QC
- Demand
- Supply

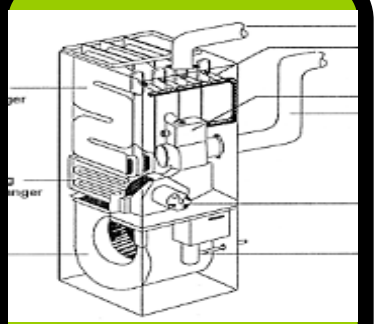
Controlling Air, Thermal and Moisture Flow are Key to Home Performance

Air Sealing

Tight Ducts

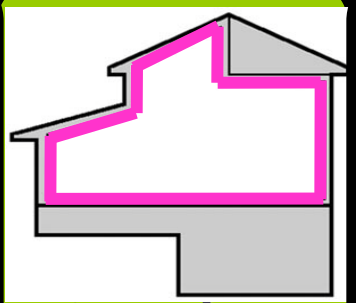


Advanced Windows



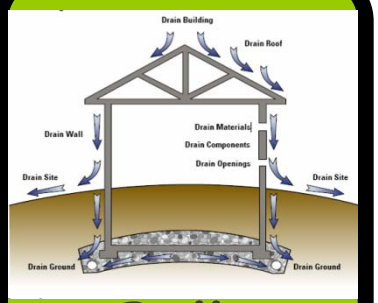
Efficient Equipment

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?

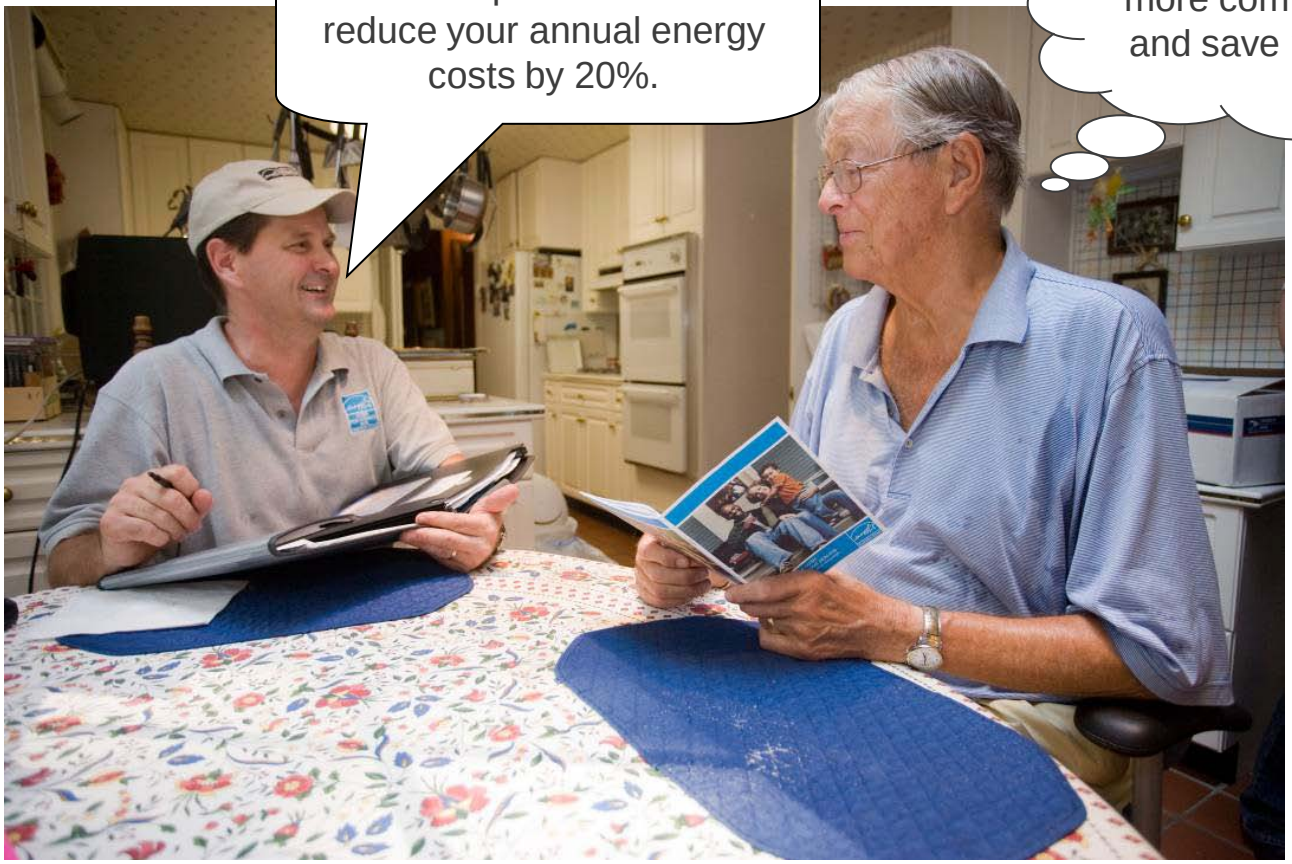
Maybe a Comprehensive Audit?

Would a HVAC Contractor Look Here?


Maybe a comfort problem in the bonus room?
R-10

HPwES to the Rescue!

Present Results and Proposal



Selling is EVERYTHING!!

HPwES Comprehensive Job

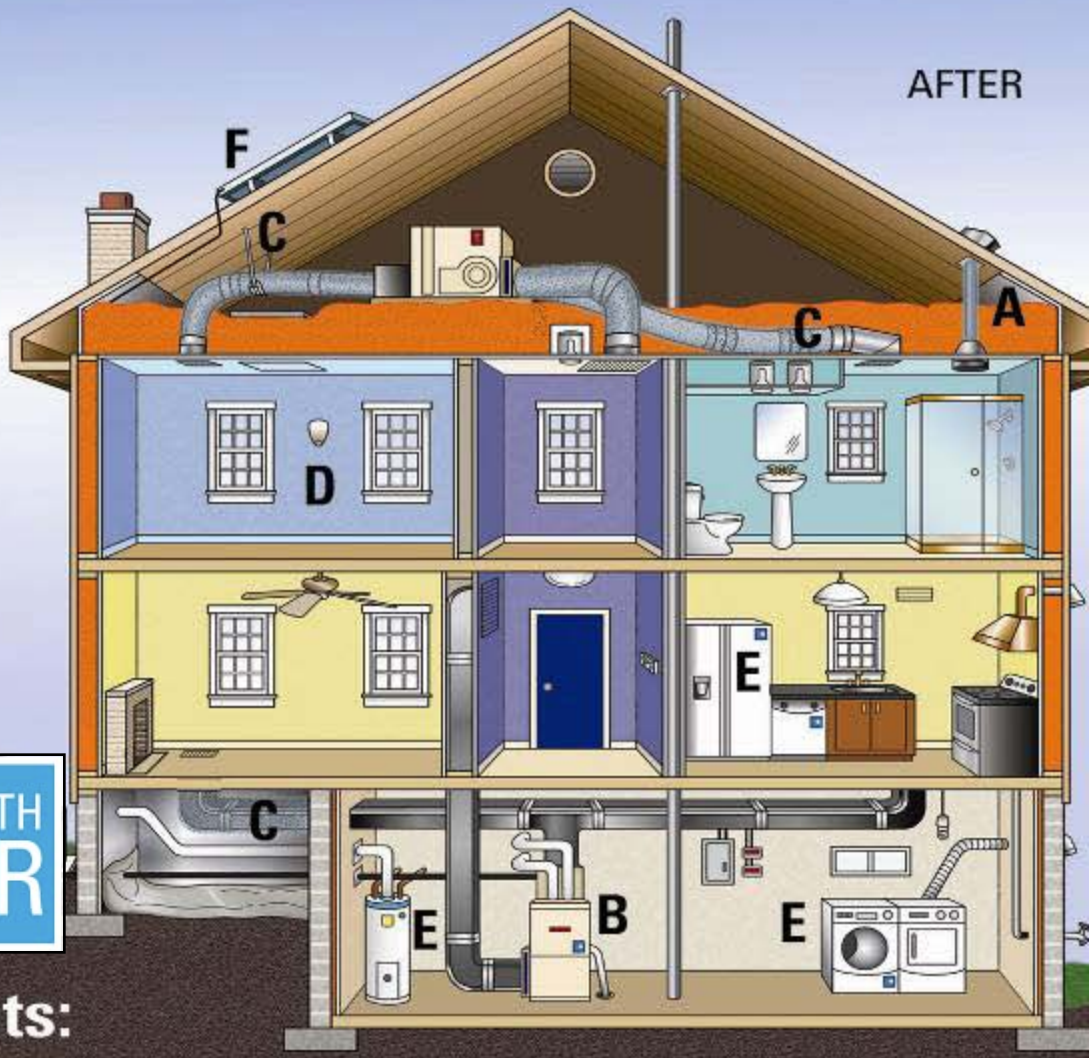
- Whole-house energy inspection
  - Energy specialist trained in building science
  - Using tools figure out problems
  - Connect performance dots
- Summary report
  - Findings
  - Recommendations
  - Estimated costs and savings

➢ 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

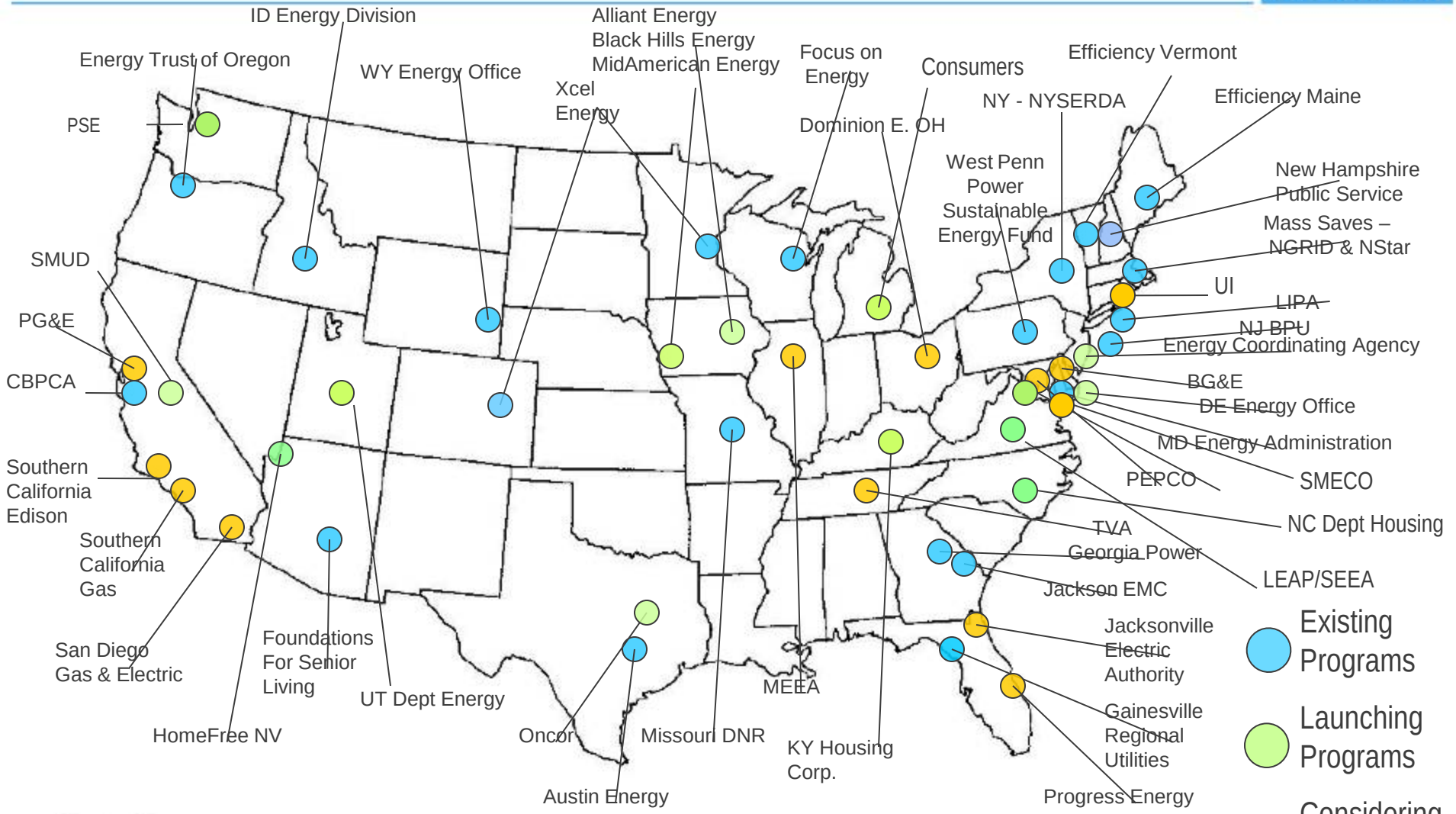
Home Performance with ENERGY STAR

- 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

HPwES 2010 - Getting Busy



80,000+ homes improved!

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

- **Demand**

  - 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®

Sponsor Guide

HOME PERFORMANCE WITH ENERGY STAR

Version 1.0
September 2008


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 in-kind 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 strategically 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) ☐

Budget

Source of funding: System Benefit Charge ☐ | Grant ☐ | Rate Recovery ☐ | Other ☐

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 (QA)	$	$	$	$	$	$
Evaluation	$	$	$	$	$	$
Total	$	$	$	$	$	$

What goals do you plan to achieve?

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

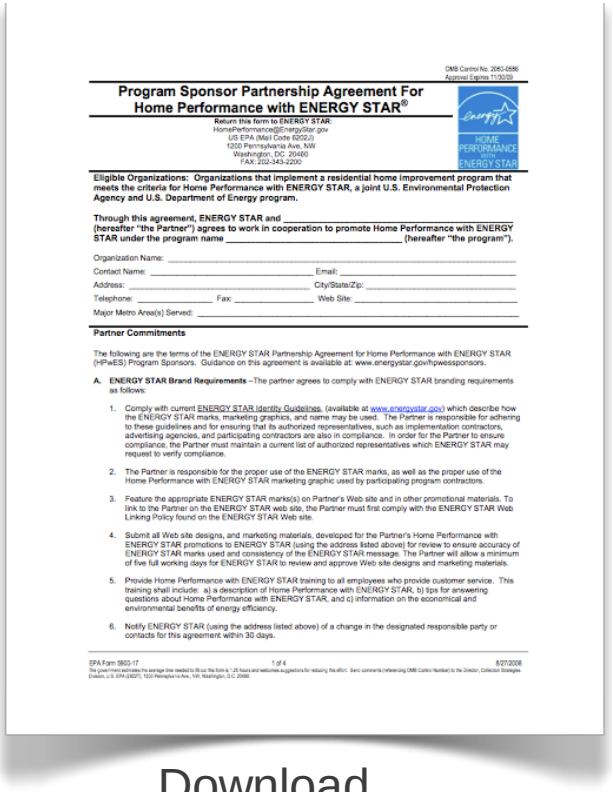
What metropolitan area or service territory will be served by the program?

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

Download Sponsor Guide and Program Plan Template from web site to help with planning

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



Program Sponsor Partnership Agreement For Home Performance with ENERGY STAR®

Return this form to ENERGY STAR:
HomePerformance@EnergyStar.gov
US EPA (Mail Code 6202J)
1200 Pennsylvania Ave, NW
Washington, DC 20460
FAX: 202-343-2200

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: _____
Contact Name: _____ Email: _____
Address: _____ City/State/Zip: _____
Telephone: _____ Fax: _____ 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/hpwessponsors.

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

1. Comply with current ENERGY STAR Identity Guidelines, (available at www.energystar.gov) which describe how the ENERGY STAR marks, 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 marks(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 message. 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 5900-17 1 of 4 8/27/2008

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*

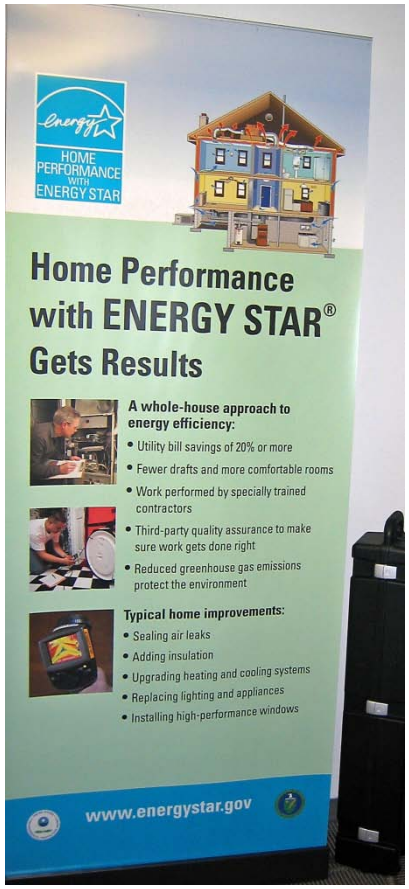
http://www.raponline.org/Pubs/RatePayerFundedEE/RatePayerFundedEEPartI.pdf

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


I hope they realize how important this is.
Marketing Strategy

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.

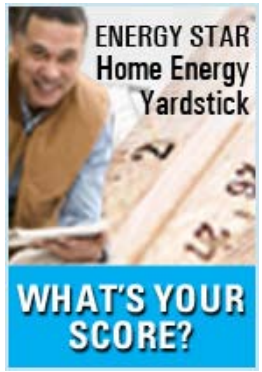
Instructions for hosting online tools are available on the ENERGY STAR Web site www.energystar.gov; and hard copies of guides and brochures can be ordered free-of-charge at www.energystar.gov/publications.

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

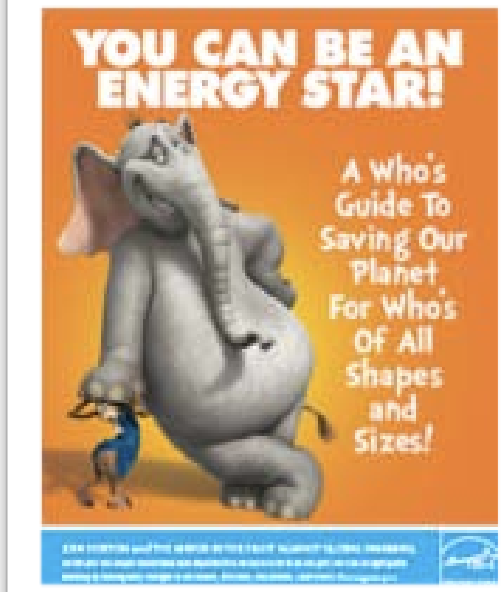
- Home Energy Yardstick
  Track your progress
  www.energystar.gov/yardstick
  Can be hosted on your site



ENERGY STAR Publications

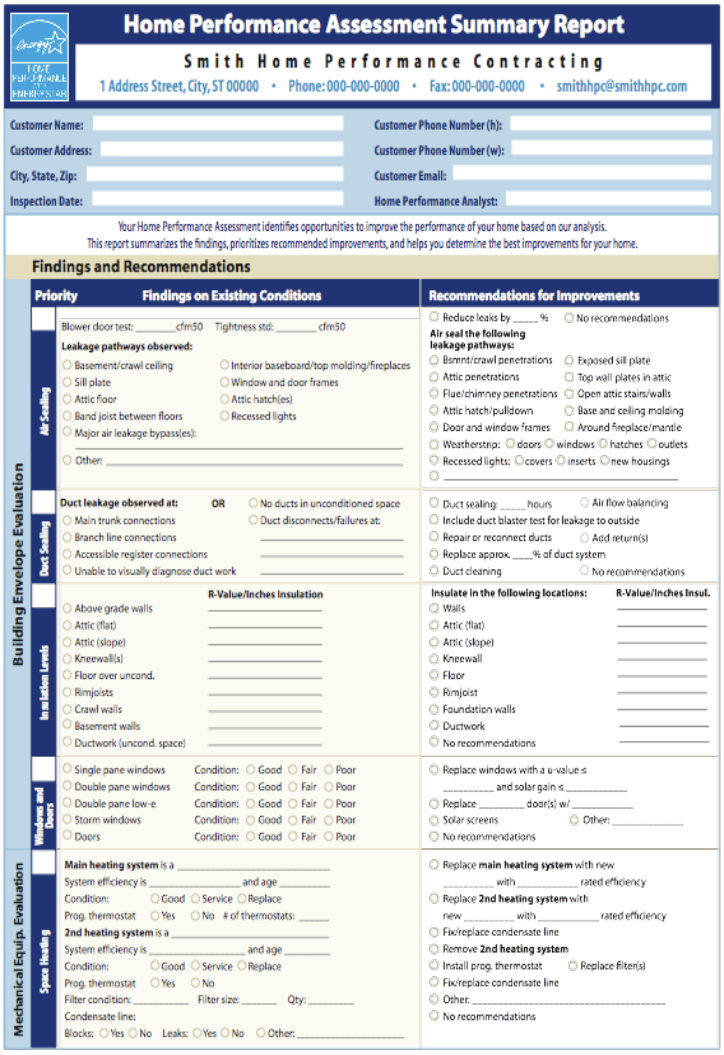
Residential Resources

Educational Resources



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.

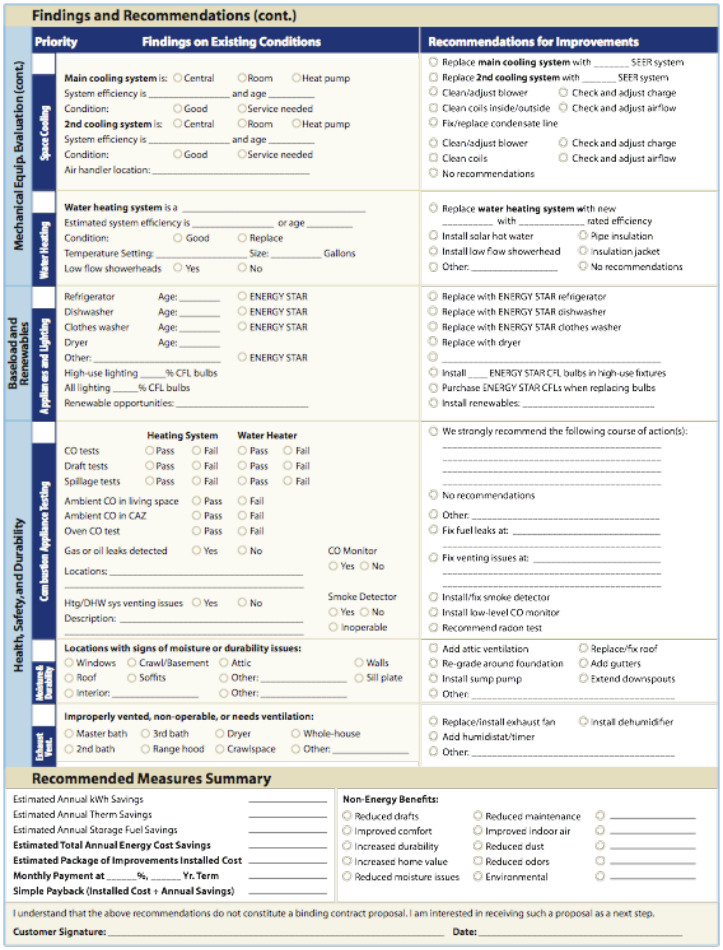
Findings and Recommendations

Building Envelope Evaluation

Priority	Findings on Existing Conditions	Recommendations for Improvements
Air Sealing	Blower door test: _____cfm50 Tightness std: _____ cfm50 **Leakage pathways observed:** ○ Basement/crawl ceiling ○ Interior baseboard/top molding/fireplaces ○ Sill plate ○ Window and door frames ○ Attic floor ○ Attic hatch(es) ○ Band joist between floors ○ Recessed lights ○ Major air leakage bypass(es): _____ ○ Other: _____	○ Reduce leaks by _____ % ○ No recommendations **Air seal the following leakage pathways:** ○ Bsmnt/crawl penetrations ○ Exposed sill plate ○ Attic penetrations ○ Top wall plates in attic ○ Flue/chimney penetrations ○ Open attic stairs/walls ○ Attic hatch/pulldown ○ Base and ceiling molding ○ Door and window frames ○ Around fireplace/mantle ○ Weatherstrip: ○ doors ○ windows ○ hatches ○ outlets ○ Recessed lights: ○ covers ○ inserts ○ new housings ○ _____
Duct Sealing	**Duct leakage observed at:** OR ○ No ducts in unconditioned space ○ Main trunk connections ○ Duct disconnects/failures at: _____ ○ Branch line connections _____ ○ Accessible register connections _____ ○ Unable to visually diagnose duct work _____	○ Duct sealing: _____ hours ○ Air flow balancing ○ Include duct blaster test for leakage to outside ○ Repair or reconnect ducts ○ Add return(s) ○ Replace approx. ____% of duct system ○ Duct cleaning ○ No recommendations
Insulation Levels	**R-Value/Inches Insulation** ○ Above grade walls _____ ○ Attic (flat) _____ ○ Attic (slope) _____ ○ Kneewall(s) _____ ○ Floor over uncond. _____ ○ Rimjoists _____ ○ Crawl walls _____ ○ Basement walls _____ ○ Ductwork (uncond. space) _____	**Insulate in the following locations:** **R-Value/Inches Insul.** ○ Walls _____ ○ Attic (flat) _____ ○ Attic (slope) _____ ○ Kneewall _____ ○ Floor _____ ○ Rimjoist _____ ○ Foundation walls _____ ○ Ductwork _____ ○ No recommendations _____
Windows and Doors	○ Single pane windows Condition: ○ Good ○ Fair ○ Poor ○ Double pane windows Condition: ○ Good ○ Fair ○ Poor ○ Double pane low-e Condition: ○ Good ○ Fair ○ Poor ○ Storm windows Condition: ○ Good ○ Fair ○ Poor ○ Doors Condition: ○ Good ○ Fair ○ Poor	○ Replace windows with a u-value ≤ _____ and solar gain ≤ _____ ○ Replace _____ door(s) w/ _____ ○ Solar screens ○ Other: _____ ○ No recommendations

Mechanical Equip. Evaluation

Space Heating	**Main heating system** is a _____ System efficiency is _____ and age _____ Condition: ○ Good ○ Service ○ Replace Prog. thermostat ○ Yes ○ No # of thermostats: _____ **2nd heating system** is a _____ System efficiency is _____ and age _____ Condition: ○ Good ○ Service ○ Replace Prog. thermostat ○ Yes ○ No Filter condition: _____ Filter size: _____ Qty: _____ Condensate line: Blocks: ○ Yes ○ No Leaks: ○ Yes ○ No ○ Other: _____	○ Replace **main heating system** with new _____ with _____ rated efficiency ○ Replace **2nd heating system** with new _____ with _____ rated efficiency ○ Fix/replace condensate line ○ Remove **2nd heating system** ○ Install prog. thermostat ○ Replace filter(s) ○ Fix/replace condensate line ○ Other: _____ ○ No recommendations



Findings and Recommendations (cont.)

	Priority	Findings on Existing Conditions	Recommendations for Improvements
Mechanical Equip. Evaluation (cont.) — Space Cooling		**Main cooling system** is: ○ Central ○ Room ○ Heat pump System efficiency is _____ and age _____ Condition: ○ Good ○ Service needed **2nd cooling system** is: ○ Central ○ Room ○ Heat pump System efficiency is _____ and age _____ Condition: ○ Good ○ Service needed Air handler location: _____	○ Replace **main cooling system** with _____ SEER system ○ Replace **2nd cooling system** with _____ SEER system ○ Clean/adjust blower ○ Check and adjust charge ○ Clean coils inside/outside ○ Check and adjust airflow ○ Fix/replace condensate line ○ Clean/adjust blower ○ Check and adjust charge ○ Clean coils ○ Check and adjust airflow ○ No recommendations
Water Heating		**Water heating system** is a _____ Estimated system efficiency is _____ or age _____ Condition: ○ Good ○ Replace Temperature Setting: _____ Size: _____ Gallons Low flow showerheads ○ Yes ○ No	○ Replace **water heating system** with new _____ with _____ rated efficiency ○ Install solar hot water ○ Pipe insulation ○ Install low flow showerhead ○ Insulation jacket ○ Other: _____ ○ No recommendations
Baseload and Renewables — Appliances and Lighting		Refrigerator Age: _____ ○ ENERGY STAR Dishwasher Age: _____ ○ ENERGY STAR Clothes washer Age: _____ ○ ENERGY STAR Dryer Age: _____ Other: _____ ○ ENERGY STAR High-use lighting ____% CFL bulbs All lighting ____% CFL bulbs Renewable opportunities: _____	○ Replace with ENERGY STAR refrigerator ○ Replace with ENERGY STAR dishwasher ○ Replace with ENERGY STAR clothes washer ○ Replace with dryer ○ _____ ○ Install ____ ENERGY STAR CFL bulbs in high-use fixtures ○ Purchase ENERGY STAR CFLs when replacing bulbs ○ Install renewables: _____
Health, Safety, and Durability — Combustion Appliance Testing		**Heating System** **Water Heater** CO tests ○ Pass ○ Fail ○ Pass ○ Fail Draft tests ○ Pass ○ Fail ○ Pass ○ Fail Spillage tests ○ Pass ○ Fail ○ Pass ○ Fail Ambient CO in living space ○ Pass ○ Fail Ambient CO in CAZ ○ Pass ○ Fail Oven CO test ○ Pass ○ Fail Gas or oil leaks detected ○ Yes ○ No CO Monitor ○ Yes ○ No Locations: _____ Htg/DHW sys venting issues ○ Yes ○ No Smoke Detector ○ Yes ○ No ○ Inoperable Description: _____	○ We strongly recommend the following course of action(s): _____ ○ No recommendations ○ Other: _____ ○ Fix fuel leaks at: _____ ○ Fix venting issues at: _____ ○ Install/fix smoke detector ○ Install low-level CO monitor ○ Recommend radon test
Moisture & Durability		**Locations with signs of moisture or durability issues:** ○ Windows ○ Crawl/Basement ○ Attic ○ Walls ○ Roof ○ Soffits ○ Other: _____ ○ Sill plate ○ Interior: _____ ○ Other: _____	○ Add attic ventilation ○ Replace/fix roof ○ Re-grade around foundation ○ Add gutters ○ Install sump pump ○ Extend downspouts ○ Other: _____
Exhaust Vent.		**Improperly vented, non-operable, or needs ventilation:** ○ Master bath ○ 3rd bath ○ Dryer ○ Whole-house ○ 2nd bath ○ Range hood ○ Crawlspace ○ Other: _____	○ Replace/install exhaust fan ○ Install dehumidifier ○ Add humidistat/timer ○ 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:
○ Reduced drafts ○ Reduced maintenance ○ _____
○ Improved comfort ○ Improved indoor air ○ _____
○ Increased durability ○ Reduced dust ○ _____
○ Increased home value ○ Reduced odors ○ _____
○ Reduced moisture issues ○ 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

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

Home Performance with ENERGY STAR : ENERGY STAR

YOUR HOME CONTRIBUTES TO
THE QUALITY OF OUR ENVIRONMENT
U.S. Environmental Protection Agency • U.S. Department of Energy

About ENERGY STAR · News Room · FAQs · KIDS Search Go

Products | Home Improvement | New Homes | Buildings & Plants | Partner Resources

- 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 > Home Improvement > Home Performance with 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 3: Air Sealing and Adding

Chapter 4: Heating and Cooling

Length: 0:39

Captioned Version

Chapter 5: Ducts

Length: 0:41

Captioned Version

Residential Programs

Austin Energy awarded:

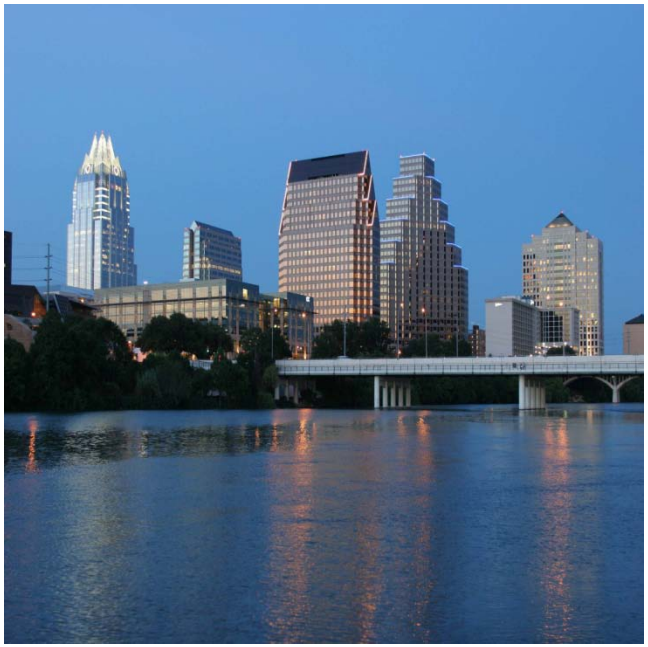
&

Sustained Excellence Award
2007-2010

Overview

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

Residential Programs

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 ?

Matthew Phillips

matthew.phillips@austinenergy.com

Phone # 512-482-5326

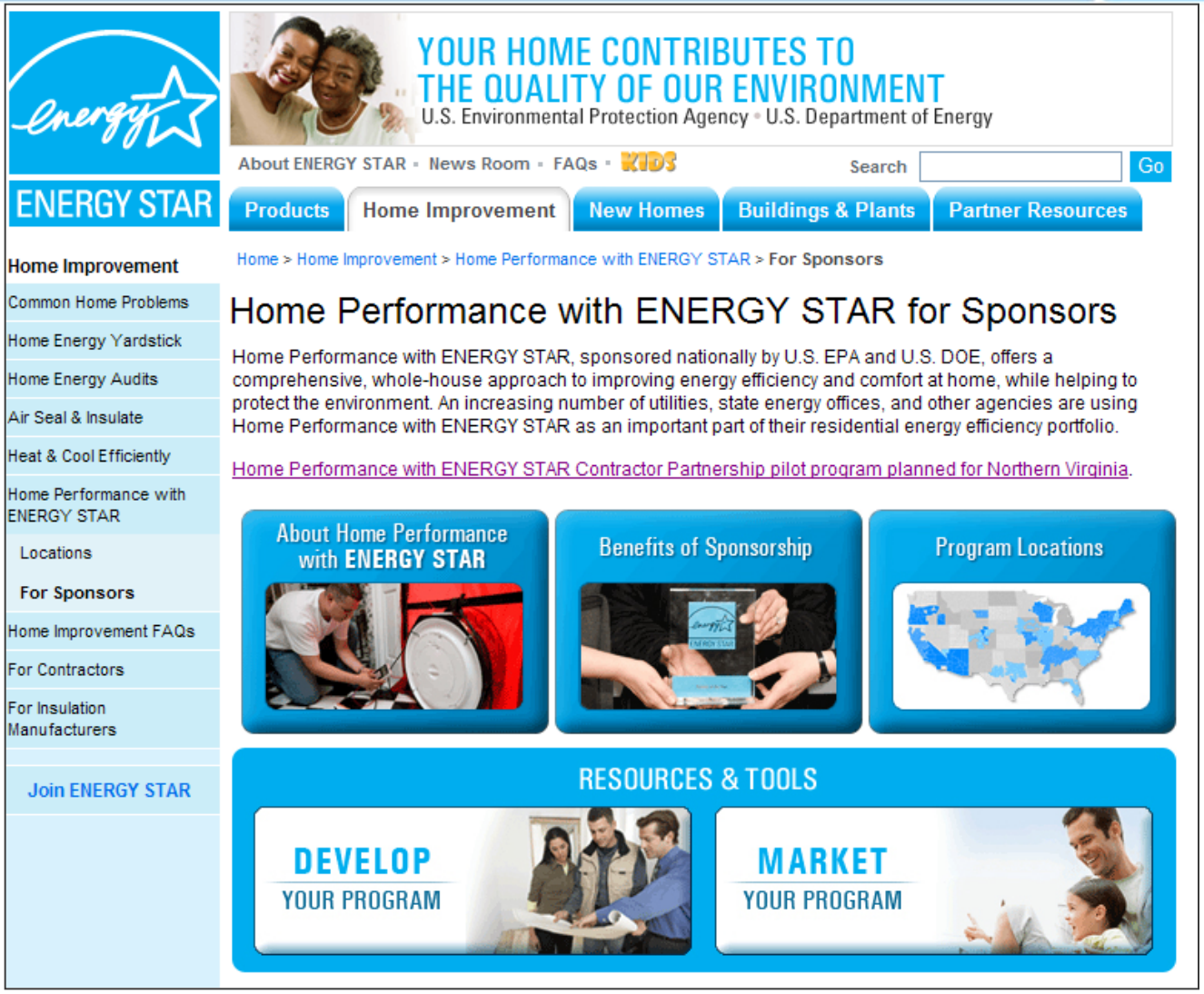
Financing – Making It Affordable

- Recent Innovations in Financing Clean Energy - SWEEP
  - 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

www.energystar.gov/hpwessponsors



Brave New World of Efficiency!

vonschrader.chandler@epa.gov

caseymurphy@icfi.com