

Home Energy Score

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White House Recovery thru Retrofit Effort: Identified 3 Major Market Barriers

Consumer Information

Consumers do not have access to straightforward and reliable information.

Worker Certification & Training

Consumers and industry want access to consistent workforce standards and a national certification.

Financing

Homeowners need access to financing to pursue investments in energy efficiency.

Objectives for the Home Energy Score

- Strengthen the home energy improvement market
- Provide an affordable and credible means for homeowners and homebuyers to understand --
 - their home's energy performance,
 - how their home compares to others in their area, and
 - how to improve its efficiency.

Analysis Done to Date

- Pre-White House Announcement
 - Focus groups
 - Social science research
 - Hypothetical runs to determine most important data to collect as part of assessments
- Pilots
 - Assessor feedback
 - Homeowner feedback
 - Data from pilots
 - Analysis with NREL on pilot data and other data from programs in several states (home characteristics data with utility bills)
 - Help prove validity of Home Energy Score
 - Bin/Weather analysis

Motivating Investment in Energy Improvements

- Homeowners appreciate straightforward, simple information... at least initially
 - Clear, simple, colorful graphics that make sense at a glance
- Homeowners want customized recommendations
- People are influenced by their peers and neighbors
 - Reference points matter
 - e.g., how does my energy use compare to that of my neighbors’?
- Consumers care about the bottom line
 - However, many are misinformed about which investments will pay off most quickly and save the most energy
 - Many don’t realize that home energy improvements can also improve the comfort of their homes as well as health and safety
- Consumers like to see government seal on information provided
 - Co-branding with local provider also can be effective

Extracted from key Findings from Focus Groups and Social Science Review

Addressing the Information Barrier

What is the Home Energy Score?

- Standardized method for quickly assessing a home's major energy systems and the envelope
- Allows comparison between homes regardless of location in U.S.

Who provides it?

- Local and state governments, utilities, non-profits, and other home performance industry organizations

What does a homeowner get?

- Asset Score
- Home Facts: List of data collected by a Qualified Assessor
- Recommendations for improvements

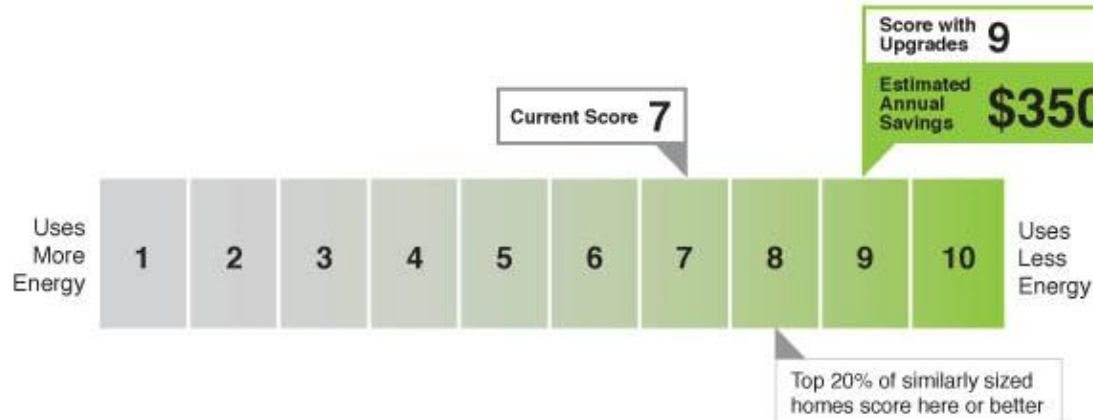
Home Energy Score: Pilot Version Tested in 2011

HOME ENERGY SCORE

Address **12345 Honeysuckle Lane
Unit 3
Smithville, AR 99999**

Total Energy **140 MBTUs / year**
Home Size **2,200 square feet**
Air Conditioning **Yes**

Climate Zone



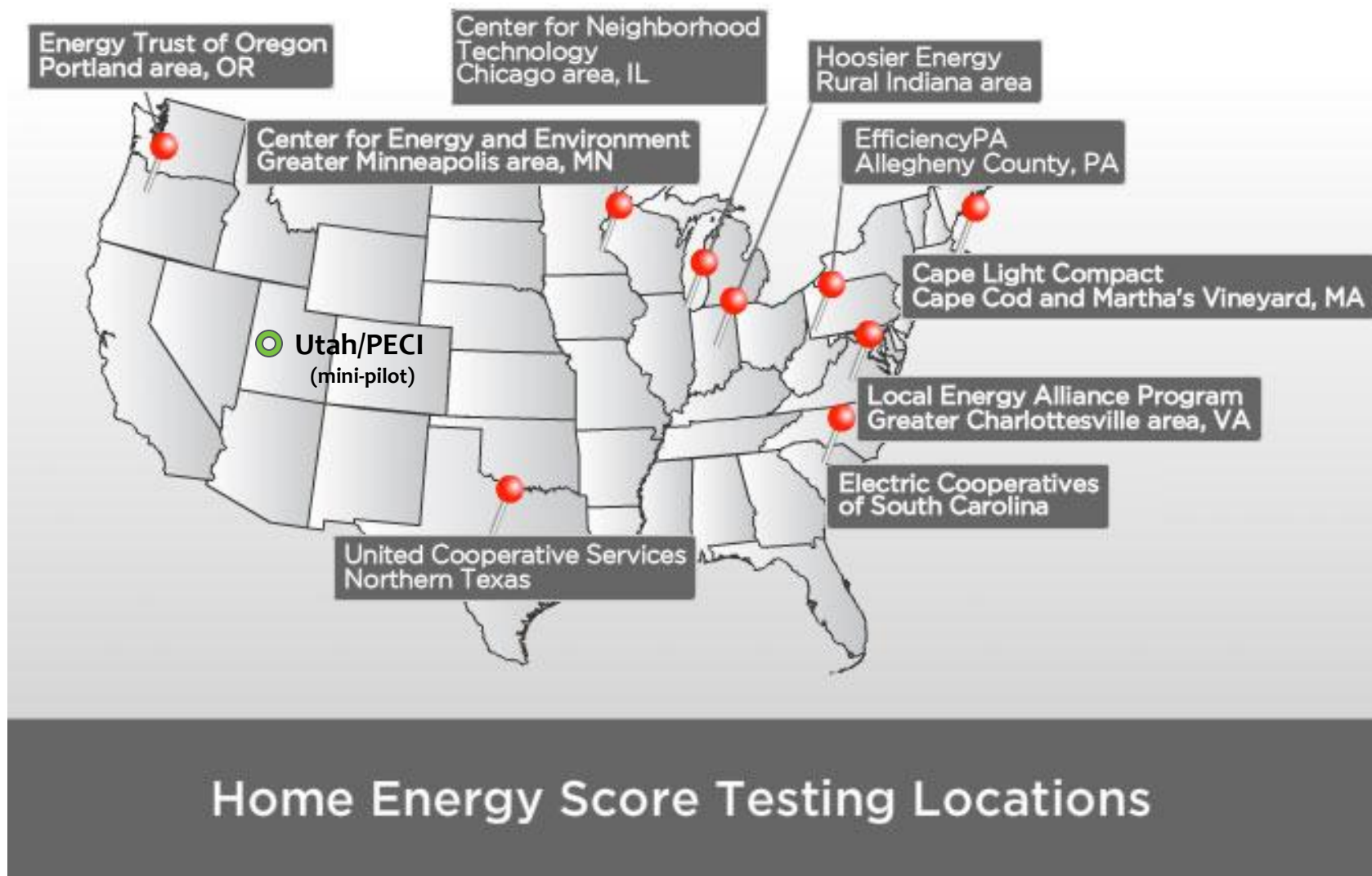
Energy use reported in Million British Thermal Units (MBTUs). Estimated savings reflect the amount a homeowner will save on their annual utility bill if all recommended improvements are made. Both energy use and savings estimates assume that 2 adults and 1 child live in the home. Your actual energy use and savings will depend on how you maintain your home, how many people live there, your day-to-day habits and weather. To learn more about how to save energy and money in your home, as well as more about the home energy score, visit: homeenergyscore.gov



U.S. DEPARTMENT OF
ENERGY

Assessor # **55555** Assessment Date **12/31/2010** Label # **123456789**

Home Energy Score Pilots

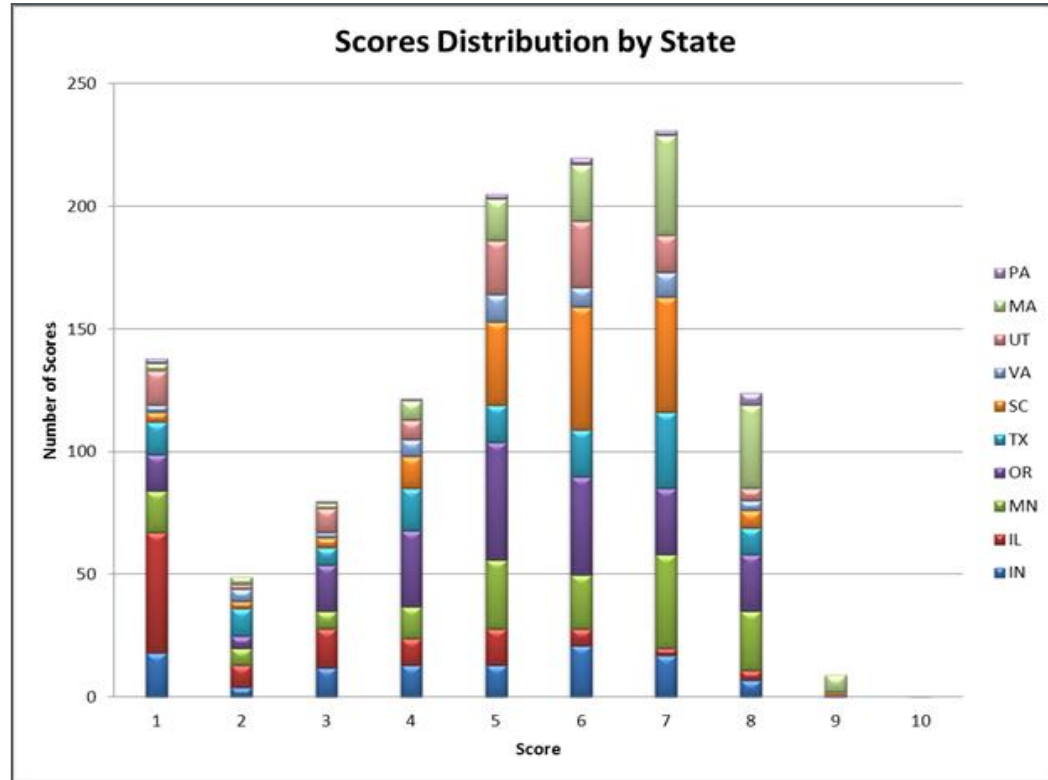


Home Energy Score Pilots

- Nine pilots completed in 2011
- 1,000+ homes assessed in total (January – June 2011)
- 31 qualified assessors participated
- In most cases, the scores reflected relatively “normal” distributions

Improvements to Scoring Tool

- Need to reconsider bin values in some climates
- Making adjustments
- Version 1.0 expected late 2011



Homeowners understood and liked the scoring method...

More than 90% of those who responded thought –

- The amount of time they had to be in the house was reasonable.
- The 1 to 10 scale was easy to understand.

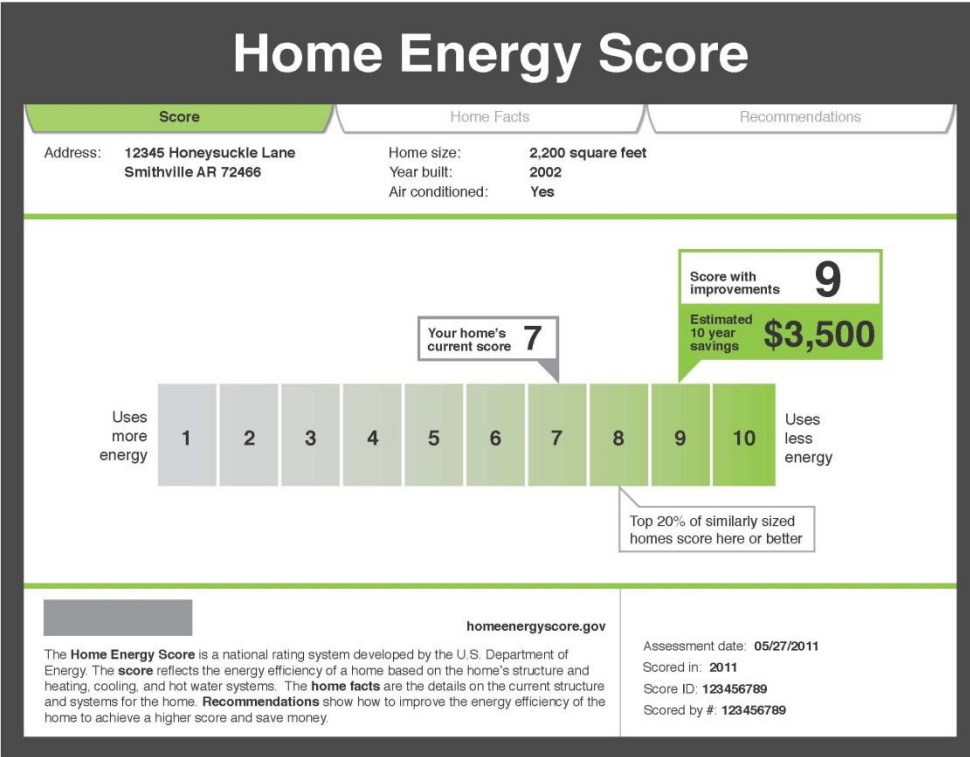
More than 80% of those who responded said –

- The recommendations would help them prioritize energy improvements to make to my home.
- They now understand how their home compares to top performing homes in my area.

*** This is based on preliminary results.**

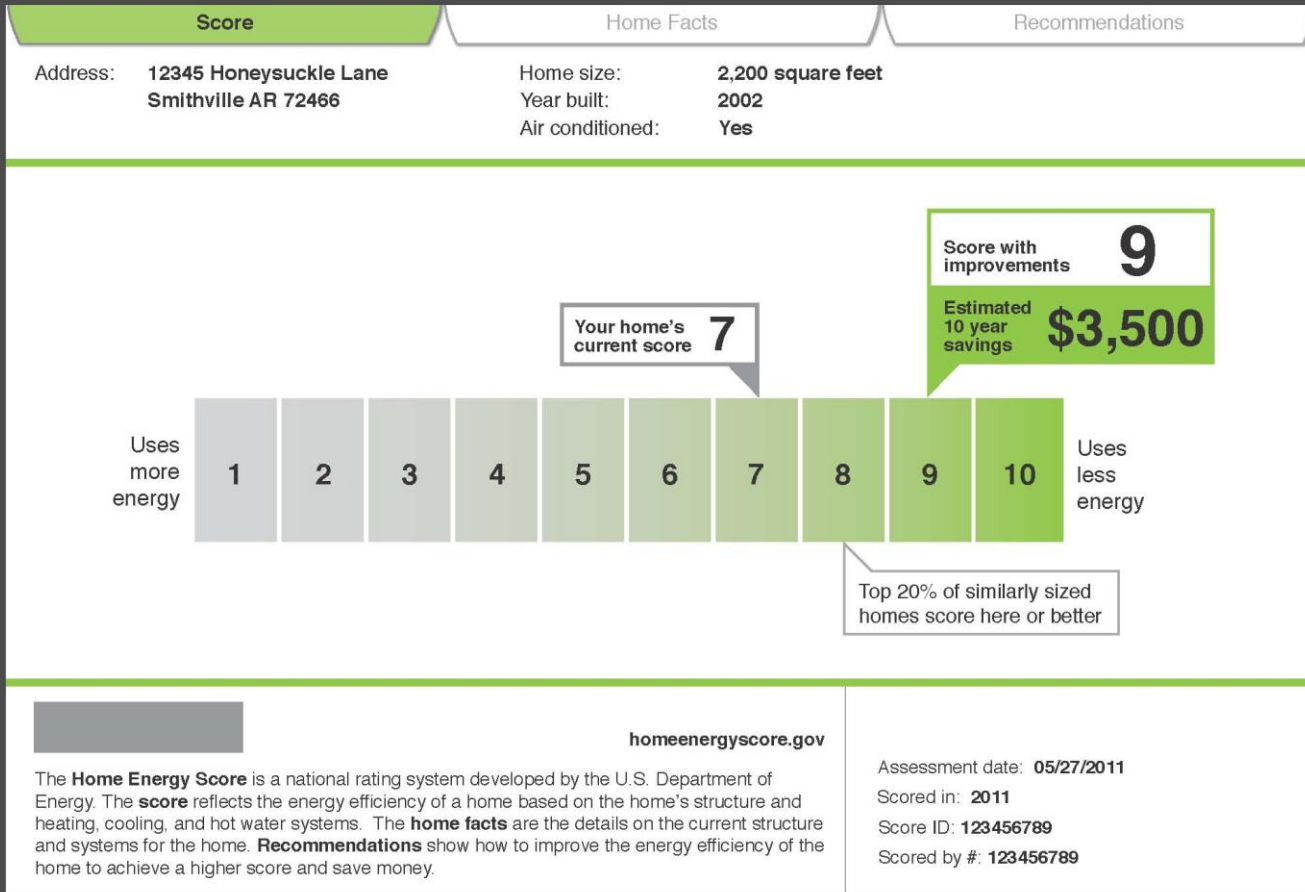
Feedback Led to Program Improvements

- Simplified label/score
- Improved scoring tool
- Revised assessor training and testing



Home Energy Score

Home Energy Score



Home Energy Score

Score

Home Facts

Recommendations



About this home

Assessment date:	05/27/2011
Address:	12345 Honeysuckle Lane
City, state, zip:	Smithville AR 72466
Year built:	2000
Number of bedrooms:	3
Stories above ground level:	2
Interior floor-to-ceiling height (feet):	8
Conditioned floor area (all stories combined, square feet):	25,000
Direction faced by front of house:	North



Estimated energy use per year

Total energy (MBTUs):	234
Electricity (kWh):	6650
Natural gas (therms):	1240
Oil (gallons):	120
Propane (gallons):	150



Comments

Comment text would go here and would span the entire width of the page instead of just one column.


Score ID: 123456789
homeenergyscore.gov

Recommendations (optional)


Home Energy Score

Score
Home Facts
Recommendations




Address: **12345 Honeysuckle Lane**
Smithville AR 72466

 **Repair now:** These improvements will save you money, conserve energy, and improve your comfort now

	Estimated utility bill savings (\$/year)
Air tightness: Hire a professional to seal the gaps and cracks through wich air leaks into and out of your home	\$510
Ducts: Hire a professional to seal your ducts to reduce air leakage	\$470

 **Replace later:** These improvements will help you save energy when it's time to replace or upgrade

	Estimated utility bill savings (\$/year)
Water heater: Select a water heater with an ENERGY STAR label	\$50
Furnace: Select a furnace with an ENERGY STAR label	\$430

 With these improvements
reduce your home's carbon
footprint by: **43%**  

Score ID: **123456789**
homeenergyscore.gov

Interested in Becoming a Partner?

Primary Requirements

- Score minimum of 200 homes annually
- Meet quality assurance requirements
 - Repeat scores for 5 percent of homes
- Assessors must meet DOE requirements
 - BPI certified building analyst or HERS Rater
 - Training available on-line
 - Must pass DOE on-line exam

Signed on to date

- ❖ Babylon, NY
- ❖ Build It Green/Stop Waste (several jurisdictions in California)
- ❖ Cape Light Compact, MA
- ❖ Columbia Water and Light, MO
- ❖ Energy Coordinating Agency, PA
- ❖ Local Energy Alliance Program (several jurisdictions in Virginia)
- ❖ Long Island Power Authority, NY
- ❖ Midwest Energy Efficiency Alliance, IL (with Center for Neighborhood Technology)
- ❖ Ohio Partners for Affordable Energy
- ❖ Utah Office of Energy Development

More about the Home Energy Scoring Tool

- Only Qualified Assessors can access the tool
- The tool is for use in single family homes
 - Townhomes are eligible but require special inputs
 - Cannot be used for multi-family housing
- The tool is only available through internet access
- Application Programming Interface (API) will be available in March 2012
 - Will allow seamless link to other software tools

Criteria for Home Energy Score Qualified Assessors

All Qualified Assessors must complete the following prior to gaining access to the scoring tool and providing Home Energy Scores:

1. Provide proof of a valid certification from one or more of the following:
 - Building Performance Institute's (BPI) Building Analyst certification
 - Residential Energy Services Network (RESNET) certified Rater
2. Pass the online Home Energy Score Building Science Test as well as the online Home Energy Score Training Test (including “scoring” of 3 sample homes on-line)

Individual assessors are currently not eligible for partnership with Home Energy Score. To participate, individual assessors must work thru Partner organizations.

Convincing Homeowners to Invest in Energy Efficiency Isn't Always Easy

- Tens of millions of homes could benefit from cost effective energy improvements but...
 - Home energy is a minor cost for middle and upper income households (3-5% of household income)
 - On average, about \$2200 in utility costs per year
 - Energy improvements lack cache and are largely invisible (exception: windows)
 - Home improvements are generally perceived as a hassle

So, what can we do to encourage investments in energy efficiency?

- Make it easy
- Make it reliable (workforce standards)
- Encourage energy improvements as part of home maintenance
 - Home maintenance needs to be as easy as car maintenance
- Seize the moment
 - Integrate improvements with home renovations or appliance purchases
 - Encourage investment in improvements at time of sale or within first year of home ownership
- Emphasize other benefits: comfort, improved value
- Advertise your investment/spread the word
 - Similar to home renovations, improvements can “spread” if visible to neighbors
 - Highlight energy efficiency at time of sale

For more information

If you have additional questions or comments,
please contact **Joan Glickman** at
homeenergyscore@ee.doe.gov

Visit: homeenergyscore.gov for
recorded webinars and Q&A sessions as well as
additional information on the program.

- EXTRA SLIDES

Home Energy Score

Score	Home Facts	Recommendations
	<div data-bbox="324 445 376 502"></div> <p>Air-tightness</p> <p>Has this house been air sealed? No/Don't know</p>	
	<div data-bbox="324 602 376 659"></div> <p>Roof, attic & foundation</p> <p>Roof</p> <p>Roof construction: Roof (with expanded polystyrene (1-inch EPS))</p> <p>Roof absorptance (between 0 and 1): 0</p> <p>Attic</p> <p>Attic or ceiling type: Unconditioned attic</p> <p>Attic floor insulation: R-21</p> <p>Foundation</p> <p>Foundation type: Slab-on-grade foundation</p> <p>Foundation walls insulation level: R-0</p>	
	<div data-bbox="324 1002 376 1059"></div> <p>Wall construction</p> <p>Front (or all sides same): Straw bale stucco, R-0</p> <p>Back: Concrete block brick veneer, R-6</p> <p>Right: Structural brick none, R-10</p> <p>Left: Wood frame with 1-inch EPS sheathing</p>	
		<div data-bbox="981 459 1033 516"></div> <p>Windows & skylights</p> <p>Skylights</p> <p>Type: Double-pane aluminum, clear</p> <p>Area (square feet): 40</p> <p>Windows</p> <p>Window area: front (square feet) 300</p> <p>Window area: right (square feet) 300</p> <p>Window area: back (square feet) 30</p> <p>Window area: left (square feet) 5</p> <p>Window type: front (or all sides same)</p> <p>U-factor .5</p> <p>Solar heat gain coefficient .5</p> <p>Window type: right</p> <p>U-factor .3</p> <p>Solar heat gain coefficient .3</p> <p>Window type: back</p> <p>U-factor .5</p> <p>Solar heat gain coefficient .5</p> <p>Window type: left</p> <p>U-factor .3</p> <p>Solar heat gain coefficient .3</p>
		<p>Score ID: 123456789 homeenergyscore.gov</p>

Home Energy Score

Score

Home Facts

Recommendations



Systems

Heating system

Type: Central gas furnace
Installation date:
Efficiency value: 80.0

Cooling system

Type: Central air conditioner
Installation date:
Efficiency value: 10.0

Ducts

Duct location: Conditioned space
Are the ducts insulated? Yes
Are the ducts sealed? Yes

Hot water system

Fuel: Piped natural gas
Installation date:
Energy factor (between 0 and 1): 0.55

Boiler

Does the boiler also provide domestic hot water: No - I have a separate boiler and water heater

For more information on technical terms and units of measure, please visit: homeenergyscore.gov.

Score ID: 123456789
homeenergyscore.gov

Worth Noting....

- Homeowners are NOT homogeneous
 - Different interests; different reactions
- It's not one piece but the whole program – score, information, in person connection, easy access to trusted contractors, and a mix of incentives
 - “I loved the fact that you had an express/rush service combining energy audit with a bid and approved contractors waiting. It made it very easy to make upgrade for attic insulation and the rebate incentives made it a no brainer. ”

Key Observations from Pilot Partners

- Meaningful, accurate, specific recommendations are very helpful
- Energy professional's advice is highly regarded and influential
- Many homeowners are excited by process, want to learn and see how home scores.
- Score alone is not enough – visuals, involvement in process, clear cost savings all help. Even better, use score as part of more comprehensive process.
- Given explanation, label and recommendations are easy to understand.

What Homeowners Found MOST USEFUL

- Knowing what to fix
 - “Learning of things that need fixing in my home I did not find on my own.”
- I learned something
 - “I like knowing how much energy I'm using and not wasting. The tips and recommendations will help me.”
- Connection to contractor/energy efficiency pro
 - “Help with finding contractor for attic sealing and insulation.”
 - “The home inspector was very knowledgeable and gave me dollar amounts that could be saved by following the given recommended improvements.”

Pilot Reactions and Results

“The Home Energy Score pilot did generate significant interest in our existing programs and many prior non-participants (approx. 35%) were served who otherwise may not have thought to call. Additionally, we had 43% implementation rate of HES participants vs. 33% for non-HES over same period to time”

-- Program Manager, Cape Light Compact

“The label is easy to read and understand.”

-- Pilot Homeowner

“Homeowners were excited to see how their house rated on the tool.”

-- Pilot Participant