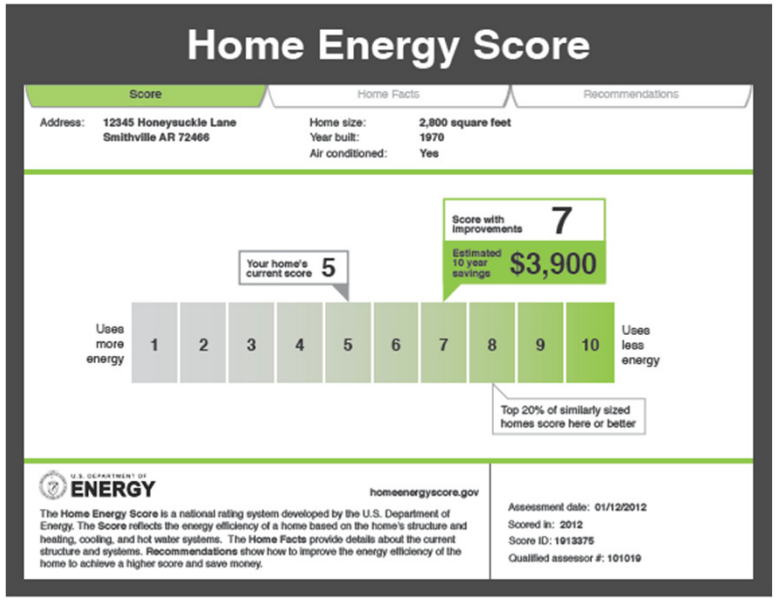
Home Energy Score: Program Update for Interested Stakeholders



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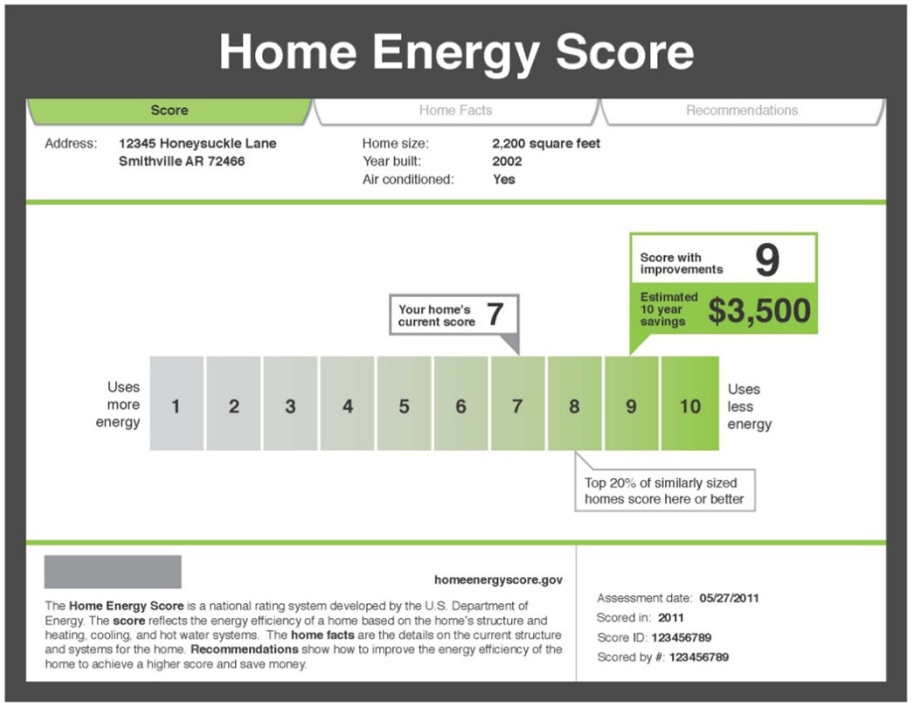
July 23, 2012

DOE's objectives for the Home Energy Score Program

- Strengthen the home energy improvement market
- Provide an affordable and credible means for homeowners to understand
  - their home's energy performance,
  - how their home compares to others in their area, and
  - how to improve its efficiency.
- Build on and complement existing home energy improvement efforts
- Help trained workers enter the private sector energy improvement market, as Weatherization work funded by the Recovery Act ramps down

Better Information: Home Energy Score



- Voluntary MPG rating for homes and recommendations for improvements
- Low cost service
  - 15 min. if done with other assessment
  - Less than 1 hour if stand-alone
- Improvements from Pilot feedback:
  - Simplified homeowner materials
  - Improved Home Energy Scoring Tool (Tool or Scoring Tool)
  - Revised Qualified Assessor training and testing
- June 2012: Began Phase 1 Implementation of the program
  - Utilities
  - Non-profits, contractors

Motivating investment in energy improvements

- **Homeowners appreciate straightforward, simple information**
  - 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* and possibly resale value
- **Consumers like to see the government seal on information provided**
  - Co-branding with local organizations is also effective

Key findings from DOE-funded focus groups, online testing, and social science review

How does the Home Energy Score program work?

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.

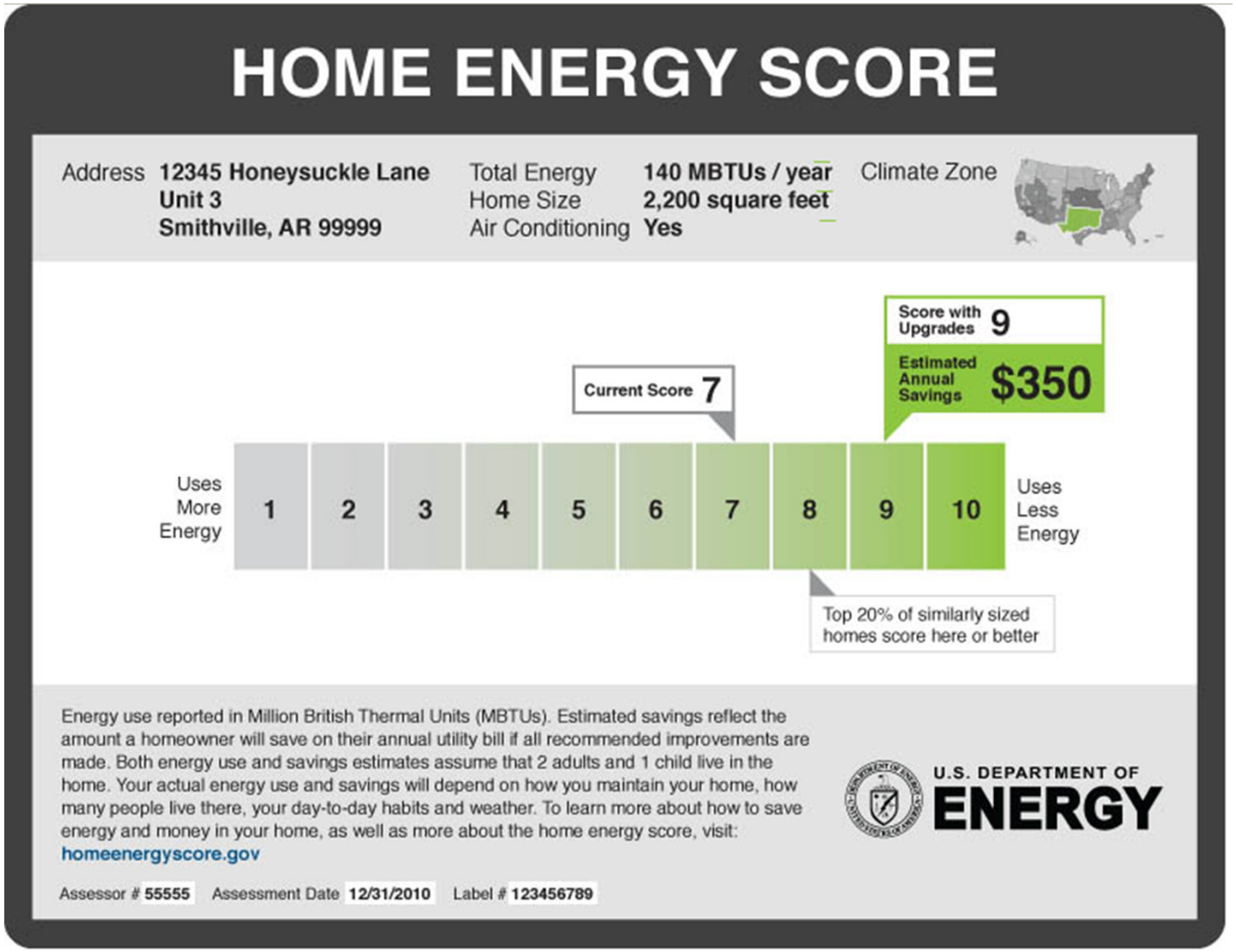
Who typically provides it?

- Qualified Assessors working under partnerships with local and state governments, utilities, non-profits, and other home performance industry organizations

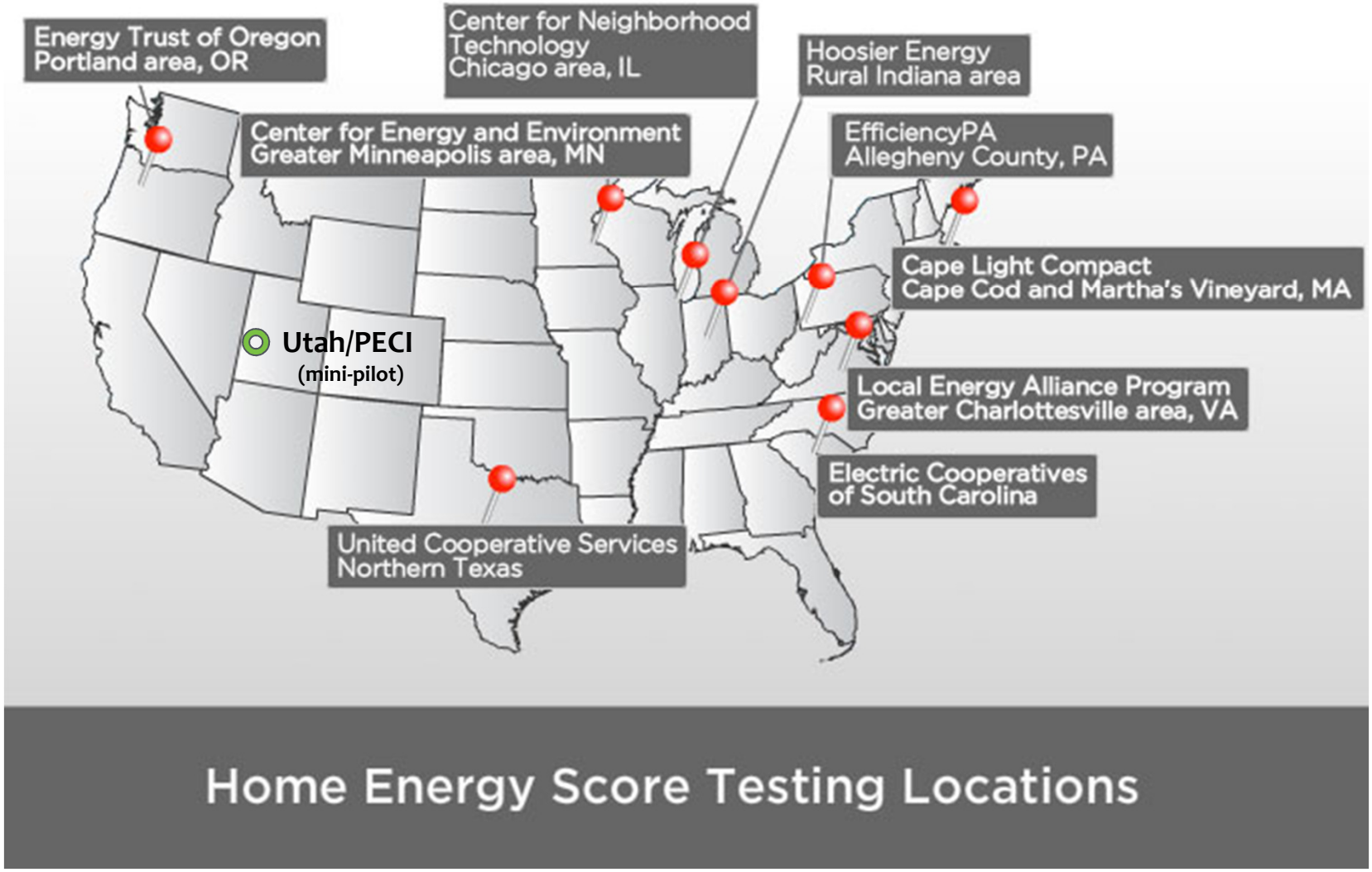
What does a homeowner get?

- Asset score (given standard operating assumptions)
- Home Facts: List of data collected
- Recommendations for improvements for now and later

Home Energy Score: Pilot version (Tested in 2011)

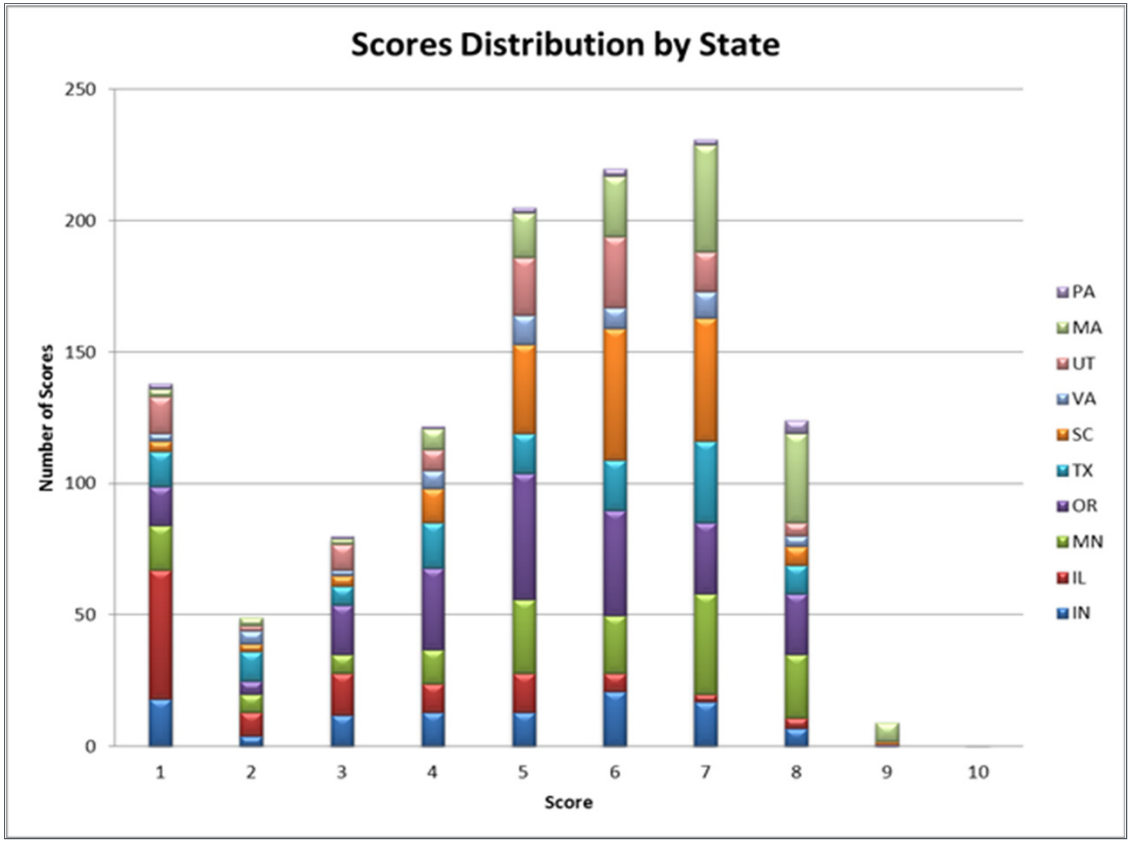


2011 Home Energy Score Pilots



Home Energy Score Pilots: January – June 2011

- 9 pilots in 2011
- 1,000+ homes assessed in total
- 31 qualified assessors
- In most cases, the scores reflected relatively “normal” distributions



Summary of 2011 Analysis & Pilot Findings

The **Score** is **credible, reliable,** and **replicable**.

- Homes, rescored by different assessors during the 2011 pilots, resulted in energy estimates within 10% of each another.
- Re-scores also came within 1 point of each other in all but one case.

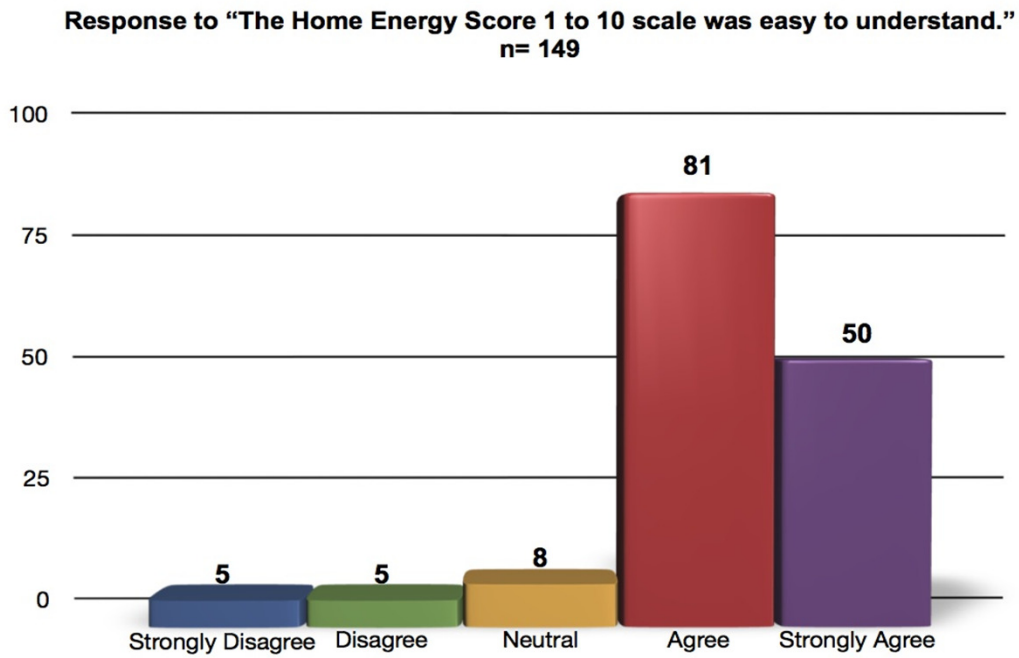
- The Scoring Tool consistently and correctly characterizes a home's energy performance on a 10-point scale.
  - Analysis showed that 90% of the time, a home will score within one point of its expected Score, given likely uncertainty and imprecision concerning a home's energy features.

- The Scoring Tool was sufficiently accurate in estimating energy use when compared to actual energy use.
  - The Scoring tool's predictions were compared to those of REM/Rate and Simple software tools.
  - The scoring tool performed as well or better in estimating energy use when compared to actual energy use.

Summary of Findings (Pilots to present, continued)

The Score is **transparent** and **easy-to-understand**.

- The majority of homeowners queried during pilots understood the 10-point scale.



The Score is **affordable**.

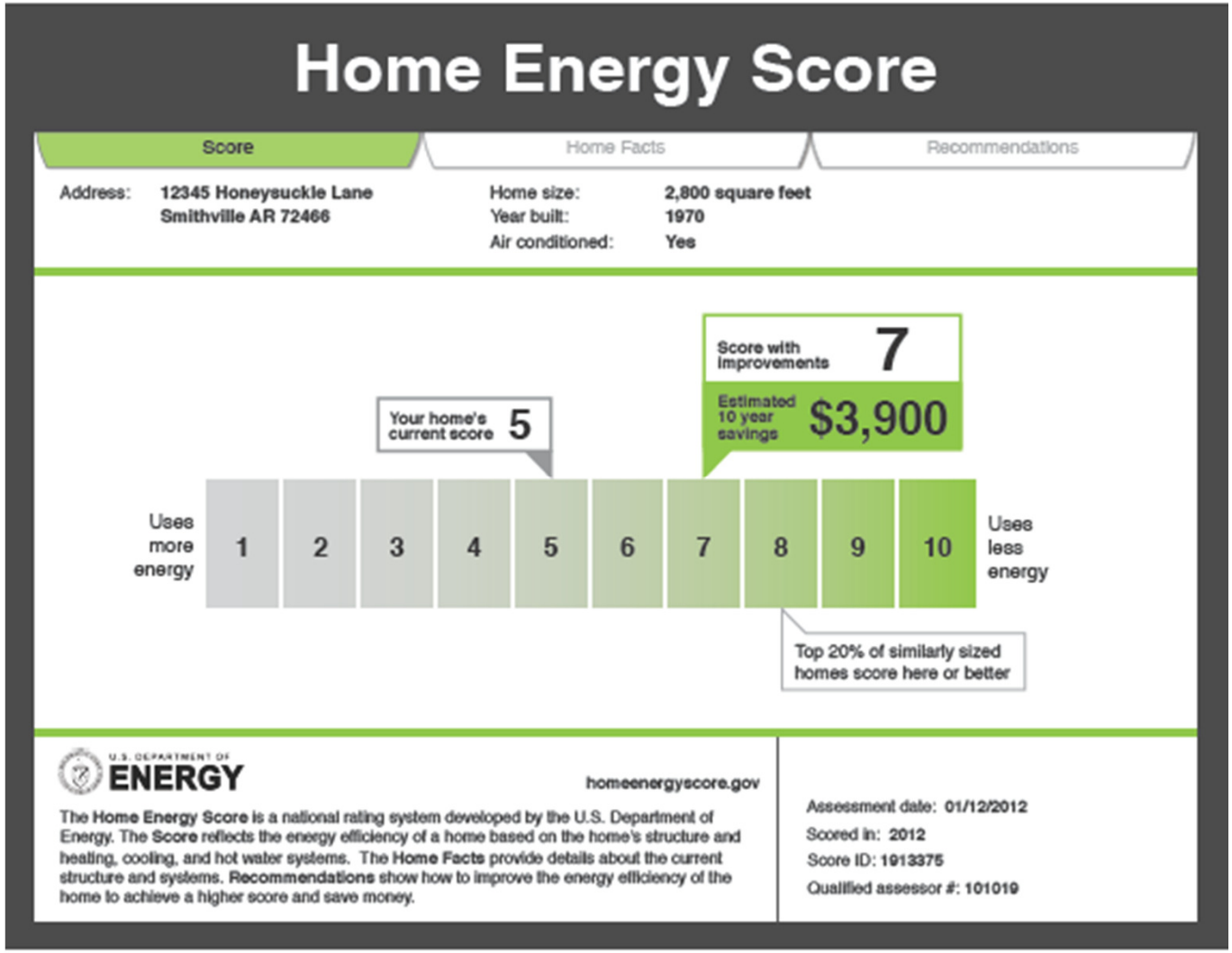
- The Score can be completed in ~ 15 minutes if done as part of a home energy audit and in < one hour if done as a stand-alone assessment.

Blower door ?

- Inclusion of *blower door* result does *not* significantly affect the Score and therefore will *not* be *required*.

Home Energy Score

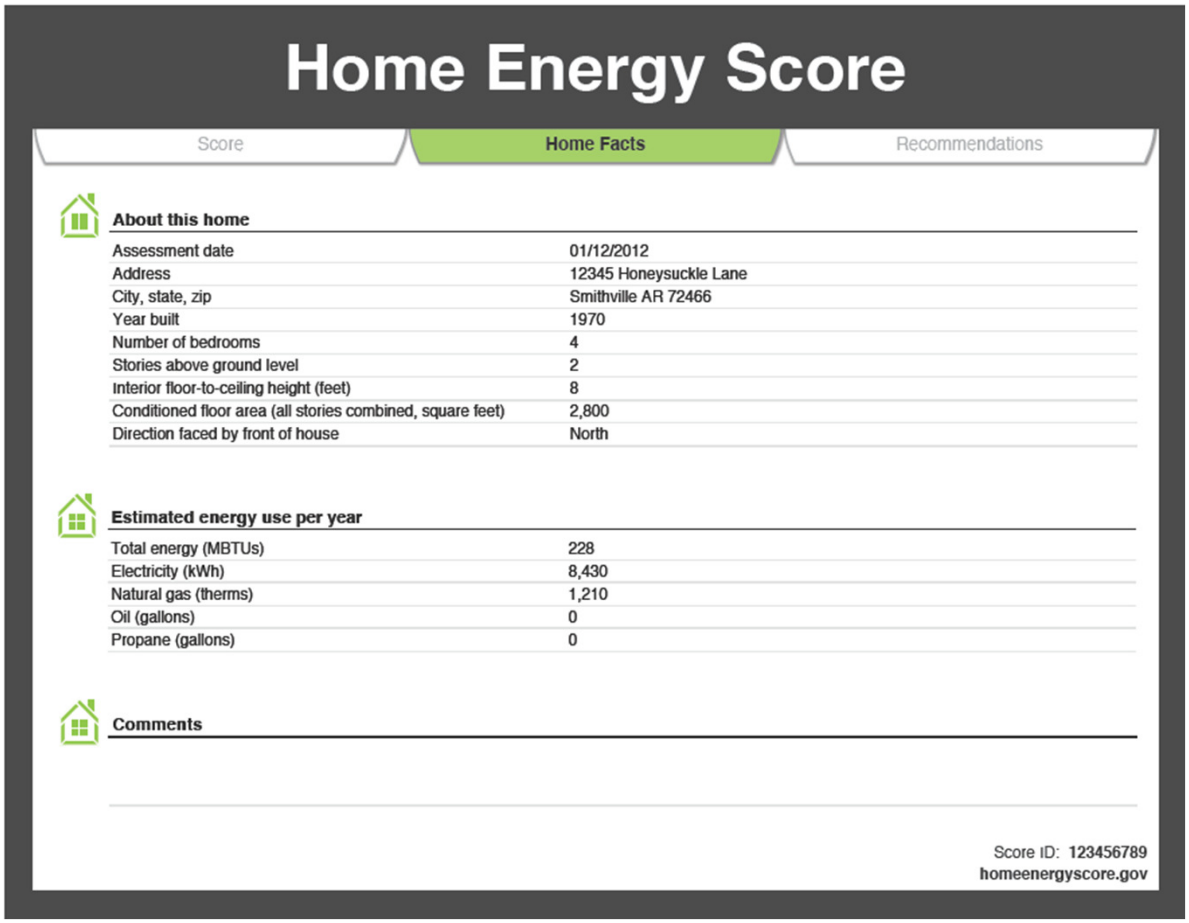
(1st of 3 documents provided to homeowner)



Home Facts

(2nd of 3 documents provided to homeowner)

"Home Facts" provides the inputs the assessor used and the Home Energy Scoring Tool's estimated energy use for the home, given standard conditions.



Home Energy Score

Score | **Home Facts** | Recommendations

About this home

Assessment date	01/12/2012
Address	12345 Honeysuckle Lane
City, state, zip	Smithville AR 72466
Year built	1970
Number of bedrooms	4
Stories above ground level	2
Interior floor-to-ceiling height (feet)	8
Conditioned floor area (all stories combined, square feet)	2,800
Direction faced by front of house	North

Estimated energy use per year

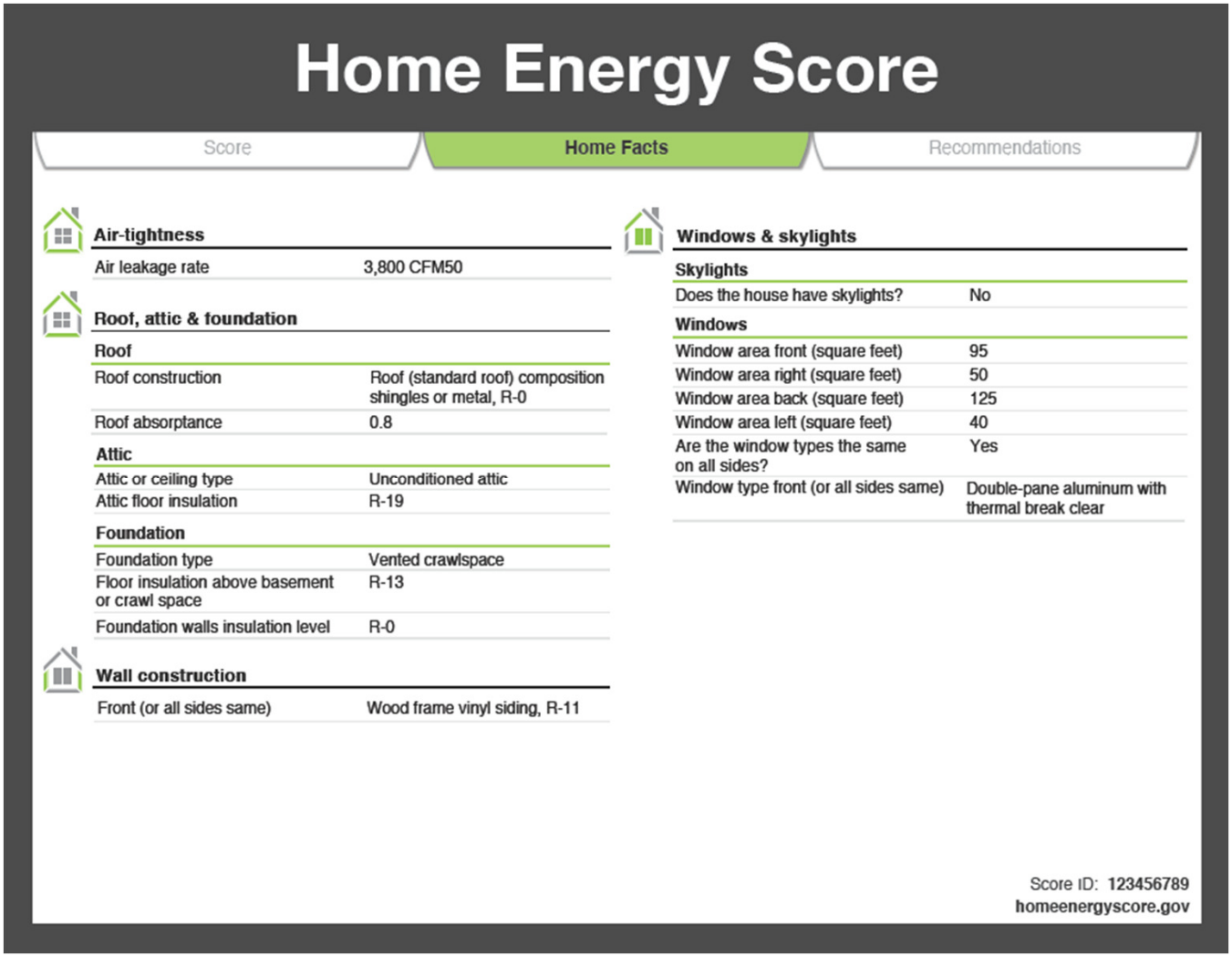
Total energy (MBTUs)	228
Electricity (kWh)	8,430
Natural gas (therms)	1,210
Oil (gallons)	0
Propane (gallons)	0

Comments

Score ID: **123456789**
homeenergyscore.gov

Home Facts

(continued, 2nd of 3 documents provided to homeowner)



Home Energy Score

Score | **Home Facts** | Recommendations

Air-tightness

Air leakage rate	3,800 CFM50

Roof, attic & foundation

Roof

Roof construction	Roof (standard roof) composition shingles or metal, R-0
Roof absorptance	0.8

Attic

Attic or ceiling type	Unconditioned attic
Attic floor insulation	R-19

Foundation

Foundation type	Vented crawlspace
Floor insulation above basement or crawl space	R-13
Foundation walls insulation level	R-0

Wall construction

Front (or all sides same)	Wood frame vinyl siding, R-11

Windows & skylights

Skylights

Does the house have skylights?	No

Windows

Window area front (square feet)	95
Window area right (square feet)	50
Window area back (square feet)	125
Window area left (square feet)	40
Are the window types the same on all sides?	Yes
Window type front (or all sides same)	Double-pane aluminum with thermal break clear

Score ID: **123456789**
homeenergyscore.gov

Home Facts *(continued)*

(continued, 2nd of 3 documents provided to homeowner)

Home Energy Score

Score | **Home Facts** | Recommendations

Systems

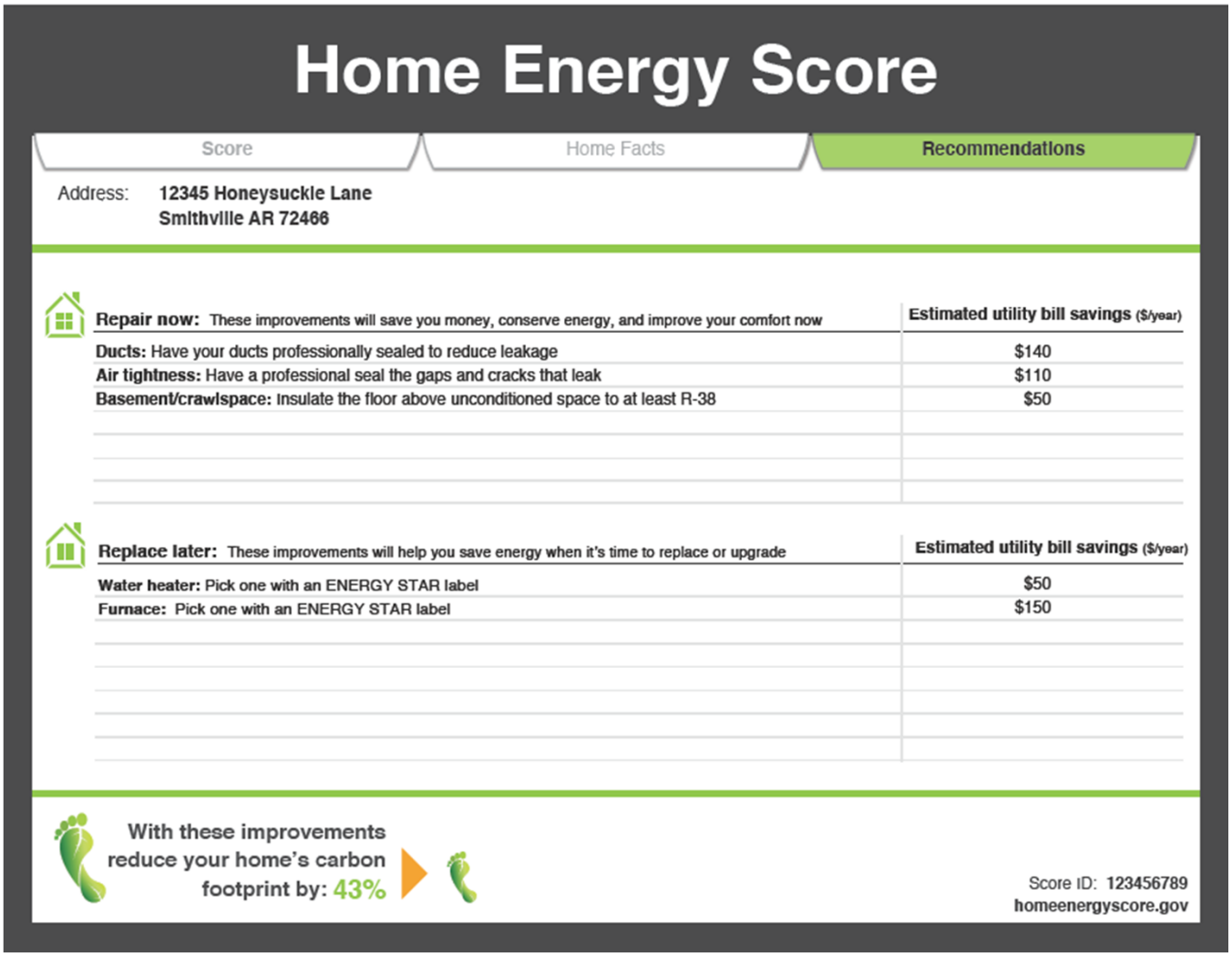
Heating system	
Type	Central gas furnace
Efficiency value	80.0 AFUE
Cooling system	
Type	Central air conditioner
Efficiency value	12.0 SEER
Ducts	
Duct location	Vented crawlspace
Are the ducts insulated?	Yes
Are the ducts sealed?	No/don't know
Hot water system	
Fuel	Piped natural gas
Efficiency value	0.59 EF

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

Score ID: **123456789**
homeenergyscore.gov

Recommendations

(3rd of 3 documents provided to homeowner)



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)
Ducts: Have your ducts professionally sealed to reduce leakage	$140
Air tightness: Have a professional seal the gaps and cracks that leak	$110
Basement/crawlspace: Insulate the floor above unconditioned space to at least R-38	$50

Replace later: These improvements will help you save energy when it's time to replace or upgrade	**Estimated utility bill savings** ($/year)
Water heater: Pick one with an ENERGY STAR label	$50
Furnace: Pick one with an ENERGY STAR label	$150

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

Score ID: 123456789
homeenergyscore.gov

Want to use your own recommendations?

- DOE will provide you a generic version of this page.
- The generic version will not include recommendations from the Tool or the carbon footprint calculation.
- It will alert the customer to "See recommendations provided separately."

Home Energy Score Partners and Qualified Assessors

- DOE is recruiting Partners to implement program
  - **Partners are:** Utilities, state/local government entities and energy non-profit organizations who can score at least *200 homes per year* and fulfill DOE's QA requirements
- 20 organizations have signed on to be Home Energy Score Partners
- 106 Qualified Assessor candidates are in the process of training and/or taking test
- 34 candidates have passed both parts of test and can now score homes

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 online
- Application Programming Interface (API) is now available to software developers and providers
  - Allows seamless link to the Tool from other software

Next Steps for the Program

- Improve program administration, materials, and delivery
- Recruit additional partners, including some with different types of implementation plans
- Assist partners in analyzing data associated with different weather stations
- Make additional refinements to Home Energy Scoring Tool
- Test software programs that use the Home Energy Scoring Tool API
- Evaluate effectiveness of Home Energy Score in motivating investments in energy improvements
- Reconsider assessor requirements
- Assess the effectiveness and feasibility of current quality assurance system

Partnering with DOE on the Home Energy Score

Who is eligible to partner?

- Utilities, state/local government entities, clean energy non-profit organizations
- Industry and trade organizations…

…with the program infrastructure for:

- Fulfilling DOE's requirements for Quality Assurance

and

- Delivery of energy assessments for residential customers or homeowners, or
- Coordination with or management of contractors that meet the criteria required to become a Qualified Assessor.

Partner Benefits

- **Take advantage of a quick, simple sales tool for home performance upgrades**
  - Score, Recommendations, and Home Facts
    - DOE seal can be helpful in selling idea of energy improvements
    - Flexible and customizable
  - Additional homeowner materials and *homeenergyscore.gov* website
- **Get free access to DOE's nationally recognized Scoring Tool**
  - Application Programming Interface (API) now available
  - Applications for use on handheld devices under development (e.g., MN pilot) and offered free of charge to initial Partners
- **Be an early adopter of a transformative nation-wide program**
- **Enjoy positive PR for your organization**

Partner Benefits

- **Your own account manager and technical staff**
  - Personal account managers can assist you in developing your program and interacting with the DOE team and other Partners
    - For the first 2-3 months, one DOE project manager will provide 5-10 hours of assistance monthly. An industry technical expert will provide 3-5 hours monthly assistance to help with training, testing, and qualifying your Assessors as well as to answer Scoring Tool questions.
    - Hours will be reduced as HEScore is streamlined into your existing operations.
- **Provide your feedback to help DOE improve the program**
  - Ability to help guide future development of Home Energy Score
- **Share lessons learned and take part in evaluating the program**
  - Networking opportunities with other Partners (webinars, calls and meetings)
  - Link to other DOE programs (Home Performance with ENERGY STAR , Building America, Better Buildings Neighborhood Program, etc.)

Partner Responsibilities

- **Sign the partnership agreement**
  - Adhere to DOE program guidelines including rules on use of the Home Energy Score tool and label
- **Score a minimum of 200 homes annually**
  - Most Partners will incorporate HEScore into their ongoing residential EE programs.
- **Manage Qualified Assessors participating in their local program**
  - Designate a primary point of contact for participating qualified assessors and facilitate the delivery of required certification documents to DOE
  - Administer the Home Energy Score qualification training tests
  - Mentor Qualified Assessors
  - Track Qualified Assessor participation and performance in the program

Partner Responsibilities *(continued)*

- **Conduct Quality Assurance reviews on a sample of scored homes**
  - Require 5 percent of homes to be rescored by a different quality assurance provider or qualified assessor
- **Promote the Home Energy Score**
  - Market the benefits of the score to homeowners
  - Provide the score, home facts, and recommendations to homeowners
  - Incorporate DOE or local tips and recommendations for improvements
- **Collaborate with DOE on delivery and continuous improvement of the Home Energy Score Program**
  - Provide feedback quarterly on best practices and lessons learned
  - Carry out some type of local evaluation and/or participate in DOE's national evaluation efforts (if possible)
- **Participate in monthly webinars with DOE staff and other HEScore Partners**
- **Participate at annual HEScore Partner Summit (if feasible)**
  - Planned for late summer/fall 2013

Criteria for Home Energy Score Qualified Assessors

All Qualified Assessors must complete the following prior to getting access to the Tool and providing Home Energy Scores to homeowners:

1. **Provide proof of 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 Home Energy Score Multiple Choice online Test**
   Covers buildings science and Home Energy Score program information

3. **Pass the Home Energy Score** online **Scoring Test**
   - Candidate will be allowed temporary access to the scoring tool to score 3 sample homes in a test environment (data inputs provided, with some calculations necessary)

Note: Individual assessors (energy auditors, contractors, etc.) are not eligible to be Home Energy Score Partners. To participate, individual assessors must work through DOE Partners.

Partners: What happens next?

Review

Review Partnership Requirements

- Terms of Participation
- Qualified Assessor Guidance
- Quality Assurance Requirements

DOE sends Partnership documents

Join

Sign Partnership Agreement

- Complete the implementation plan
- Test Tool
- Train Assessors

DOE provides access to training, testing & the Tool

Implement

Support Home Energy Score

- Participate on a DOE kick-off call or webinar
- Integrate training and marketing materials
- Begin scoring homes

DOE holds kick off call with Partner

For more information

Questions or comments?

Contact **Joan Glickman** at

homeenergyscore@ee.doe.gov

Visit: homeenergyscore.gov to watch recorded webinars with Q&A and get more information on the program.