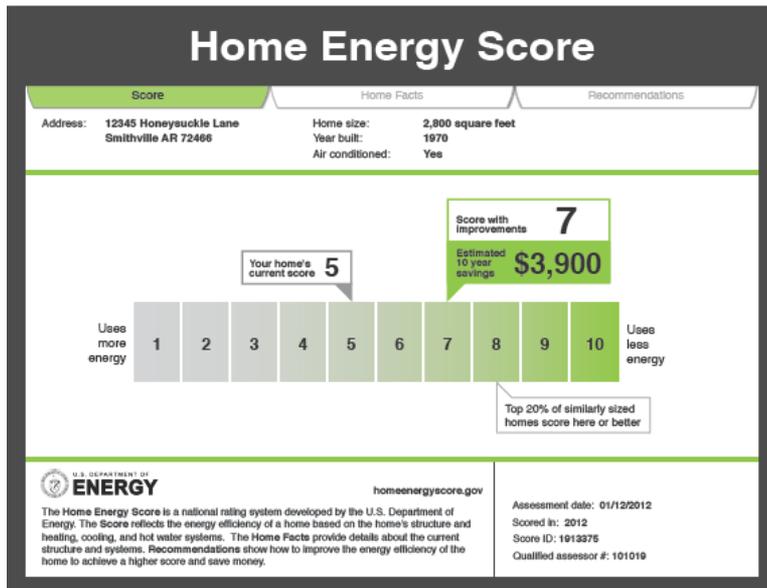


# Home Energy Score Program: Update and Overview for Potential Partners

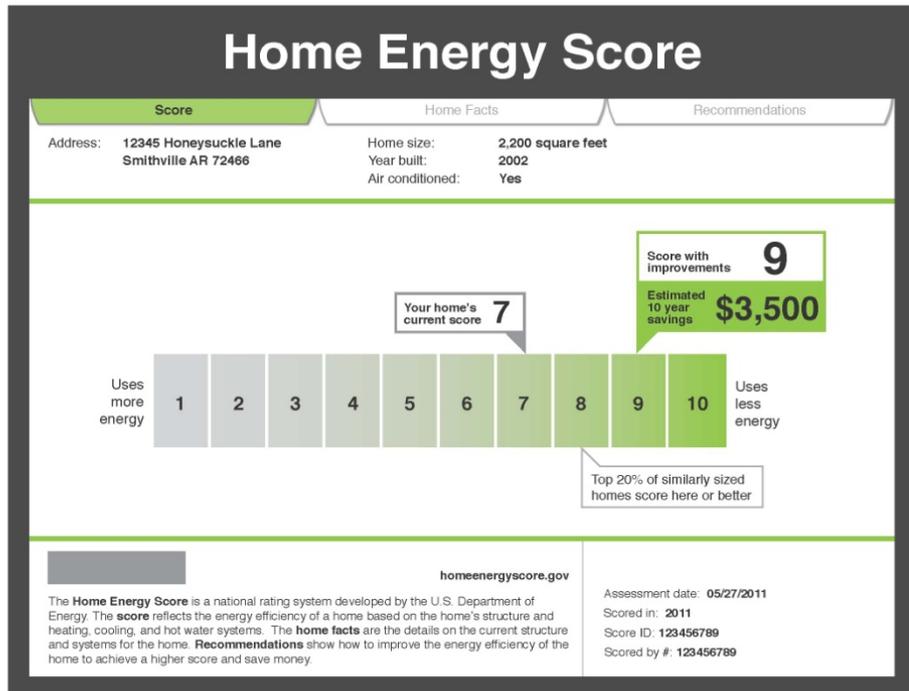


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July 2012

# 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 / recommendations for improvement
- Low cost service by partners
  - 15 minutes if in concert with other assessment
  - Less than 1 hour if stand-alone
- Improvements from pilot feedback:
  - Simplified homeowner materials
  - Improved scoring tool
  - Revised 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 provider also can be 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.

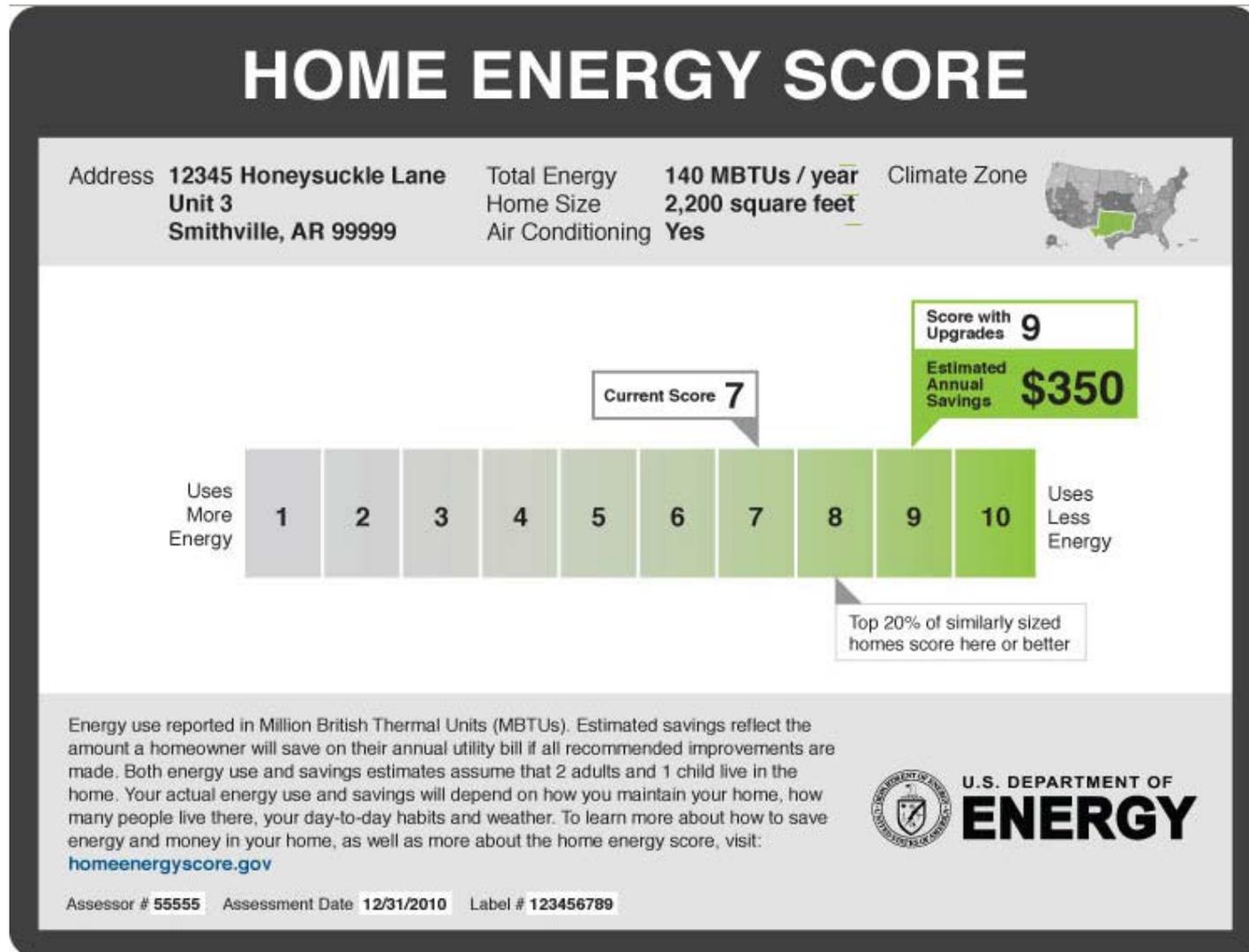
## Who typically provides it?

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

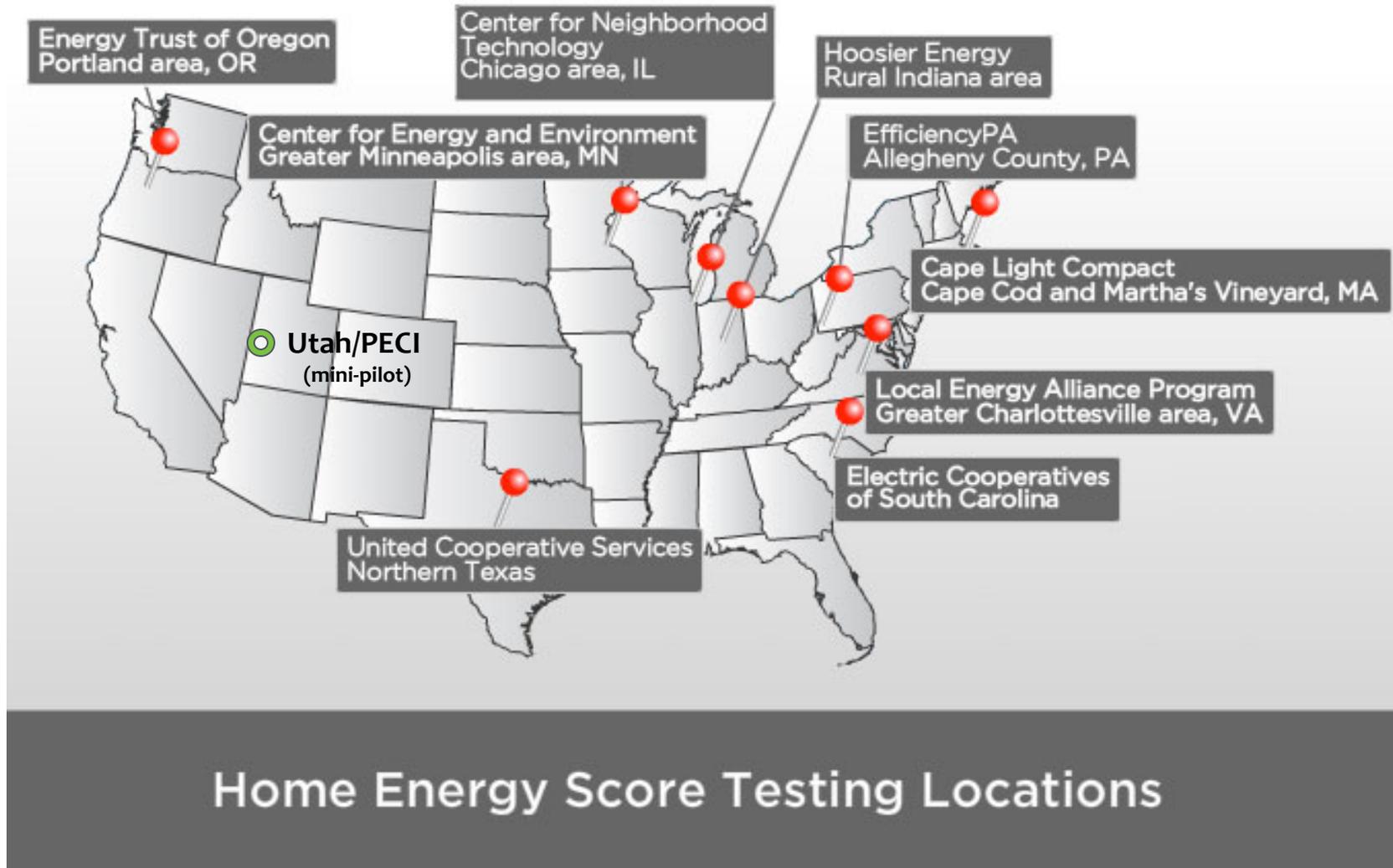
## What does a homeowner get?

- 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: Jan. – 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

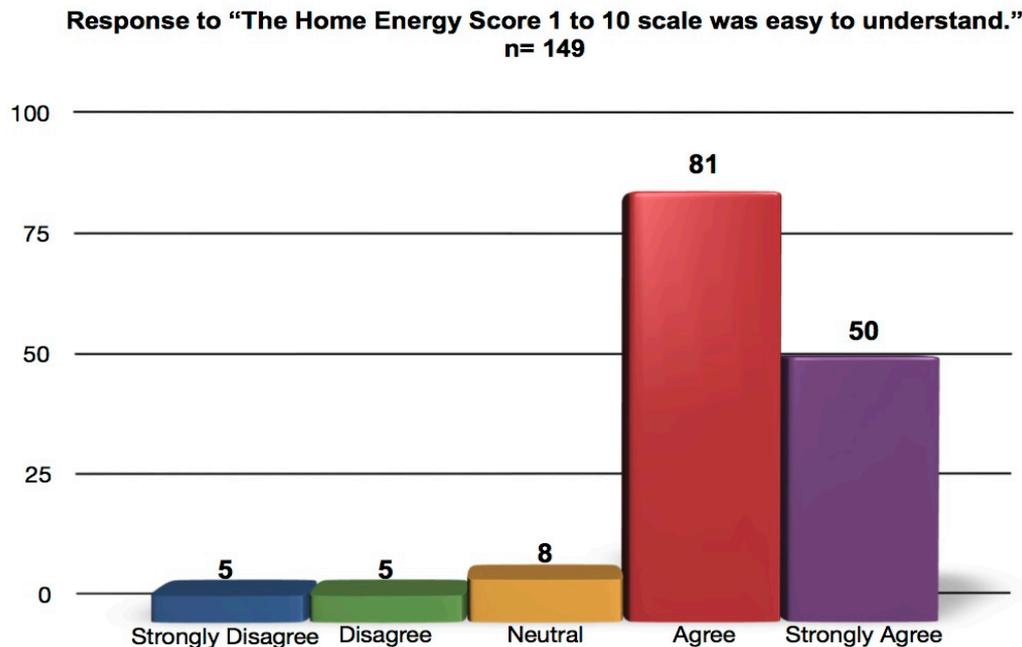
## The score is credible, reliable, & replicable.

- Homes, rescored by different assessors during 2011 pilots, resulted in energy estimates within 10 percent of each another, and scores 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 1 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.
  - 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.

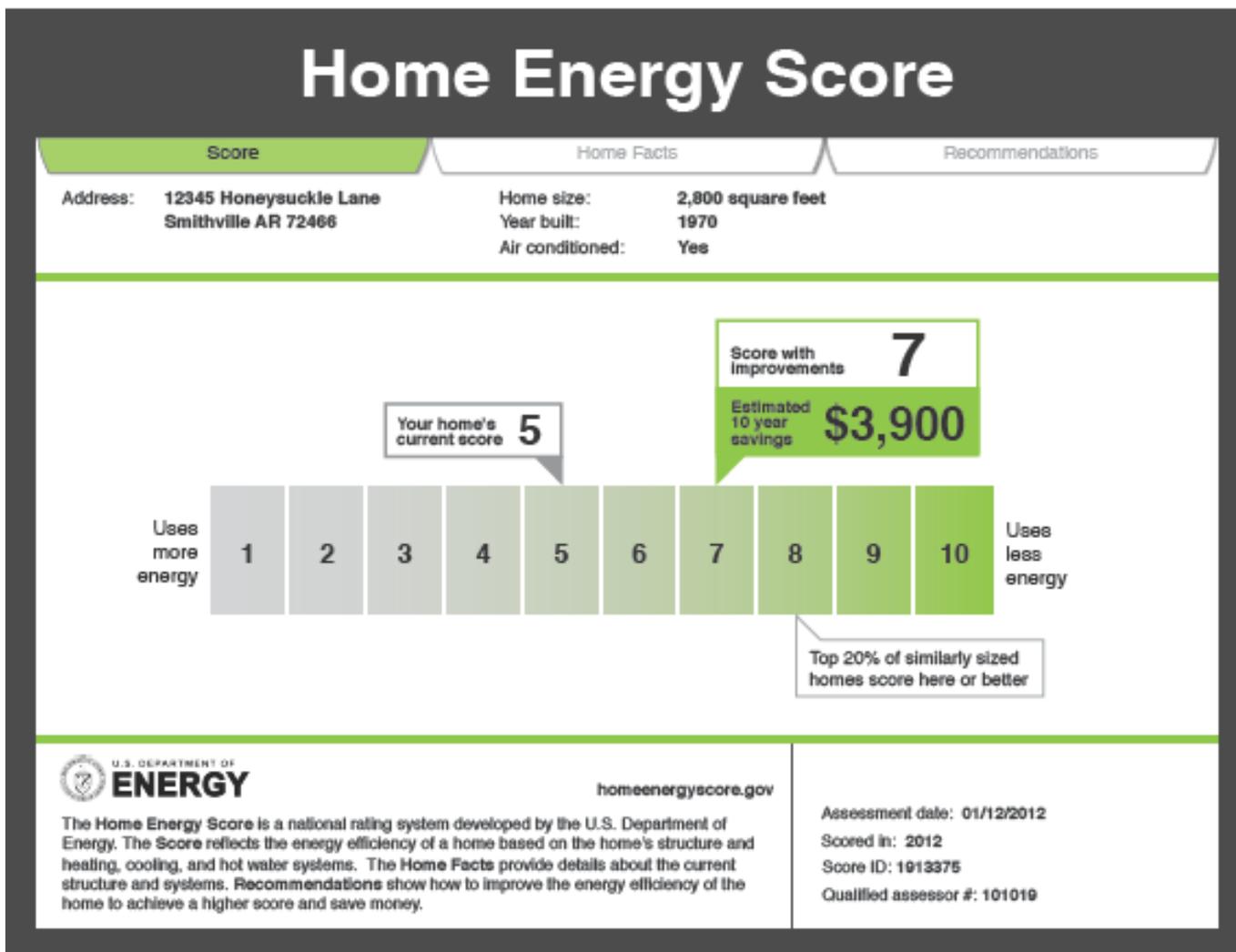


## The score is affordable.

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

# Home Energy Score: "Score"

(1st of 3 documents provided to homeowner)



# Home Facts

(2<sup>nd</sup> 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**

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Score ID: 123456789  
[homeenergyscore.gov](http://homeenergyscore.gov)

# Home Facts

(continued, 2<sup>nd</sup> of 3 documents provided to homeowner)

## Home Energy Score

Score	Home Facts	Recommendations
	<b>Air-tightness</b> Air leakage rate 3,800 CFM50	
	<b>Roof, attic &amp; foundation</b> <b>Roof</b> Roof construction Roof (standard roof) composition shingles or metal, R-0 Roof absorptance 0.8 <b>Attic</b> Attic or ceiling type Unconditioned attic Attic floor insulation R-19 <b>Foundation</b> Foundation type Vented crawlspace Floor insulation above basement or crawl space R-13 Foundation walls insulation level R-0	
	<b>Wall construction</b> Front (or all sides same) Wood frame vinyl siding, R-11	
		<b>Windows &amp; skylights</b> <b>Skylights</b> Does the house have skylights? No <b>Windows</b> 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, 2<sup>nd</sup> 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](http://homeenergyscore.gov)

Score ID: 123456789  
[homeenergyscore.gov](http://homeenergyscore.gov)

# Recommendations

(3<sup>rd</sup> of 3 documents provided to homeowner)

## Home Energy Score

ScoreHome FactsRecommendations

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

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

**Estimated utility bill savings (\$/year)**

<b>Ducts:</b> Have your ducts professionally sealed to reduce leakage	\$140
<b>Air tightness:</b> Have a professional seal the gaps and cracks that leak	\$110
<b>Basement/crawlspace:</b> 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)**

<b>Water heater:</b> Pick one with an ENERGY STAR label	\$50
<b>Furnace:</b> Pick one with an ENERGY STAR label	\$150



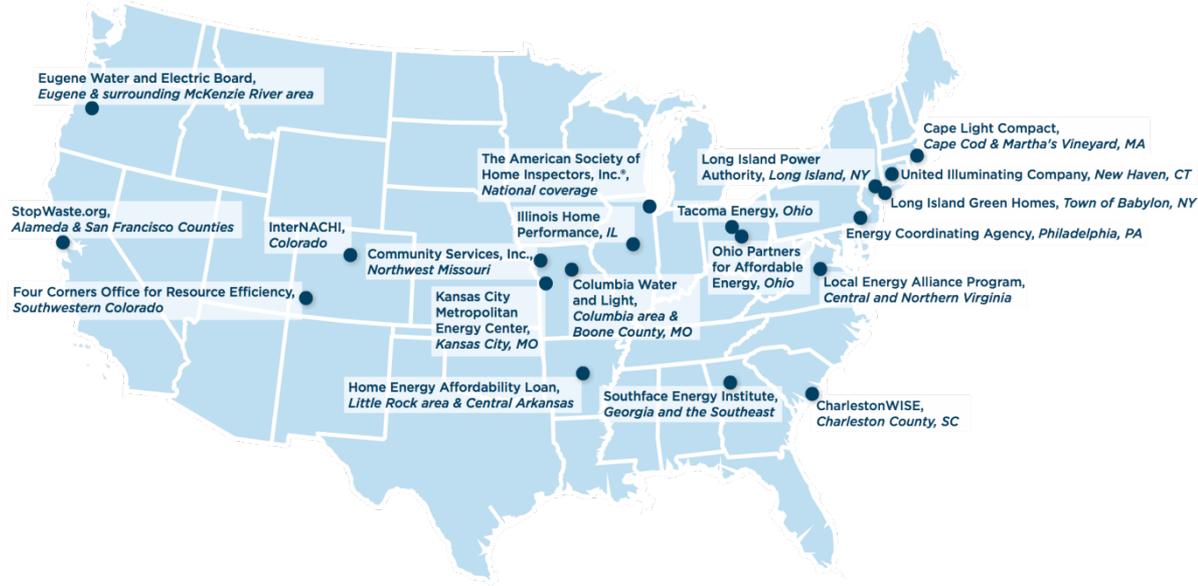
With these improvements  
reduce your home's carbon  
footprint by: **43%**  

Score ID: 123456789  
[homeenergyscore.gov](http://homeenergyscore.gov)

- If you are providing your own recommendations, we will provide a generic version of this page for your use.
- The generic version will not include recommendations from the tool or 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
  - 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 signed on to be Home Energy Score Partners to date
- 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



● Home Energy Score Partner Location

# 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 tips
    - DOE seal can be helpful in selling idea of energy improvements
    - Flexible, customizable
  - Additional homeowner materials and [homeenergyscore.gov](http://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

- **Take advantage of having a personal account managers 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, Partners can expect to have one DOE project manager provide 5-10 hours of assistance monthly and another technical staffer provide 3-5 hours monthly to assist with training, testing, and qualification of Assessors as well as scoring tool questions.
    - Hours will be reduced as HEScore is streamlined into your existing operations.
- **Provide input as a Partner in program development**
  - 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 (calls and meetings)
  - Link to other DOE programs (Home Performance with ENERGY STAR , Building America, Better Building Neighborhood Program)

# 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**
  - This requirement may be adjusted up or down based on the partner's customer base
  - 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:

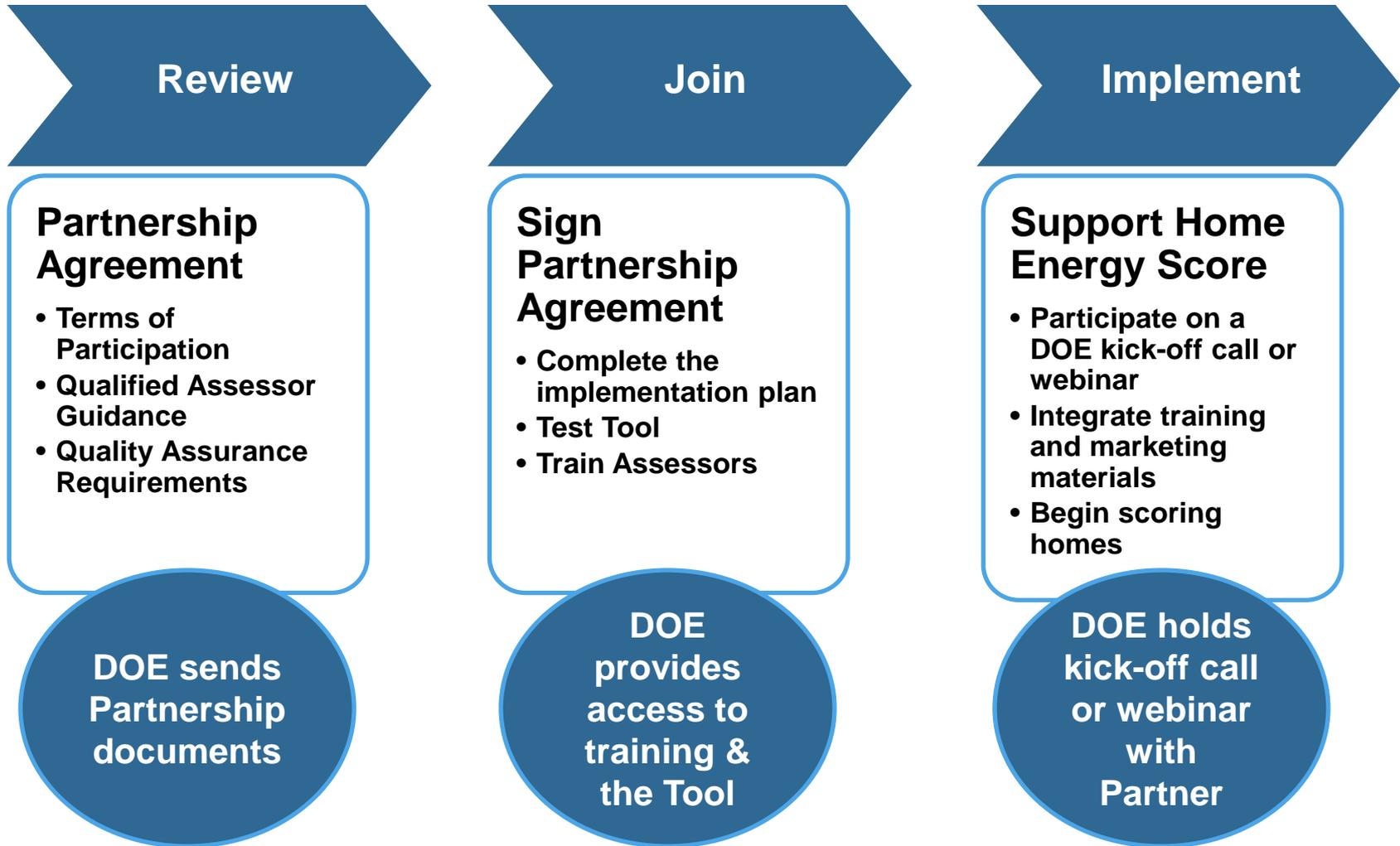
- 1. Provide proof of certification from one or more of the following:**
  - Building Performance Institute's (BPI) Building Analyst certification
  - Residential Energy Services Network (RESNET) certified Rater
- 2. Pass the Home Energy Score Multiple Choice On-Line Test (covers buildings science as well as Home Energy Score program information)**
- 3. Pass the 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.

# 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

# Partners: What happens next?



# For more information

Questions or comments?

Contact **Joan Glickman** at

homeenergyscore@ee.doe.gov

Visit: [homeenergyscore.gov](https://homeenergyscore.gov) to watch recorded webinars with Q&A and get more information on the program.