Home Energy Score Program: Update and Overview for Potential Partners

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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*
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)

Address: 12345 Honeysuckle Lane
         Unit 3
         Smithville, AR 99999

Total Energy: 140 MBTUs / year
Air Conditioning: Yes

Home Size: 2,200 square feet

Climate Zone

Score with Upgrades: 9
Estimated Annual Savings: $350

Current Score: 7

 Uses More Energy

1 2 3 4 5 6 7 8 9 10

 Uses Less Energy

Top 20% of similarly sized homes score here or better

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

Assessor #: 55555  Assessment Date: 12/31/2010  Label #: 123456789
2011 Home Energy Score Pilots

- Energy Trust of Oregon Portland area, OR
- Center for Neighborhood Technology Chicago area, IL
- Hoosier Energy Rural Indiana area
- EfficiencyPA Allegheny County, PA
- Cape Light Compact Cape Cod and Martha’s Vineyard, MA
- Local Energy Alliance Program Greater Charlottesville area, VA
- Electric Cooperatives of South Carolina
- United Cooperative Services Northern Texas
- Center for Energy and Environment Greater Minneapolis area, MN
- Utah/PECI (mini-pilot)

Home Energy Score Testing Locations
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.
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” 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**

<table>
<thead>
<tr>
<th>Score</th>
<th>Home Facts</th>
<th>Recommendations</th>
</tr>
</thead>
</table>

**Air-tightness**
- Air leakage rate: 3,800 CFM50

**Roof, attic & foundation**
- **Roof**
  - Roof construction: Roof (standard roof) composition shingles or metal, R-0.6
  - Roof absorbance: 0.6
- **Attic**
  - Attic or ceiling type: Unconditioned attic
  - Attic floor insulation: R-19
- **Foundation**
  - Foundation type: Vented crawl space
  - 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): 65
  - 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 Energy Score

## 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**: 0.56 EF

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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)*

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**Home Energy Score**

| Address: 12345 Honeysuckle Lane  
| Smithville AR 72486 |

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Estimated utility bill savings ($/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ducts: Have your ducts professionally sealed to reduce leakage</td>
<td>$140</td>
</tr>
<tr>
<td>Air tightness: Have a professional seal the gaps and cracks that leak</td>
<td>$110</td>
</tr>
<tr>
<td>Basement/crawlspace: Insulate the floor above unconditioned space to at least R-36</td>
<td>$50</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Estimated utility bill savings ($/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water heater: Pick one with an ENERGY STAR label</td>
<td>$50</td>
</tr>
<tr>
<td>Furnace: Pick one with an ENERGY STAR label</td>
<td>$150</td>
</tr>
</tbody>
</table>

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

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- 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
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 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
• 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?

**Review**

- **Partnership Agreement**
  - Terms of Participation
  - Qualified Assessor Guidance
  - Quality Assurance Requirements

**Join**

- **Sign Partnership Agreement**
  - Complete the implementation plan
  - Test Tool
  - Train Assessors

**Implement**

- **Support Home Energy Score**
  - Participate on a DOE kick-off call or webinar
  - Integrate training and marketing materials
  - Begin scoring homes

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- DOE sends Partnership documents
- DOE provides access to training & the Tool
- DOE holds kick-off call or webinar with Partner
Questions or comments?
Contact **Joan Glickman** at
homeenergyscore@ee.doe.gov

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