

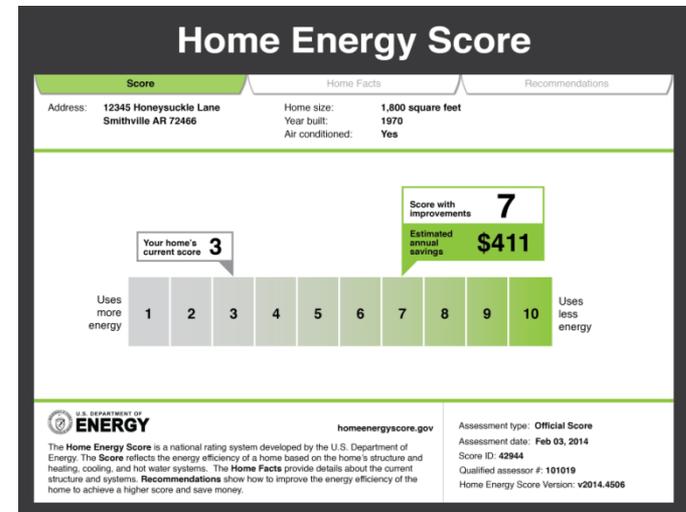
Home Energy Score Update: New Simulation Training & Credential Requirements for Assessors

March 4, 2015
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- Welcome
- Program Overview and Update
- New Assessor Requirements
- Training Platform Demo
- Home Energy Scoring Tool v. 2015
- In the Works
- How to Participate
- Questions/Comments

The U.S. Department of Energy created the Home Energy Score to serve as a nationally standardized “miles-per-gallon” rating for homes

- ✓ Offers homeowners **affordable, reliable, easy way** to understand homes’ energy performance
- ✓ Available at **no-cost** to program providers
- ✓ Intended to **motivate homeowners** to invest in residential energy efficiency
 - Simple and action-oriented
 - Ability to document investment in energy efficiency using the post-improvement score



Home Energy Score website: www.homeenergyscore.gov

Home Energy Score

Score

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

Home Facts

Home size: **1,800 square feet**
Year built: **1970**
Air conditioned: **Yes**

Recommendations

Your home's
current score **3**

Score with
improvements **7**

Estimated
annual
savings **\$411**

Uses
more
energy

1

2

3

4

5

6

7

8

9

10

Uses
less
energy



U.S. DEPARTMENT OF
ENERGY

homeenergyscore.gov

The **Home Energy Score** is a national rating system developed by the U.S. Department of Energy. The **Score** reflects the energy efficiency of a home based on the home's structure and heating, cooling, and hot water systems. The **Home Facts** provide details about the current structure and systems. **Recommendations** show how to improve the energy efficiency of the home to achieve a higher score and save money.

Assessment type: **Official Score**

Assessment date: **Feb 03, 2014**

Score ID: **42944**

Qualified assessor #: **101019**

Home Energy Score Version: **v2014.4506**

- Takes an hour or less to complete
- Can be generated by home inspectors, contractors, utilities, others
- This free on-line tool can be used directly or linked to other software tools
- No reporting requirements, all automated

“Home Facts” section documents the data inputs the Assessor collected as well as the Home Energy Scoring Tool’s estimated energy use for the home, given standard conditions.

Home Energy Score

Score



About this home

Assessment date
Address
City, state, zip
Year built
Number of bedrooms
Stories above ground level
Interior floor-to-ceiling height (feet)
Conditioned floor area (all stories combined, sq ft)
Direction faced by front of house



Estimated energy use per year

Total (MBTUs)
Score basis (MBTUs)
Electricity (kWh)
Natural gas (therms)



Comments

Home Energy Score

Score

Home Facts

Recommendations



Air-tightness

Air leakage rate 4,200 CFM50



Roof, attic & foundation

Roof
Roof construction Roof (Standard Roof): Composition Shingles or Metal: R-0
Roof color Medium Dark

Attic
Attic or ceiling type Unconditioned Attic
Attic floor insulation R-3

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



Wall construction

Front (or all sides same) Wood Frame: Wood,Asbestos,Fiber Cement,Composite Shingle, or Masonite Siding: R-19



Windows & skylights

Skylights
Does the house have skylights?
Windows
Window area front of house
Window area back of house
Window area right side of house
Window area left side of house
Front (or all sides same)

Home Energy Score

Score

Home Facts



Systems

Heating
Type Central gas furnace
Efficiency value 0.85 AFUE

Cooling
Type Central air conditioner
Efficiency value 12 SEER

Ducts
Duct location Unconditioned attic
Are the ducts insulated? No
Are the ducts sealed? No
Percent in this location 75%
Duct location Conditioned space
Are the ducts insulated? No
Are the ducts sealed? No
Percent in this location 25%

Hot water
Fuel Natural gas
Efficiency value 0.62 EF

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

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
Attic : Increase attic floor insulation to at least R-38	179
Ducts : Add insulation around ducts in unconditioned spaces to at least R-6	53
Ducts : Have your ducts professionally sealed to reduce leakage	133

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

	Estimated utility bill
Siding : Add insulating sheathing underneath it to R-5	33
Furnace : Pick one with an ENERGY STAR label	32
Central Air : Pick one with an ENERGY STAR label	45

 With these improvements reduce your home's carbon footprint by: **23%** 

Score home

✓ Use tool-generated recommendations

- Cost-effective improvements
- “Repair now” or “Replace later”

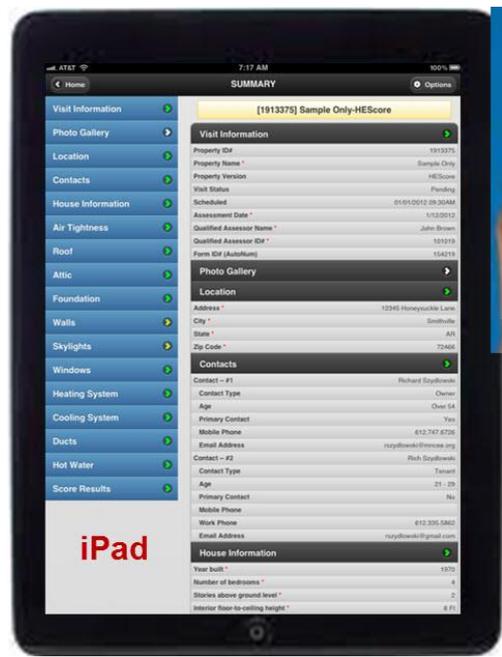
OR

✓ Provide your own recommendations

- Tool can generate “Upgrade Score” based on custom recommendations

- ✓ Third-party software companies can license the Home Energy Score API to exchange data between their software and the tool
- ✓ Eliminates need for double data entry
- ✓ API integration already completed by:
 - Cake Systems
 - EnergySavvy
 - Energy Soft
 - Optimizer
 - Spirit Foundation
 - United Illuminating

API now available in HPXML (data input) in addition to standard format



Images courtesy Richard Szydlowski, Minnesota Center for Energy and Environment

Implementation Highlights

- ✓ Nearly 18,000 homes scored since 2012
- ✓ 90+ Active Assessors
- ✓ Score easily integrated into existing residential programs and other services
 - Simple data collection mechanism
 - Useful analytical tool for program administrators and utilities
- ✓ Homeowners understand the simple 1-10 scale
- ✓ Statewide adoption
 - CO, CT, MO, OR, VT with others exploring adoption (e.g. AL, AR, MA, NH, NY)
- ✓ Local governments considering Score for use in disclosure policies

HOME ENERGY SCORES
COMPLETED

1 7 8 1 4

As of March 1, 2015



Score can be provided through many avenues...

✓ Home Energy Score is a flexible offering that can be integrated into a variety of different programs and efforts.

✓ Some examples in use:

- Home Performance with ENERGY STAR
e.g., Columbia Water and Light (MO), CT utilities

- Direct Install programs
e.g., Focus on Energy (WI)

- Utility rebate programs
e.g., New Jersey Natural Gas

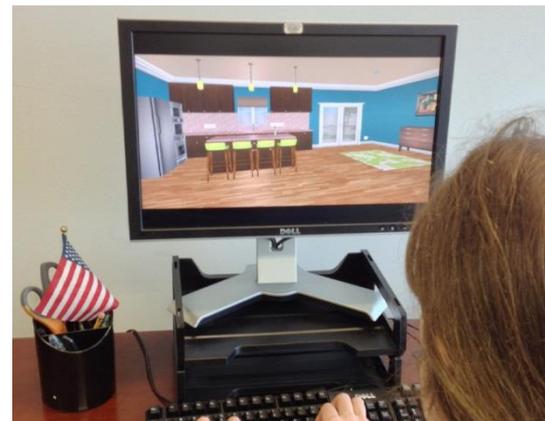
- Real estate transactions
e.g., State of Colorado

- And more.....



New Training and Testing Opens the Market to More Assessors

- ✓ This 3-D Tool was developed with significant input from outside experts & practitioners
 - Uses computer-based simulations to recreate a range of job-site scenarios
- ✓ DOE conducted in-classroom/in-the-field validation study
 - Confirmed effectiveness of simulation tool in determining a candidate's competency to deliver the Home Energy Score
- ✓ DOE now recognizes certifications from many different building-related organizations
- ✓ As a result...Many more building professionals will now be able to offer the Score.



New Assessor Requirements



Energy Efficiency & Renewable Energy

	Existing Qualification Requirements	New Qualification Requirements
Credentialing Pre-Requisites	<ul style="list-style-type: none"> • BPI Building Analyst • HERS Rater 	Current credentials recognized by leading building-related industry organizations (e.g., ASHI, BPI, InterNACHI, NAHI, NARI, NATE, RESNET)
Practical Test	Candidate uses the Home Energy Scoring Tool to score three homes; home characteristics are provided in written form	Candidate uses the Home Energy Score 3D Simulation Tool to retrieve home characteristic data and to score <ul style="list-style-type: none"> – Three “Practice/Challenge” Homes (80 or better) – Two Test Homes (90 or better)
Written Exam	Score of 80 or better on multiple choice test that includes 50 questions regarding building science as well as the Home Energy Score program	Score of 80 or better on multiple choice test comprised of 20 questions covering the Home Energy Score program only
Quality Assurance	5% of homes must be rescored under a DOE approved quality assurance plan	
Mentoring	None	First home scored with a mentor; counts toward quality assurance requirement. (Mentoring can be performed by either a QA appointee OR another Assessor with experience generating Home Energy Scores for at least 25 homes.)

Minimum Accepted Credentials

Organization	Minimum Credential
American Society of Home Inspectors (ASHI)	ASHI Inspector or Certified Inspector
Building Performance Institute (BPI)	Building Science Principles Certificate
International Association of Certified Home Inspectors (InterNACHI)	Home Energy Inspector
National Association of Home Inspectors (NAHI)	Certified Real Estate Inspector
National Association of the Remodeling Industry (NARI)	Green Certified Professional, Certified Remodeler, or Master Certified Remodeler
North American Technician Excellence (NATE)	Air Conditioning/Heat Pumps, Gas/Oil Heating, or Gas/Oil Hydronics
RESNET	HERS Rater

- ✓ Assessors must work with an existing Home Energy Score Partner
 - Refer to Partners page on our website
 - If no Partner in your area, work through a national Partner, e.g., BPI Rating Program at www.bpi.org/rater
 - Only Assessors working with a Home Energy Score Partner can score homes and gain access to the Home Energy Scoring Tool
 - ❑ The Home Energy Score Partner must provide DOE with the Assessor candidate's information (name, etc.) before the candidate can access the training & testing platform
- ✓ An Assessor candidate can take training and testing at their convenience
 - No proctor or registration is required to take the test
 - Unlimited access to the 3D Sim tool training scenarios
- ✓ Pass the Assessor exam (free)

3D Simulation Training Tool Demo

New version will be launched March 2015

The updated Scoring Tool will model

- 2 HVAC systems
- 2 roof/attic types
- 2 foundation types

The system will also model wood heat

- Wood stove (cord wood)
- Wood pellet furnace

What's Next for
Home Energy
Score?

Works

the

In

Up

and

Coming

- Connecticut: Integrating Score with utilities' *Home Energy Solutions* program
 - Plan on scoring 11,000 homes annually
 - Using the Score to help track progress toward the state's 80% weatherization goal for 2030
- Colorado: Linking the Score to incentives at point of sale or refinance
 - \$750 per score jump, up to \$3,000
 - Capitalize on homebuyers' willingness to invest in efficiency at point of sale
- Vermont: Adopting Home Energy Score as a key component of the state's voluntary labeling program
 - Using multiple metrics from the Home Energy Scoring Tool to generate a customized state label
- Missouri: *Home Energy Certificate* Program
 - Recognizes high scores as well as specific improvements in ratings using Home Energy Score & HERS

- ✓ **Facilitate sharing of scores with multiple listing services**
 - Working to see how DOE's Standard Energy Efficiency Data Platform (SEED) might help states and others aggregate data from multiple sources and match records
- ✓ **Tie the Score to Financing**
 - Begin with a two percent stretch on the qualifying debt-to-income ratio provided to borrowers purchasing or refinancing an “efficient” home or improving an inefficient one as measured by Home Energy Score
- ✓ **Account for energy efficiency in appraisals**
 - Potential use of energy estimates from Home Energy Score in appraisals (particularly “income” approach)



- ✓ DOE is working with its Partners and behavioral science and evaluation experts from Yale, Harvard, and MIT to assess impact of Score on homeowner action
- ✓ Randomized, controlled studies with NJNG, Focus on Energy, Colorado Energy Office, and being explored by NYSERDA
 - Collecting data on conversion rates, depth of retrofits, time expended before retrofit
- ✓ Using observability/recognition to drive EE investments
 - Assessing whether making homeowners' actions "observable" encourages greater uptake of the Score and energy improvements

ACI National Home Performance Conference New Orleans, LA May 4-7, 2015

Hear from DOE and its Partners:

- “Now What is DOE up to?” (May 5)
- “Home Energy Score: Driving Demand for Scores” (May 6)
- “How to Engage the Real Estate Community Today” (May 6)
- “Home Energy Labeling: An Update from Leading States” (May 6)
- “Efficiency that a Banker Can Love” (May 7)

Graphics

Web Banners

Homeowner Materials

Interested in becoming a Partner?

- Score 500 homes/year
- Oversee Assessors
- Perform 5% Quality Assurance (re-score 5% of homes)

Interested in becoming an Assessor?

- Hold qualifying credential
- Pass the free online Assessor exam (training and testing are both free!)
- Work under a Home Energy Score Partner
- If no Partner in your area, contact one of our national Partners, e.g. BPI at www.bpi.org/rater



Email us:

HomeEnergyScore@ee.doe.gov

Visit us on the Web:

www.HomeEnergyScore.gov