

Program Update and Scoring Tool v2014 Release

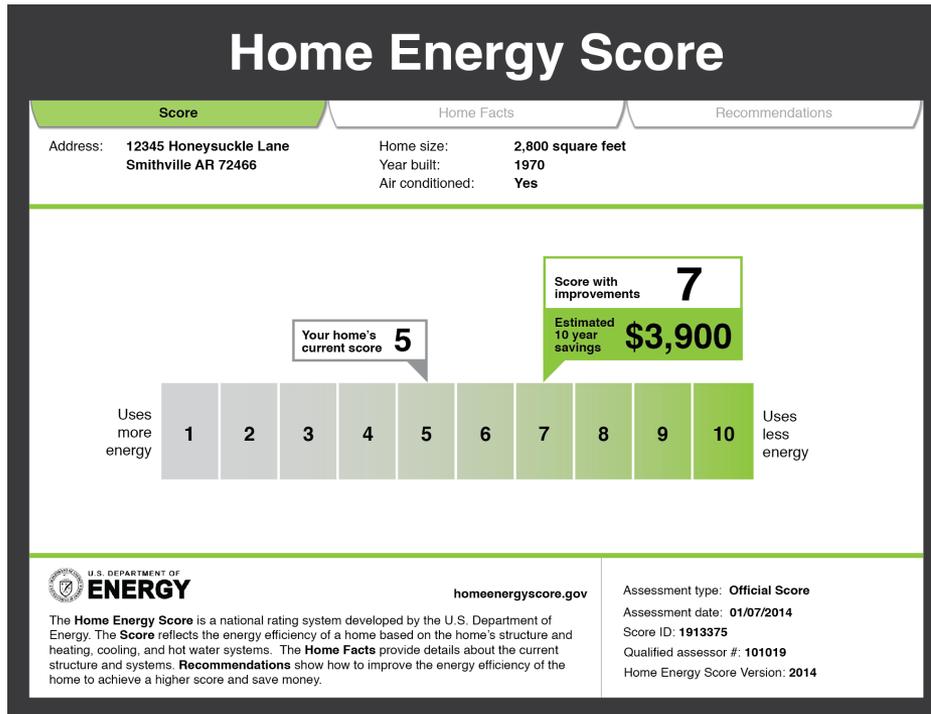
Joan Glickman, U.S. Dept. of Energy
January 14, 2014

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Poll #1

- (1) Home Energy Score Overview (10 minutes)
- (2) First Year Implementation Highlights (5 minutes)
- (3) New Developments (10 minutes)
- (4) Scoring Tool v2014 (5-10 minutes)
- (5) Questions/Comments

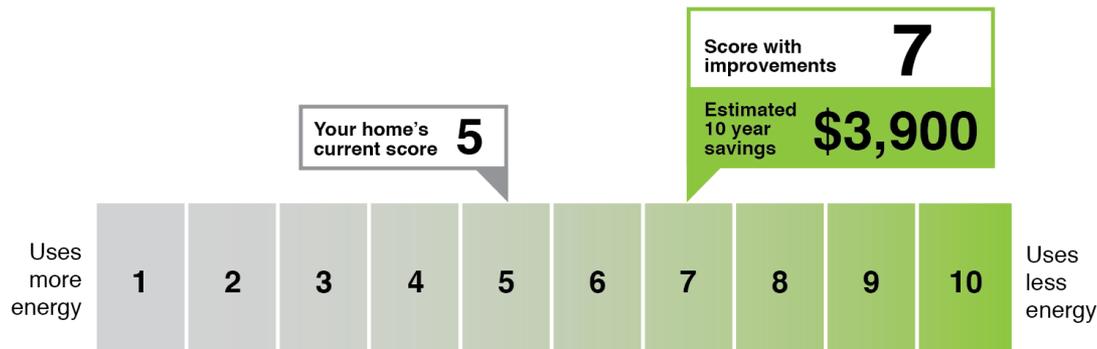
(1) Home Energy Score Overview



- ✓ **MPG rating for homes**
 - Standardized method for assessing the energy performance of a home's major energy systems and envelope
- ✓ **Low cost service**
 - Takes about 15 minutes if in concert with other assessment; less than 1 hour if stand-alone
 - Not intended to replace a full energy audit or diagnostics
- ✓ **Thorough development process**
 - Significant analysis underlying the program components
 - Ongoing research/continuous improvement

Home Energy Score

| Score | Home Facts | Recommendations |
|--|---|-----------------|
| Address: 12345 Honeysuckle Lane Smithville AR 72466 | Home size: 2,800 square feet Year built: 1970 Air conditioned: Yes | |



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.

homeenergyscore.gov

Assessment type: **Official Score**

Assessment date: **01/07/2014**

Score ID: **1913375**

Qualified assessor #: **101019**

Home Energy Score Version: **2014**

“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
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, square feet)
Direction faced by front of house



Estimated energy use per year

Total energy (MBTUs)
Electricity (kWh)
Natural gas (therms)
Oil (gallons)
Propane (gallons)



Comments

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

Windows

Window area front (sq
Window area right (sq
Window area back (sq
Window area left (sq
Are the window type
on all sides?
Window type front (o

Home Energy

Score

Home Facts



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

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 |

- Some Partners and Qualified Assessors elect to provide their own efficiency recommendations
- In such cases, this sheet remains blank and refers the homeowner to the assessor's supplemental report.

Home Energy Scoring Tool

- ✓ **Reliable, free, and easy to use**
- ✓ **Calculation methodology is transparent and nonproprietary**
 - Scoring Tool fares well when compared to other energy rating tools
- ✓ **Customizable features**
 - Assessor can generate “upgrade score” to reflect their own recommendations

Session Id: 1922531
Address: 12345 Honeysuckle Lane
Smithville, AR 72466

- ✓ **About this Home**
- ✓ Roof, Attic & Foundation
- ✓ Walls
- ✓ Windows & Skylights

Systems

[View Summary](#)

[Back to Dashboard](#)

Home Energy Scoring Tool

Session Id: 1922531
Address: 12345 Honeysuckle Lane
Smithville, AR 72466

About this Home

✓ About this Home
✓ Roof, Attic & Foundation
✓ Walls
✓ Windows & Skylights

Systems

[View Summary](#)
[Back to Dashboard](#)

About this Home

This tool is only for single family homes and townhomes (see tool tips for party wall insulation). It cannot be used for mobile homes or multifamily housing.

Assessment date
Enter the date that the on-site energy assessment was conducted. 01/03/2012

Comments

Home details

Year built: 1970
Number of bedrooms: 4
Stories above ground level: 2
Interior floor-to-ceiling height: 8 feet
Conditioned floor area (all stories combined): 2800 square feet
Direction faced by front of house: North
Was a Blower Door test conducted on this house? Yes No
Air leakage rate: 3800

[Save & Exit](#) [Next](#)

Home Energy Scoring Tool

Session Id: 1922531
Address: 12345 Honeysuckle Lane
Smithville, AR 72466

Heating

Type of heating system: --Select--

Heating System Efficiency

Year installed: N/A (Use efficiency field) - OR - Efficiency value: []

Cooling

Type of cooling system: --Select--

Cooling System Efficiency

Year installed: N/A (Use efficiency field) - OR - Efficiency value: []

Ducts

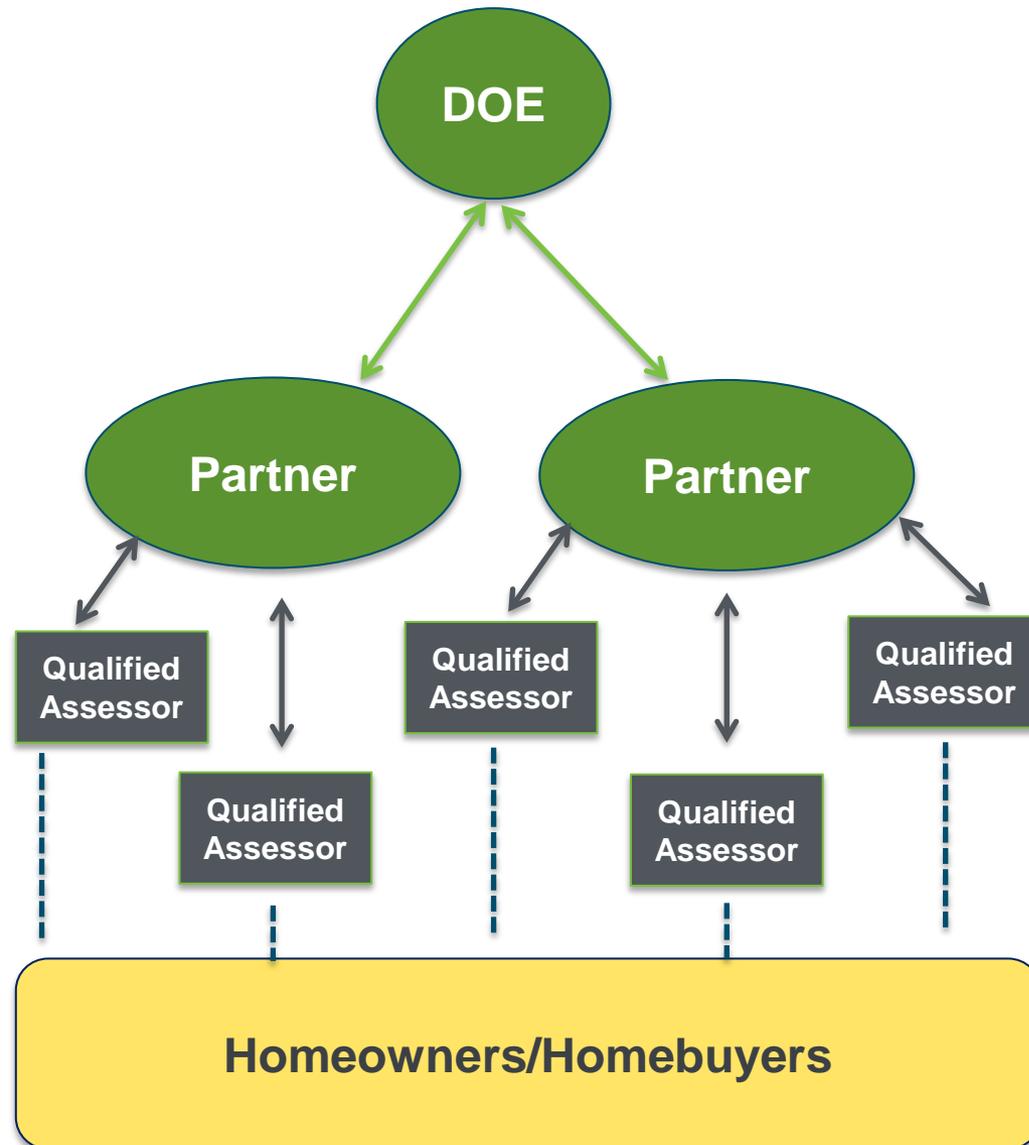
Duct location: --Select--

NOTE: Answer the the three duct questions ONLY if the house has forced-air heating or cooling ducts.

Are the ducts insulated? Yes No/Don't Know
Are the ducts sealed? Yes No/Don't Know

Hot Water

Water heater fuel: --Select--



Who scores a home?

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

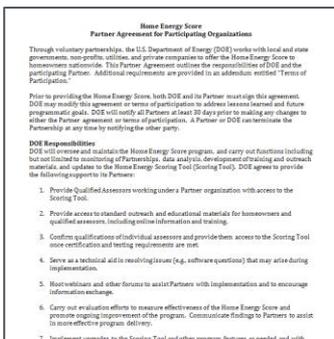
What does a **homeowner** get?

- 1) Asset score
 - Reflects standard operating assumptions
- 2) Home Facts
 - Data collected/computations
- 3) Recommendations for EE improvements

Partners oversee Qualified Assessors to implement Home Energy Score in their area

Upon Joining

- ✓ Sign a partnership agreement
- ✓ Develop an implementation plan



Annual Commitment

- ✓ Complete 200+ Scores per year
- ✓ Rescore 5% of homes (Quality Assurance)



Ongoing

- ✓ Administer Qualified Assessors tests
- ✓ Participate in monthly webinars



Marketing Materials for Partners & Assessors

Graphics

U.S. DEPARTMENT OF ENERGY
Home Energy Score

Qualified Assessor

Homeowner Materials

HOME ENERGY SCORE

Know how your home compares

The Home Energy Score is similar to a vehicle's mile-per-gallon rating. The score, developed and administered by the U.S. Department of Energy, allows you to compare the energy performance of your home to other homes nationwide.

The process starts with a Qualified Assessor collecting energy information about your home during a brief home walk-through. In addition to scoring your home, the Qualified Assessor will provide you with a list of recommended energy improvements and their estimated cost savings.

U.S. DEPARTMENT OF ENERGY
Home Energy Score

www.homeenergyscore.gov

WHAT DOES YOUR SCORE MEAN?

A higher score means a more energy efficient home

Using the Home Energy Scoring Tool, the Qualified Assessor scores your home on a scale of 1 to 10, with a score of 10 indicating that the home has excellent energy performance. A score of 1 indicates the home needs extensive energy improvements.

Use the list of recommended energy improvements provided by your Qualified Assessor to prioritize your energy efficiency improvements. By improving the efficiency of your home, you'll save money on your utility bills and enhance the comfort of your home. Plus, you can raise your Score!

GET STARTED TODAY!

STEP 1 Contact a Home Energy Score Partner currently offering the Home Energy Score in your area:

For a list of local programs, visit www.homeenergyscore.gov and click on "Partners." Your local Partner will help you get in touch with Qualified Assessors in your area.

STEP 2 Get a home energy assessment.

A Qualified Assessor will come to your home to collect information about your home's energy performance and evaluate your home to see where energy is being lost and the efficiency of your heating, cooling, and hot water systems. Best of all, it's quick! It only takes about an hour.

STEP 3 Get your Home Energy Score.

Your Qualified Assessor will generate your home's Score, which will range from 1 to 10, with 10 representing only the most efficient homes.

STEP 4 Decide on your energy improvements

Many states, localities and utilities offer incentives or rebates to make energy improvements. Make your energy improvements today and feel the difference in your home (and your utility bill) right away!



HOW DOES YOUR HOME COMPARE?

Find out with

U.S. DEPARTMENT OF ENERGY
Home Energy Score



▶ Click to learn more

Web Banners



HOW DOES YOUR HOME COMPARE?

U.S. DEPARTMENT OF ENERGY
Home Energy Score



▶ Click to learn more

FIND OUT WITH HOME ENERGY SCORE.

- ✓ Use API and avoid double data entry
 - Third-party software companies can license the Home Energy Score API to build applications that exchange data with the tool

- ✓ Software companies/organizations engaged in this process include:
 - EnergySavvy, Energy Soft, MN CEE, Optimizer, United Illuminating



Leveraging Market Players



iPad



Samsung Galaxy Tab 7



iPhone



Samsung Note

Images courtesy Richard Szydlowski,
Minnesota Center for Energy and Environment

Poll #2

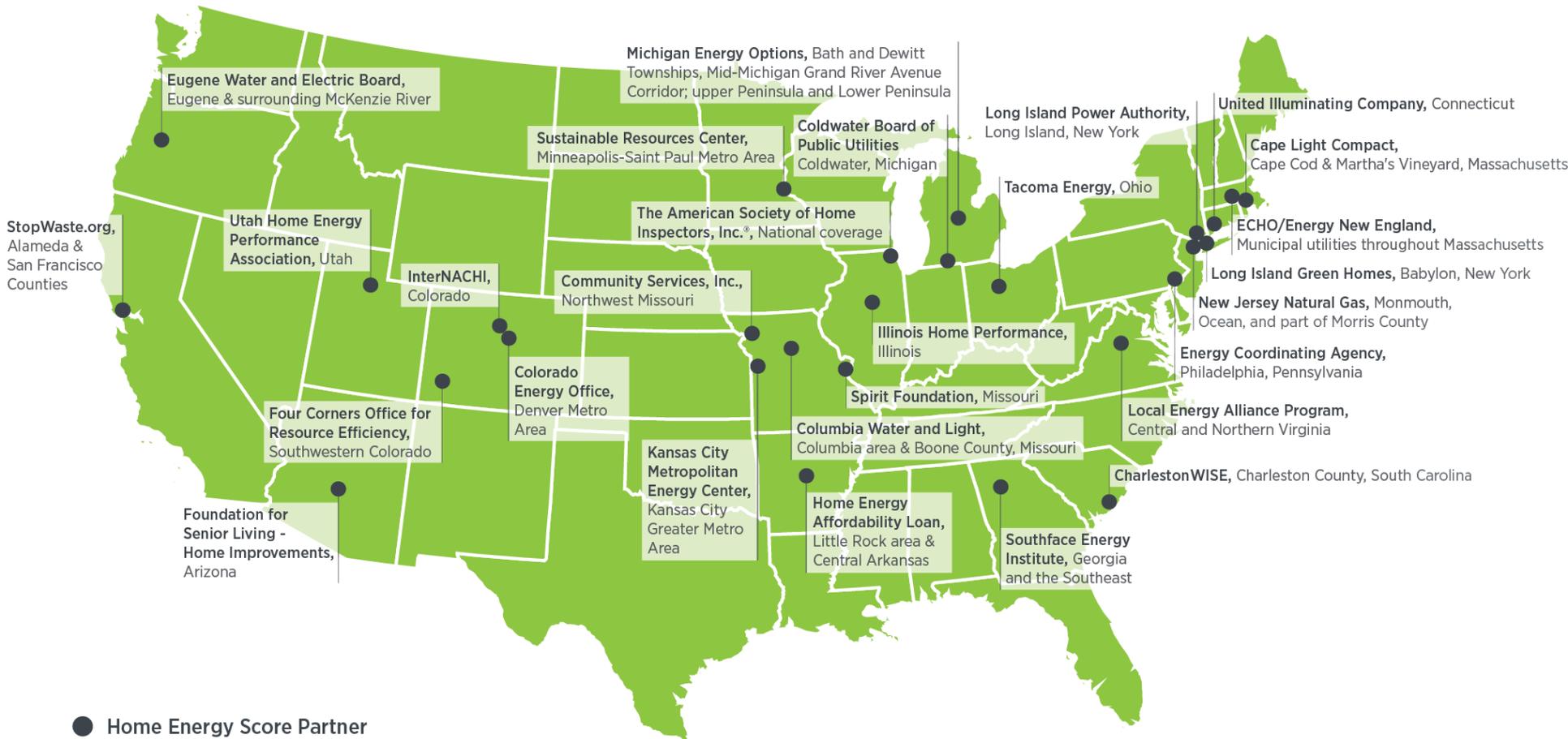
(2) First Year Implementation Highlights

Utilities

State and local governments

Non-governmental organizations

Home inspectors



- ✓ **30** Partners
 - About half are actively scoring homes
- ✓ **8,500+** homes scored since Summer 2012
- ✓ **185+** Qualified Assessors
- ✓ **CT, MO, VT** and other states interested in statewide adoption
- ✓ Individuals who take DOE's free Qualified Assessor Training can now receive 2 BPI CEUs
- ✓ Outreach to our Partners
 - Monthly Partner Webinar
 - Periodic Qualified Assessor calls
 - Account Manager support
 - Partner Portal on website
 - Significant improvements to Scoring Tool and scoring methodology

Home Energy Score Web Counter

8 5 8 9

As of January 7, 2014



HOW DOES YOUR HOME COMPARE?

Find out with

U.S. DEPARTMENT OF ENERGY
Home Energy Score

▶ Click to learn more

- ✓ Scale used in 1st year needed revision
 - Problematic for larger homes
 - Inclusion of base load stymies upward mobility
- ✓ Qualified Assessor pool is limited by current certification requirements
- ✓ A number of states are looking for flexible, easy rating method
 - Some likely to adopt Home Energy Score; others seriously considering adoption
 - Ability to customize the Home Energy Score's output is appealing
- ✓ Utilities, states and municipalities have found the Home Energy Score to be a cost-effective data collection mechanism to inform program design

(3) New Developments

3-D Immersive Simulation Training and Testing



Home Energy Score
3D Training Simulation Overview

<http://www.energyscore.org/home-energy-score-3d.html>

✓ Objectives and Methodology

- Shelton Group conducted two focus groups in Atlanta in October 2013
- Gauged reactions to Home Energy Score including likelihood of affecting future actions

✓ Findings

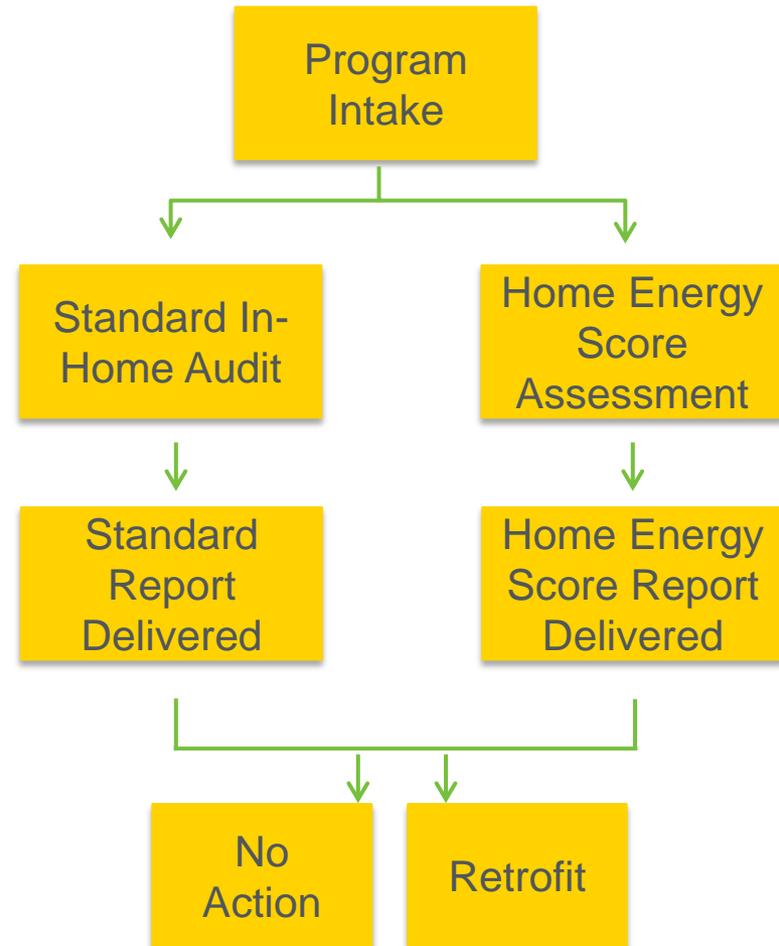
- Preferred annual estimated energy costs rather than 10 year savings
- Need to clarify technical terms in Home Facts
- Utilities have a role in the future success of the Home Energy Score Report
 - Provide a list of recommended contractors for recommended improvements
 - Would like to see cost information
- Having DOE seal lends credibility to the Home Energy Score Report
- Many would like to see Home Energy Score added to home inspection reports

✓ Testing Home Energy Score

- Energy Savvy is carrying out the study with DOE
- Randomly selected test and control groups; blind study
- Use study findings to inform potential improvements to the Home Energy Score

✓ What is Being Tested?

- Which group has a higher rate of follow-through on energy efficiency improvements
- Which group completes deeper retrofits



- ✓ **Testing Observability/Recognition Strategies**
 - How and to what extent does recognition in concert with Home Energy Score increase homeowner investment in EE?
 - Randomly selected test and control groups
 - Use study findings to inform local program designs
- ✓ **What is Being Tested?**
 - Which group has a higher rate of follow-through on energy efficiency improvements?

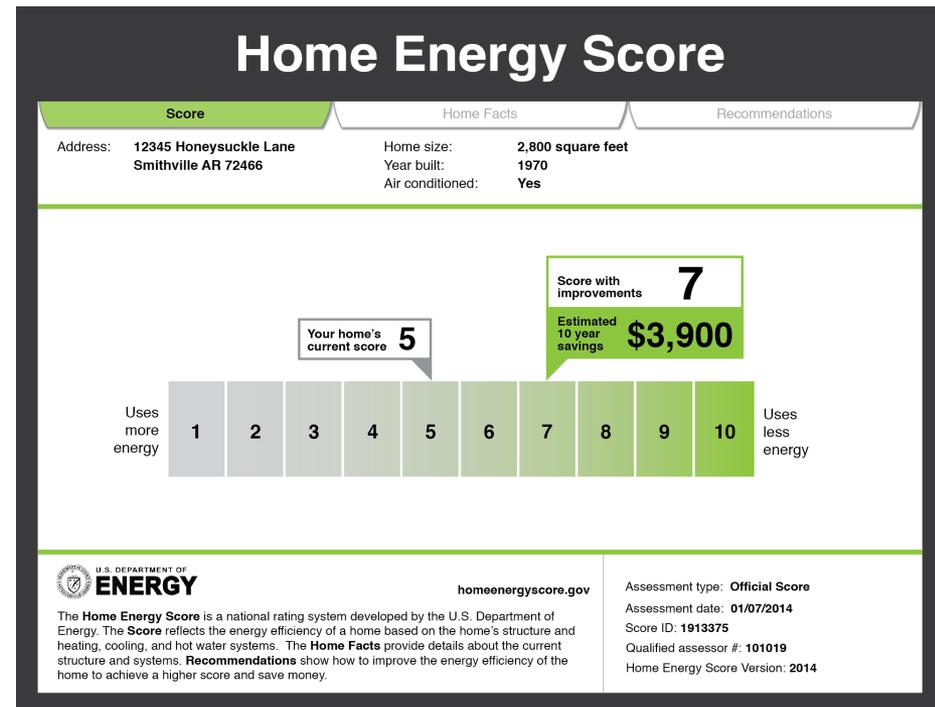


Poll #3

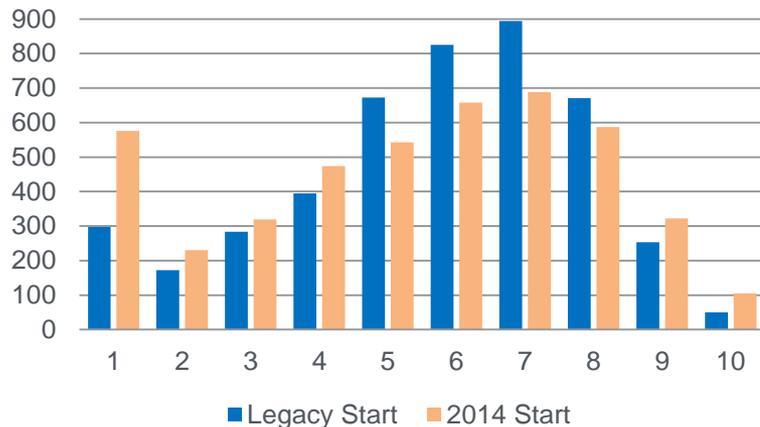
(4) Scoring Tool v. 2014

Introducing the Home Energy Scoring Tool v. 2014

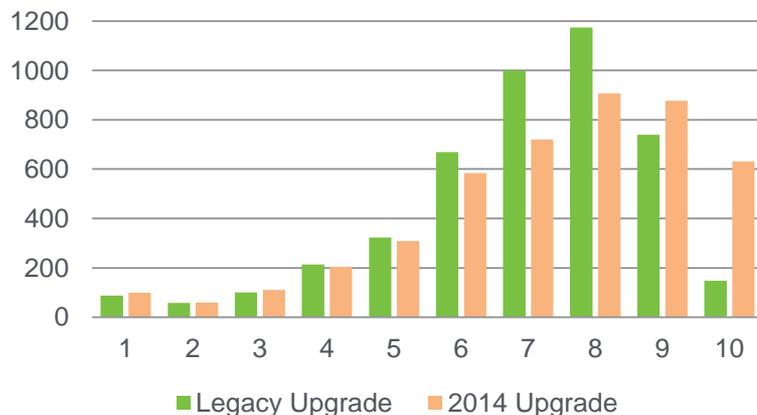
- ✓ New Scoring Tool, Scoring Method
 - Available now!
 - Retested tool's energy estimates against utility data from about 1,000 homes
 - Using TMY3 data from 1,000+ weather stations
 - Significantly improved ability to move up scale
 - Large home issue resolved
 - Greater ability to characterize ducts
 - Simplified method for scoring townhomes
 - GSHPs, HP water heaters
 - Report states type of assessment (Initial, Final, QA, Test)



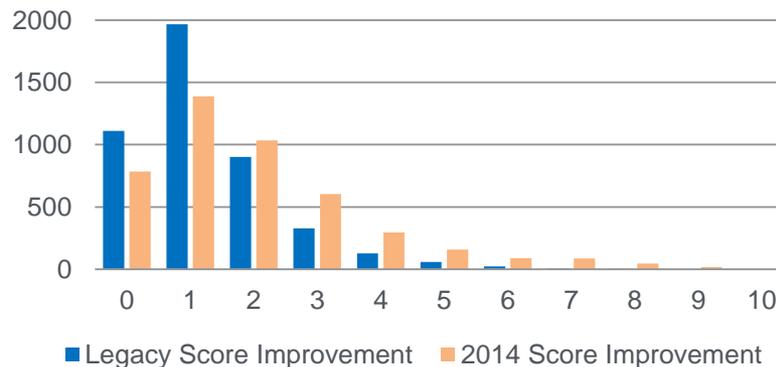
Starting Score - Legacy vs 2014



Upgrade Score - Legacy vs 2014



Score Improvement - Legacy vs 2014



✓ **New Scoring Tool, Scoring Method**

- Available now!
- Significantly improved ability to move up scale
- Large home issue resolved
- Easier to use API for those interested in tying into other software products

✓ **Bringing in experts to help further **enhance and target messaging****

- Looking at how Score can most effectively be used to motivate customer investment in efficiency upgrade (e.g. role of recognition)

✓ **Simulation training and testing** under development

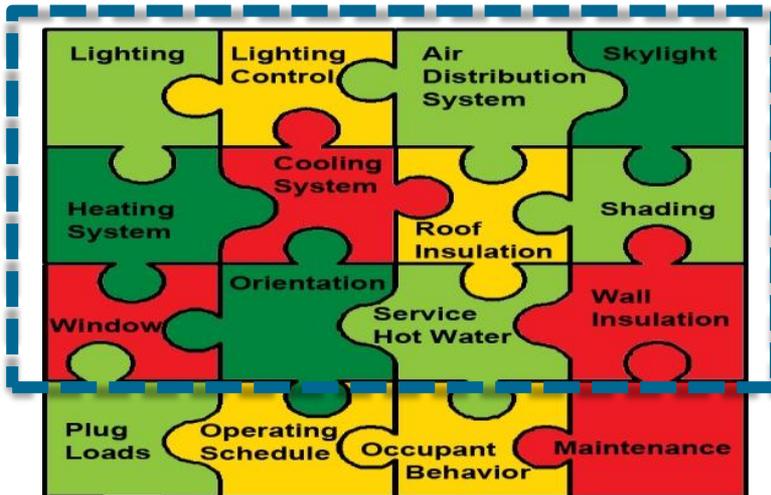
- Ability to participate in testing and development

✓ **Planning **future improvements****

- Tool enhancements
- Additional opportunities to customize Home Energy Score Report and results

Asset Score reflects the as-built physical characteristics of a building and its overall energy efficiency, independent of occupancy and operational choices.

Asset Score



Report (four sections)

- Score
- Upgrade Opportunities
- Structure and Systems
- Building Assets



Pilot tested in 2012 and 2013. Public version of the tool to be released in 2014.

Motivate Homeowners

Data Collection Mechanism

Transparent
Calculation
Methodology

Integration with existing programs

Free

Easy and quick



Home Energy Score

HomeEnergyScore@ee.doe.gov

Commercial Building Energy Asset Score

Asset.score@ee.doe.gov

Questions and/or Comments?