

U.S. Department of Energy's Home Energy Score

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November 18th, 2014

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Today's Discussion of Home Energy Score

- Why bother?
- What is it?
- How does it work?
- What's coming soon?

The Score: A Simple Approach to a Not So Simple Problem

From a recent study by Shelton Group, Shelton's Group Energy Pulse 2013...

81% of respondents said that higher energy efficiency would cause them to choose one new home over another

Yet, we know that people don't capitalize on energy efficiency opportunities in their own homes. Why not?

"I think that cosmetic improvements will make my home more attractive at resale than efficiency improvements will" (37%)

Opportunity

"I care about the efficiency of the home I buy"

+

Problem

"I can't recoup my EE investments"

=

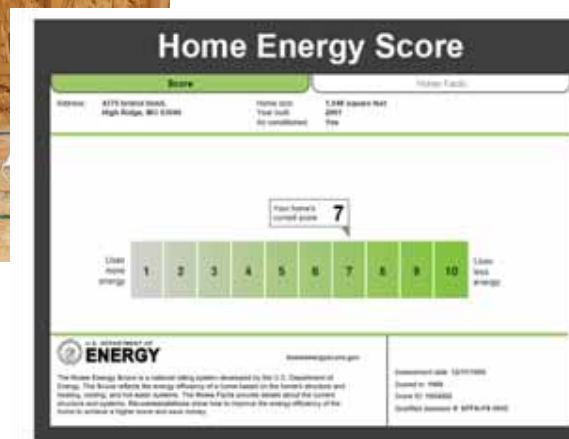
Potential Solution



Value Proposition....Why Bother?

The Score helps translate investment in energy efficiency into a tangible value.

- ✓ Homeowners and homebuyers understand it
- ✓ Easy to capture at point of sale
- ✓ Exposes “hidden” value: makes insulation and air sealing visible



Taking Advantage of Social Norming

The Score capitalizes on social norming principles to help drive demand for energy efficiency.

- ✓ People like to fit in, do as others do
- ✓ “Check it out...You’re as good or better than your neighbors”
- ✓ “You did a good thing and you can be recognized for it now”



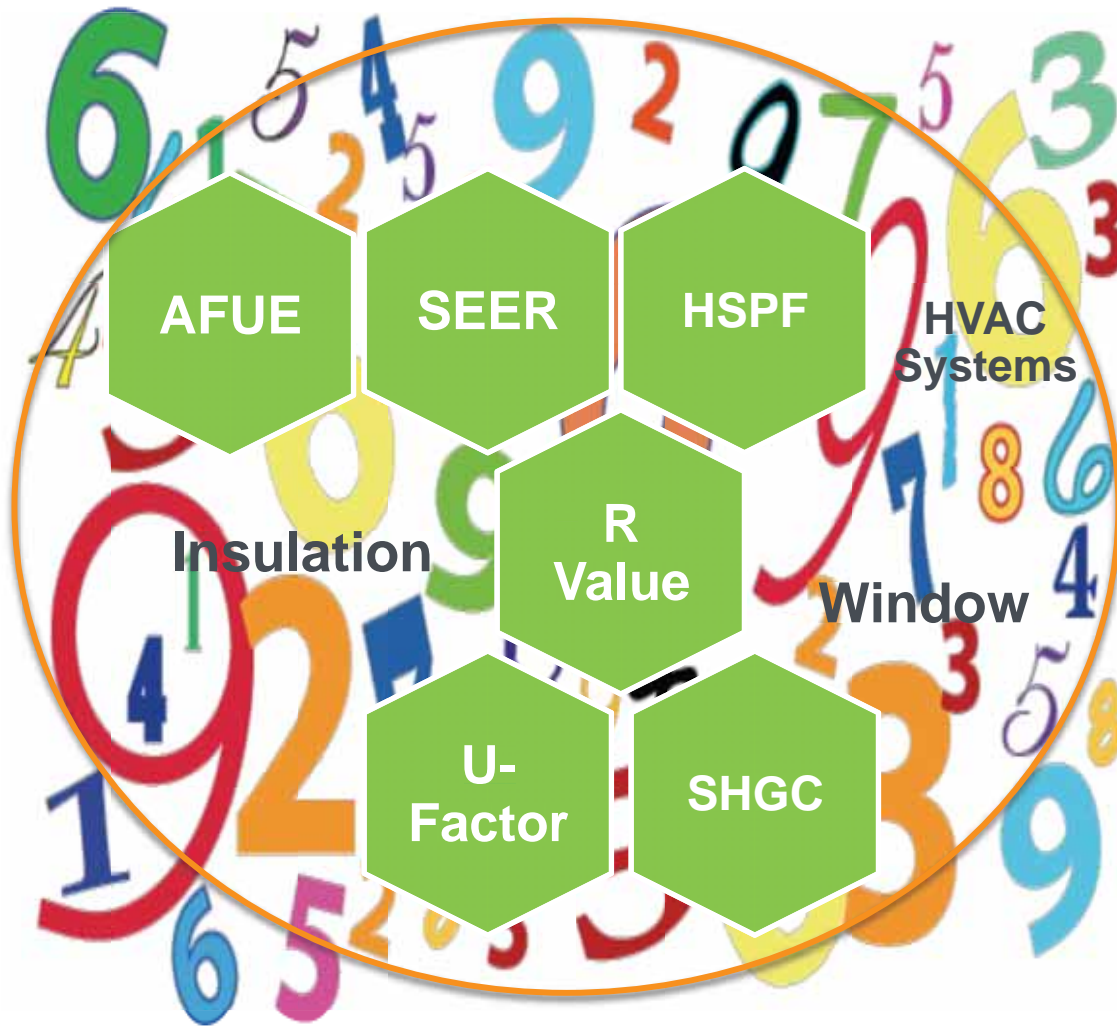
Home Energy Score: A key product of the “Recovery through Retrofit” initiative

U.S. Department of Energy created nationally standardized “miles-per-gallon” home score

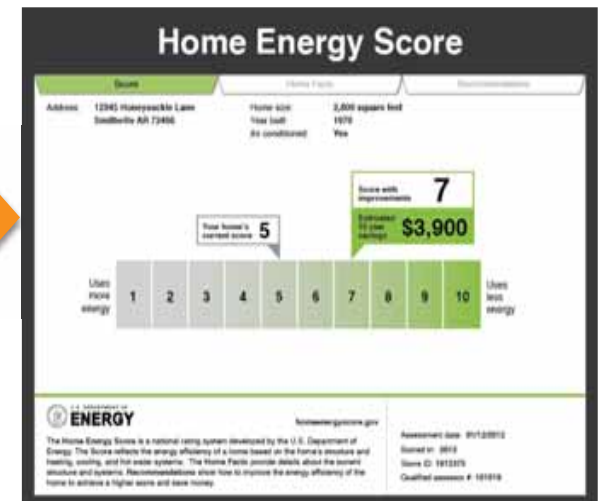
- ✓ Offers homeowners **affordable, reliable, easy way** to understand homes’ energy performance
- ✓ Available at **no-cost** to program providers
- ✓ Intended to **motivate homeowners** to invest in residential energy efficiency
 - ✓ Simple and action-oriented
 - ✓ Ability to document investment in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

Home Energy Score website: www.homeenergyscore.gov

Numbers...Here, There, Everywhere



Making Them Meaningful



Part 1: The Score

Home Energy Score

Score	Home Facts	Recommendations
Address: 12345 Honeysuckle Lane Smithville AR 72466	Home size: 1,800 square feet Year built: 1970 Air conditioned: Yes	



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**

Part 2: Home Facts

“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 (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 Crawspace

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

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

Home Energy Score

Score: Home Facts Recommendations

Windows & skylights

Skylights

Does the house have skylights?

Windows

Window area front (square feet)

Window area back (square feet)

Window area right (square feet)

Window area left (square feet)

Front (or all sides same)

Home Energy Score

Score: Home Facts Recommendations

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

Part 3: Recommendations

Home Energy Score

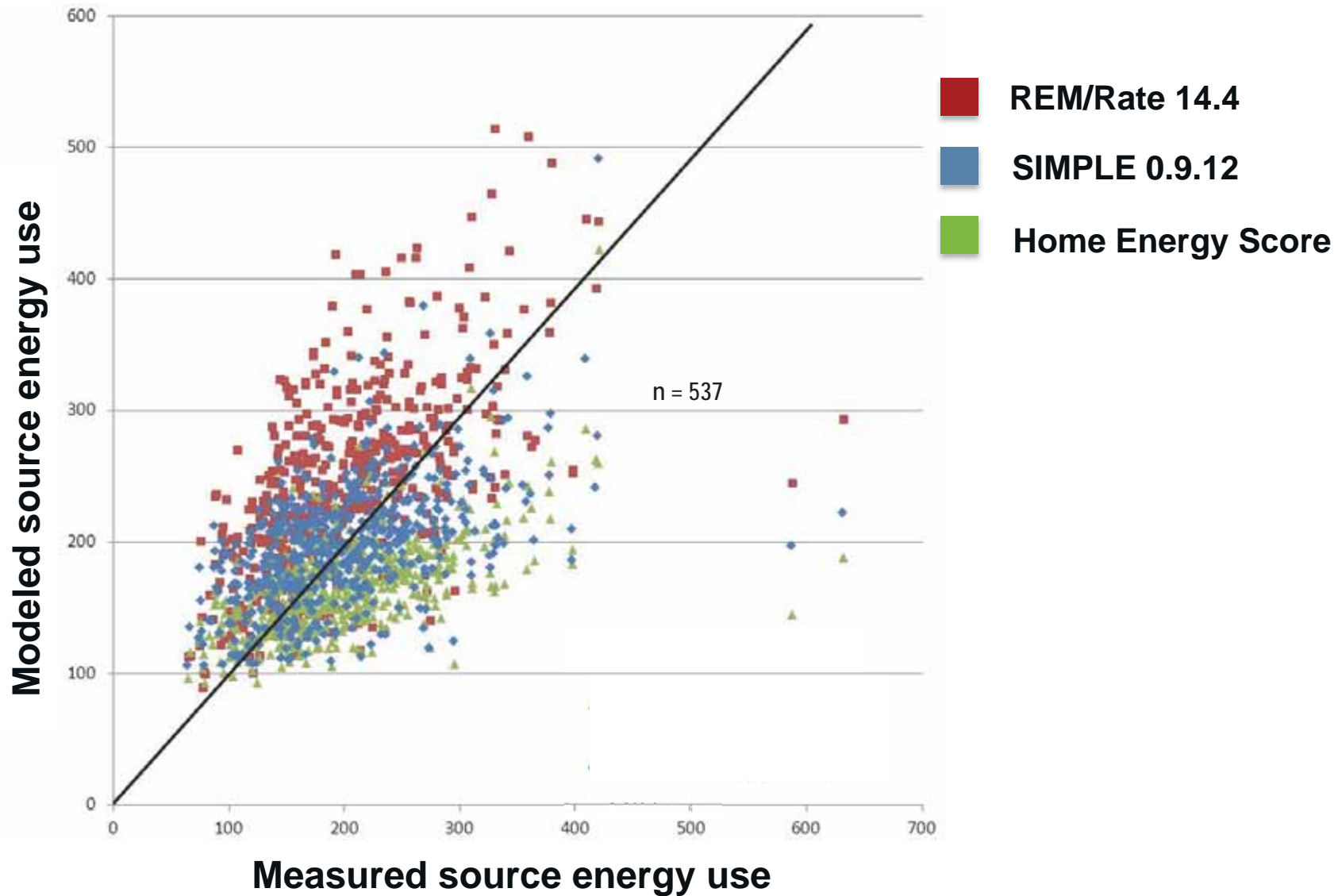
Score	Home Facts	Recommendations
Address: 12345 Honeysuckle Lane Smithville, AR 72466		
Repair now: These improvements will save you money, conserve energy, and improve your comfort now		Estimated utility bill savings (\$/year)
Attic : Increase attic floor insulation to at least R-38		179
Ducts : Add 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 savings (\$/year)
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%**

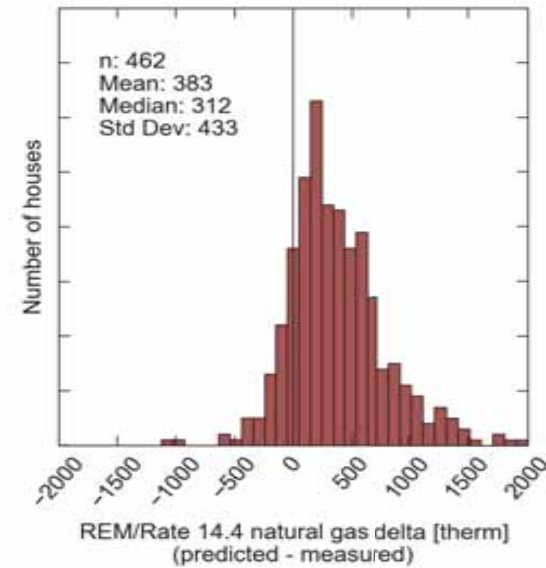
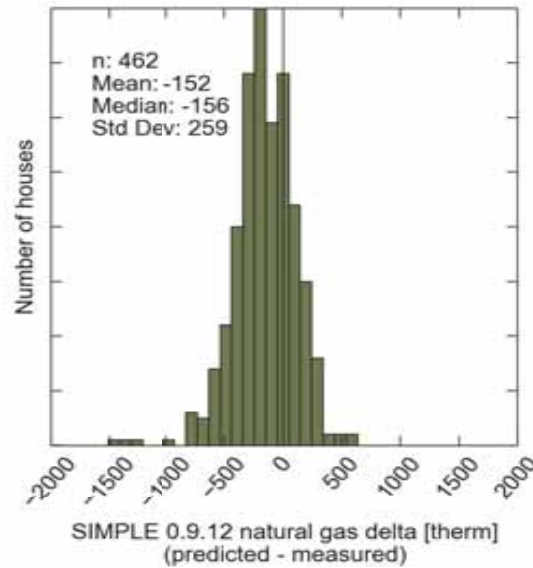
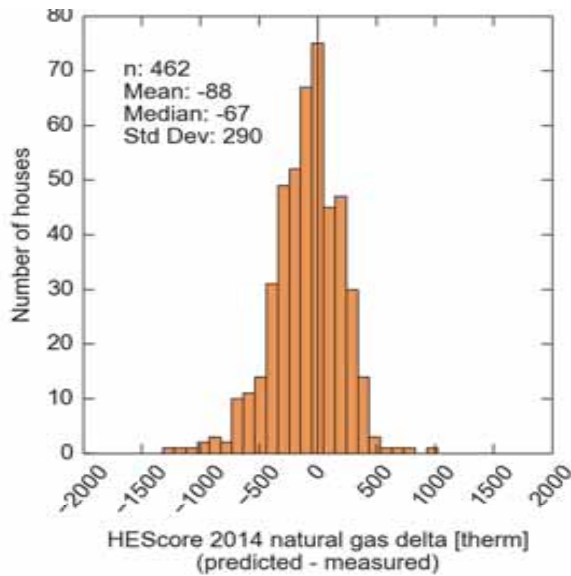
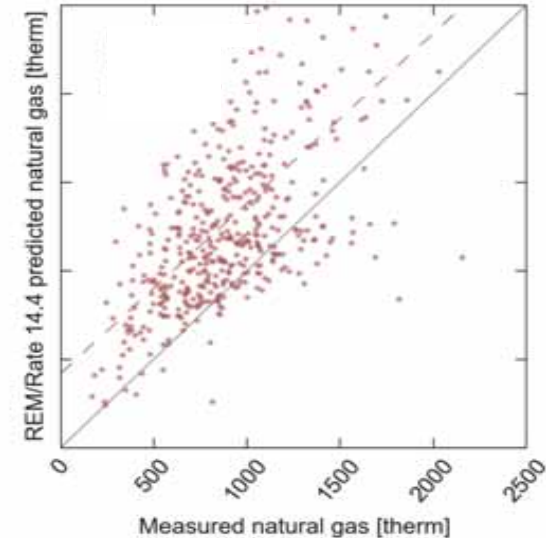
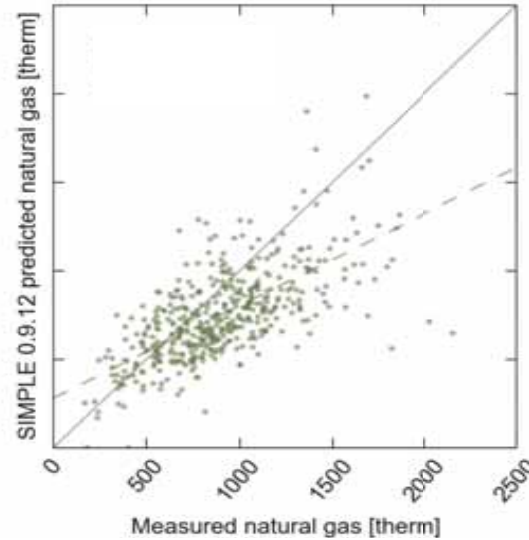
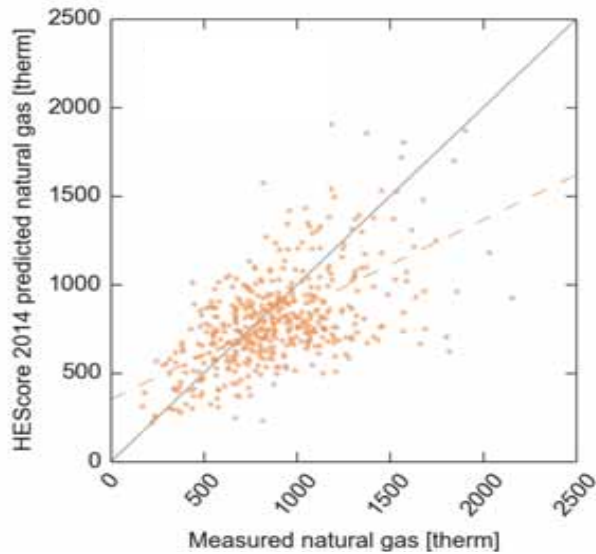
Score ID: 42944
homeenergyscore.gov

- Recommendations categorized as “Repair now” and “Replace later”
- 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.

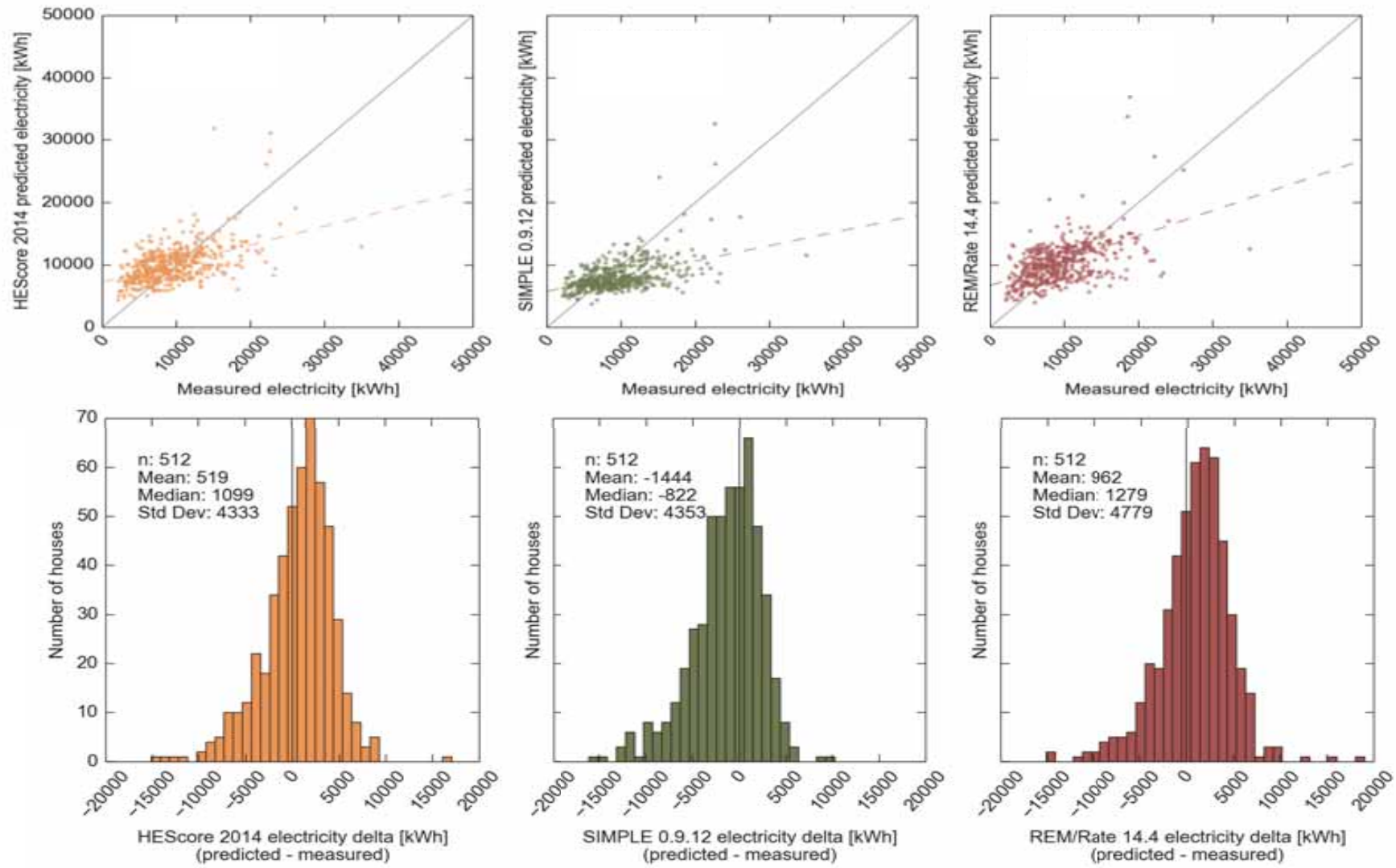
Relative Accuracy of Different Modeling Tools: Comparing Source Energy Estimates to Energy Bills

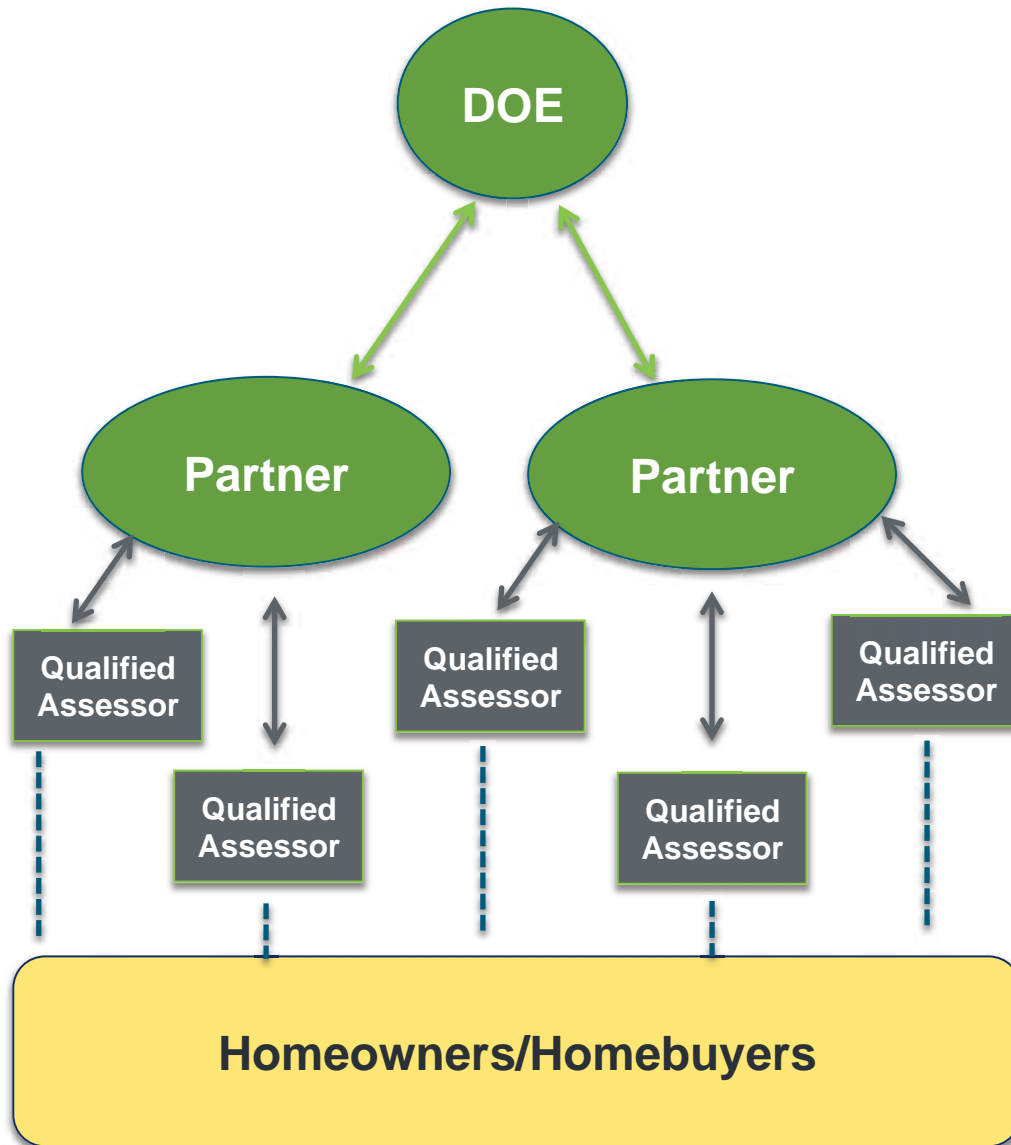


Comparing Natural Gas Estimates to Energy Bills



Comparing Electricity Estimates to Energy Bills





Who scores a home?

- Qualified Assessors working under local Partners who are **state/local governments, utilities, non-profits**, and other home performance industry organizations

What does a homeowner get?

- Asset score including score with improvements and estimated annual savings
- Home Facts
- Cost-effective energy improvement recommendations

Implementation Highlights

- ✓ 15,000+ homes scored since 2012
- ✓ 250+ Assessors
- ✓ Homeowners understand the 1-10 scale
- ✓ Statewide adoption planned in CT, CO, VT, MO with others following suit (e.g., AL, AR)
 - ✓ Linking to multiple listing services
 - ✓ Tying incentives, levels of recognition to Score
- ✓ Cities requiring it as part of disclosure policies
- ✓ Simple data collection mechanism
- ✓ Useful analytical tool for program administrators/utilities
- ✓ Score can be easily integrated into existing residential programs

Homes Scored to Date

1 5 0 5 2



Existing Partner network

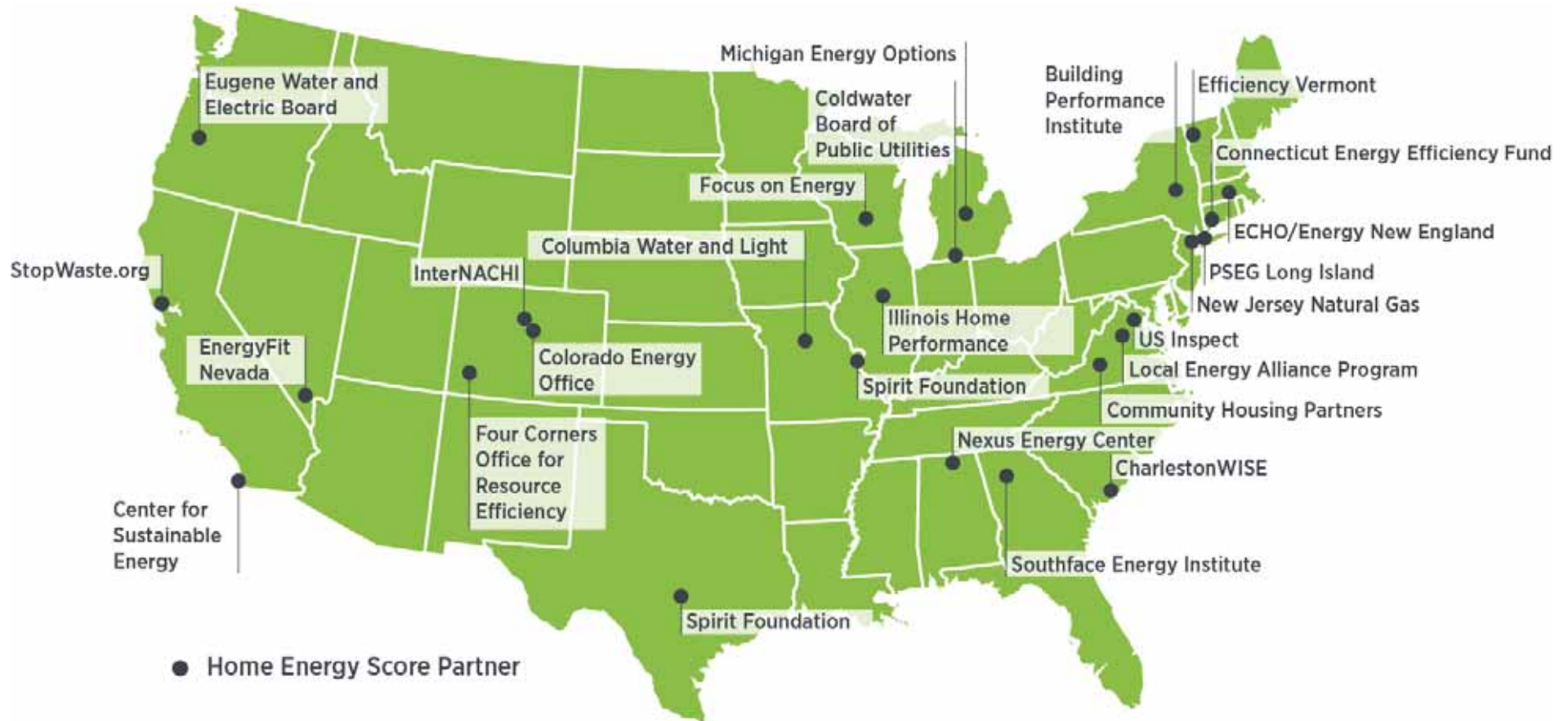
As of November 2014

Utilities

State and local governments

Non-governmental organizations

Home inspectors



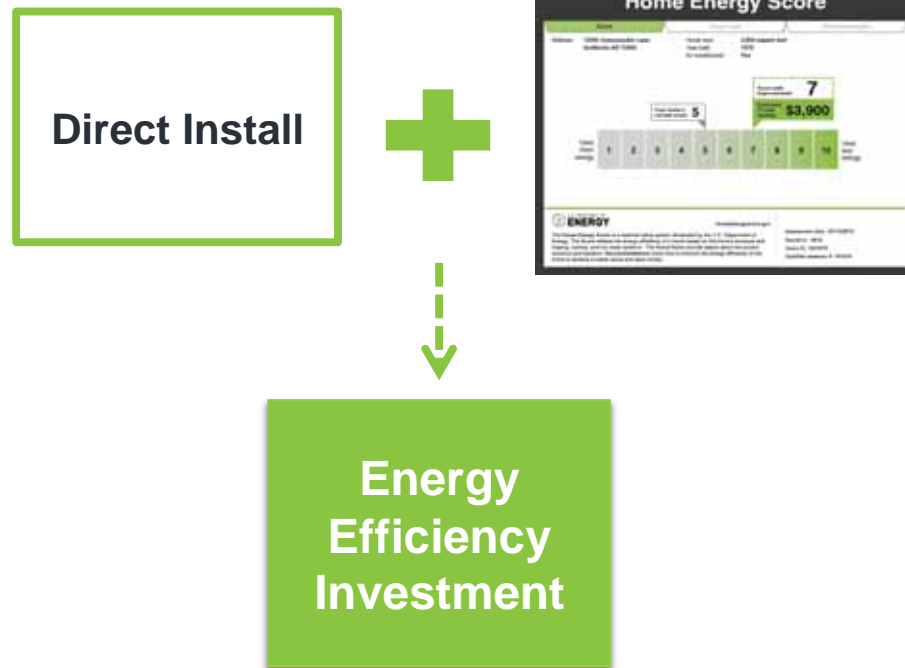
Flexible Implementation Options

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



Example #1: Focus on Energy (WI)

Provide the Score as part of **direct install/prescriptive measures** programs.



- ✓ Utilities can capitalize on an auditor's house visit
- ✓ Quickly highlights opportunities for deeper energy efficiency improvements
- ✓ Cost effective data collection mechanism
- ✓ Partners using this approach include Focus on Energy, implemented by Conservation Services Group
- ✓ Preliminary results shows high customer satisfaction upon Home Energy Score delivery

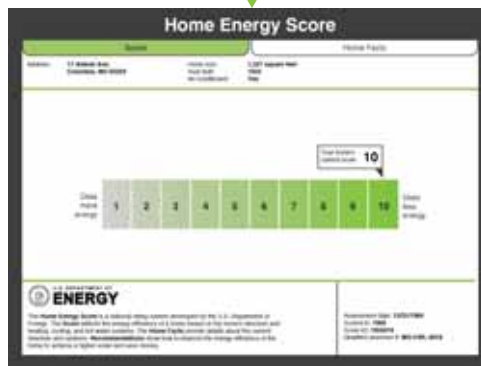
Example #2: Columbia Water & Light

Provide the Score as part of a **whole home efficiency** program.

Comprehensive Energy Audit with



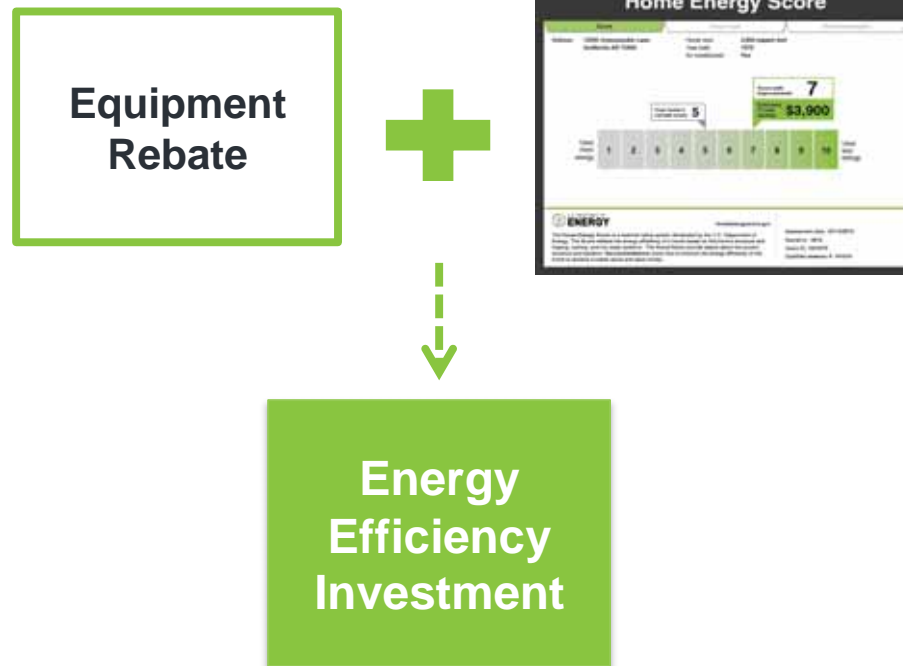
Energy Efficiency Investment



- ✓ Offered as part of the Home Performance with Energy Star program
- ✓ Home Energy Score completed before and after energy efficiency improvements are made
- ✓ Improved “Final” Score serves as a form of recognition for homeowner’s actions
- ✓ Used to motivate investment
- ✓ Used to estimate energy savings

Example #3: New Jersey Natural Gas

Provide the Score as part of **equipment rebate** program.



- ✓ NJNG provides the Score to customers as part of the mandatory equipment rebate no-cost audit
- ✓ Home Energy Score is used to encourage homeowners to undertake additional upgrades
- ✓ Helps the utility collect and track data with little or no additional cost
- ✓ NJNG carrying out a Home Energy Score Evaluation Study to assess impacts

Example #4: Colorado Energy Office

Offer the Score at **point of sale.**



**Make Buyer
Aware of
Needs for
Efficiency
Improvements**




**Highlight
Energy
Efficient
House**

- ✓ Colorado is linking the Score to incentives at point of sale or refinancing (\$750 per score jump, up to \$3,000)
- ✓ Puts energy efficiency improvements on homebuyer's radar
- ✓ Consumers' willingness to invest in energy efficiency is higher at point of sale
 - Many home improvements are made during first year of home ownership
 - Additional cost can be rolled into the loan with little impact on the mortgage payment
- ✓ Adding the score to existing energy efficiency programs to reach scale and accelerate market adoption

➤ Connecticut

- Integrating Home Energy Score into statewide Home Energy Solutions (HPwES) program
- Using it to track progress toward their 80% weatherization goal for 2030
- Plan to score more than 10,000 homes annually

➤ Vermont

- Adopting the Score as a key component of the state's voluntary labeling program
- Using multiple metrics from Home Energy Scoring Tool to generate a customized label for their state
- Roll out planned for early 2015

Application Programming Interface (API)

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Energy Efficiency &
Renewable Energy

- ✓ Third-party software companies can license the Home Energy Score API to build applications that exchange data with the tool
 - Use API and avoid double data entry
 - HPXML Ready by beginning of 2015
- ✓ Software companies and organizations that completed API integration:
 - EnergySavvy, Energy Soft, Optimizer, United Illuminating, Cake Systems



Images courtesy Richard Szydlowski,
Minnesota Center for Energy and Environment

DOE Assists with Marketing Materials for Partners & Qualified Assessors

Graphics

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Home Energy Score



Qualified Assessor

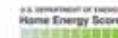
Homeowner Materials

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.



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?

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FIND OUT WITH HOME ENERGY SCORE.



Home Energy Score Integration with FHA and other HUD programs

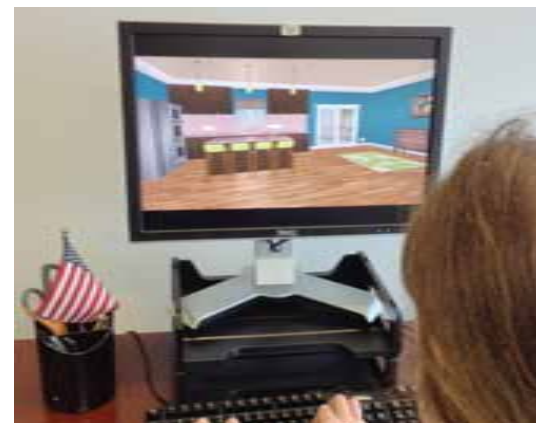
✓ Tying the Score to Financing Opportunities

- Provide 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
- Allow recommendations identified by Home Energy Score as “Eligible Energy Measures” for FHA products
- Longer Term: Integrate Home Energy Score as primary EE metric for HUD’s existing homes programs



3-D Simulation Training and Testing: Coming January 2015

- ✓ 3-D Tool uses computer-based simulations to recreate a range of jobsite scenarios.
- ✓ Through a comprehensive validation study, DOE confirmed that the simulation tool can effectively determine a candidate's competency to deliver the Home Energy Score.
- ✓ DOE will now recognize certifications for many different building-related organizations (e.g., BPI, RESNET, home inspector and contractor associations).
- ✓ Many more building professionals will now be able to offer the Score.



“...we can empower the private sector and Michigan homeowners. When people are looking at buying a home, they receive an inspection report, telling them about the plumbing, the roof, and many things about the house that aren't visible to the naked eye. What they don't know is whether the house is energy efficient.”

-- Governor Snyder, November 2012

Some options on how to begin...

- Integrate Score into utility programs
 - Use of API allows utilities to provide the score at little to no incremental cost
- Promote use of Score among home inspectors and contractors
 - Need a viable option for quality assurance and mentoring
- Educate realtors and appraisal community
- Consider tying incentives to score
 - Analyze existing data from homes that have gone through home performance to see the effect of improvements on their scores

Home Energy Score

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