

U.S. DEPARTMENT OF
ENERGY

Office of
**ENERGY EFFICIENCY &
RENEWABLE ENERGY**

U.S. Department of Energy

Home Energy Score

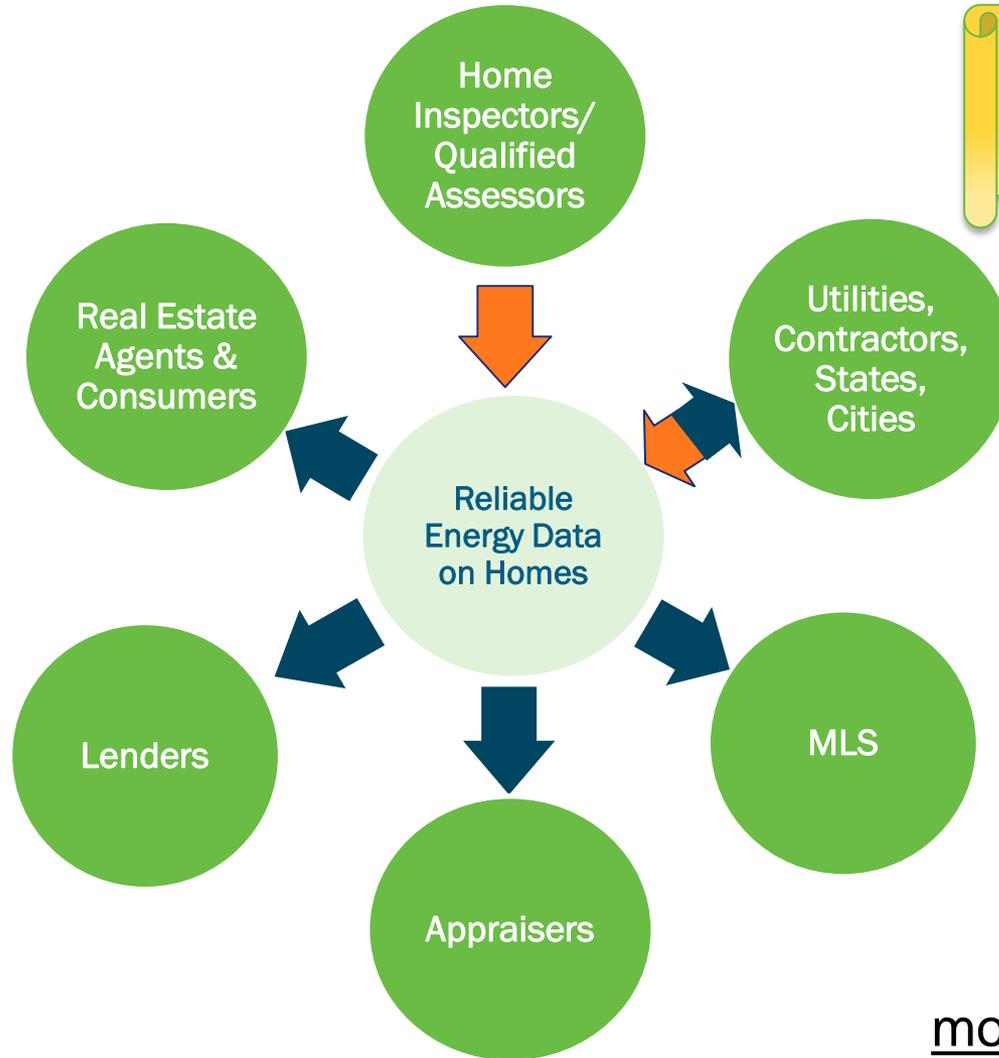
Joan Glickman

November CT Webinar



Why Should You Care about Residential Labeling?

Home Owners & Sellers want to get credit for their investments in energy efficient equipment and other features



Encourage Retrofits

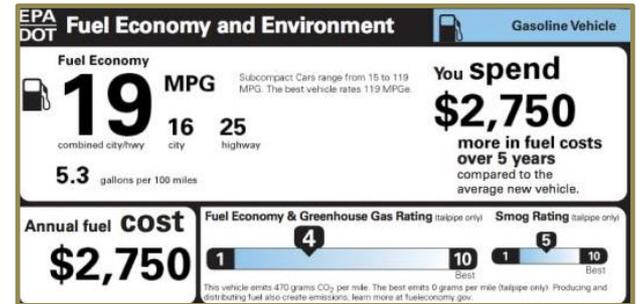
Capture the Value of Energy Performance in Homes

Home Buyers want to know what they're buying and be able to predict monthly expenses (e.g., utility costs)

Provide Home Energy Information Through DOE's Home Energy Score

This “miles-per-gallon” rating for homes can help homeowners/buyers/sellers*:

- ✓ Understand a home's energy use, estimate utility bills, and ways to improve efficiency
- ✓ Showcase energy improvements they make to their home when they're ready to sell



The Home Energy Score is –

FAST. Takes less than one hour in most homes.

AFFORDABLE. Free Assessor training & testing keep costs low.

SIMPLE. Easy to understand 1 to 10 scale.

CREDIBLE. Created through robust testing and analysis.

FLEXIBLE. Available through various programs and software.

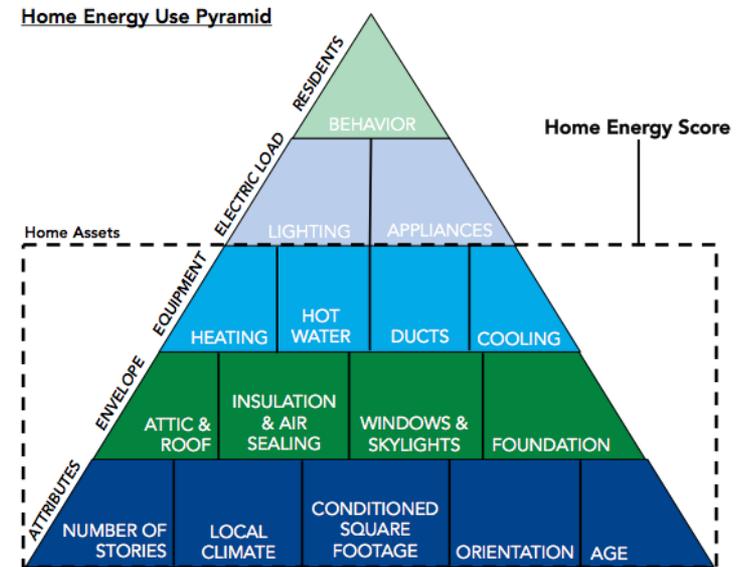


*Applicable for single-family homes and townhomes only.

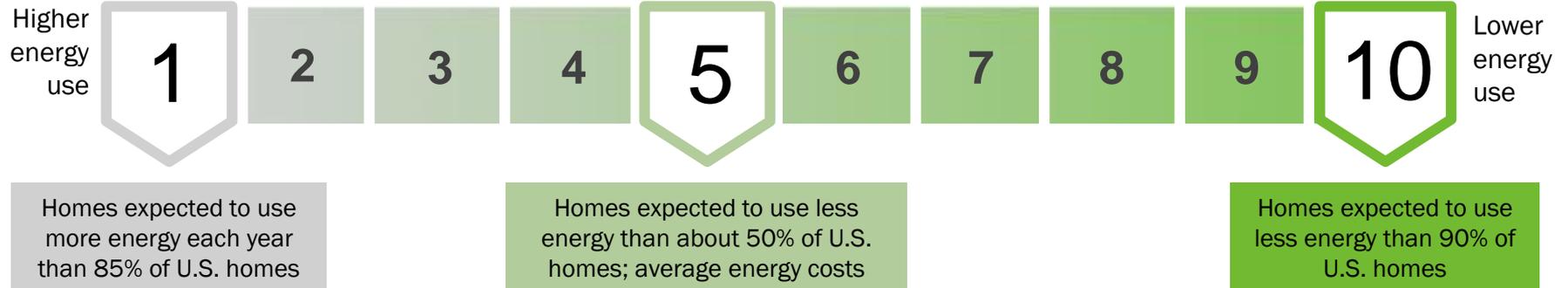
What A Home's Score Means

The Score is based on a home's energy-related assets – those features that typically convey at time of sale

- Assumes average weather for that location and “typical” occupant behavior
- More reliable than past bills
- Allows an “apples to apples” comparison between homes



The less energy a home is expected to use, the higher its Score



A Tool for Homes



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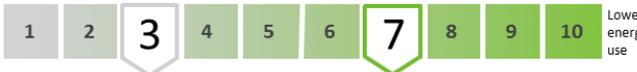
Home Energy Score

12345 Main Street
Springfield, CT 06706

SCORE TODAY **3**

CONDITIONED FLOOR AREA: 2,334 ft²
YEAR BUILT: 1973

Average Home Score



SCORE TODAY

Estimated annual energy cost: **\$2,431**

Score basis: **136 MBTU**

SCORE WITH IMPROVEMENTS

Potential annual energy cost: **\$1,549**

Score basis: **76 MBTU**

The U.S. Department of Energy's Home Energy Score assesses the energy efficiency of a home based on its structure and heating, cooling, and hot water systems. For more information visit homeenergyscore.gov.

This Home...



CURRENTLY WASTES 44% OF ENERGY ON INEFFICIENCIES



COULD SAVE \$882 EACH YEAR ON ENERGY COSTS



COULD ELIMINATE 36% OF CO₂ EMISSIONS WITH COST-EFFECTIVE UPGRADES

This home is expected to use 61 kBtu / ft² and cost \$1.04 / ft² compared to an average home at 58 kBtu / ft² and \$1.37 / ft².

Estimated Energy Use

🔥 NATURAL GAS
⚡ ELECTRICITY

TODAY:

🔥 1,324 therms

⚡ 9,716 kWh

WITH IMPROVEMENTS:

🔥 849 therms

⚡ 8,649 kWh

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Home Energy Score

12345 Main Street
Springfield, CT 06706

SCORE TODAY **3**

Home Facts

The Home Energy Score's Home Facts includes details about the home's current structure, systems, and estimated energy use. For more information about how the score is calculated, visit our website at homeenergyscore.gov.

About This Home

ASSESSMENT

Type	Official
Assessor ID	#1234567
Scoring tool version	v2017

HOME CONSTRUCTION

Year built	1973
Number of bedrooms	4
Stories above ground level	2
Interior floor-to-ceiling height	8 ft
Conditioned floor area	2,334 ft ²
Direction faced by front of house	North
Air leakage rate	3210 CFM50

Estimated Annual Energy Use

ENERGY BY TYPE

Total	166 MBtu
Score basis	136 MBtu
Electricity	9,716 kWh
Natural gas	1,324 therms
Solar Photovoltaic	6,875 kWh

COST BASIS

Electricity	\$0.176 / kWh
Natural gas	\$1.332 / therms
Energy cost per square foot	\$1.04 / ft ²

DEFINITIONS & CONVERSIONS

MBtu	Million British thermal units; generic energy unit
kWh	Kilowatt-hour; electricity unit
Therm	100,000 Btu; heat energy unit
Electricity conversion	1 MBtu = 293 kWh
Heat conversion	1 MBtu = 10 therms

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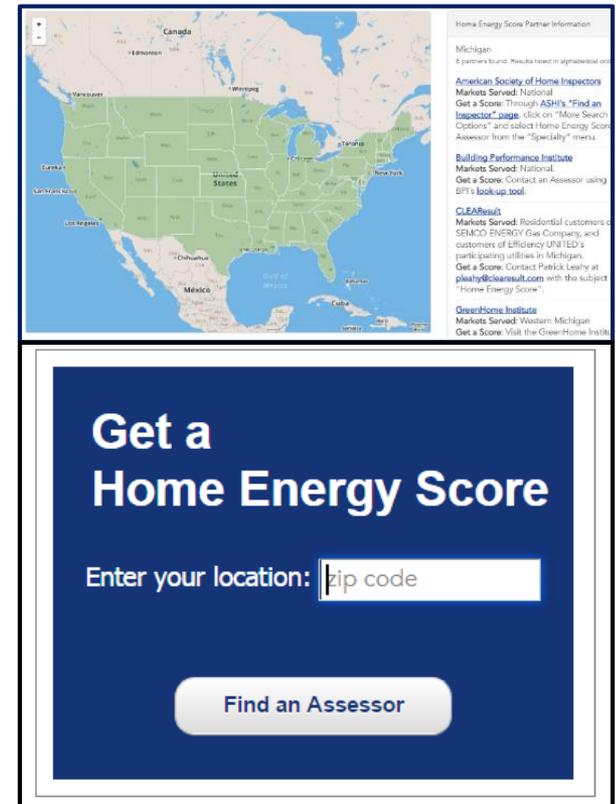
Cover page highlights key information.

Six page report details the home's energy features and cost-effective energy solutions.

Home Energy Score Highlights & News

- ✓ 75,000+ Homes scored
- ✓ 500+ Assessors nationwide
- ✓ Remote Quality Assurance & Mentoring Now Underway
- ✓ State and local adoption
 - **Berkeley, CA and Portland, OR** require Score at time of sale or listing
 - NYC introduced legislation, others considering
 - **AL, AR, CO, CT, MO, NH, OR, VT**
 - Others considering (e.g. MA, NY, RI, WI)
- ✓ FHA Homebuyer Counseling
 - Webinar for training orgs on November 30th!
 - Outreach to REALTORS & homeowners/buyers
 - Education modules
 - Presentation materials

“Find An Assessor” Tool
at homeenergyscore.gov



Partner Requirements Ensure Quality

Partner Requirements & Benefits

Upon Joining

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

Annual Commitment

- ✓ Complete 500+ Scores per year
- ✓ Rescore 5% of homes (Quality Assurance)

On-going

- ✓ Participate in Partner webinars
- ✓ Receive data for all homes scored in your area
- ✓ Access marketing materials, logos, etc.

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:
 - City/State policies
 - Home Performance with ENERGY STAR
 - Direct Install programs
 - Utility rebate programs
 - Real estate transactions
 - And more.....

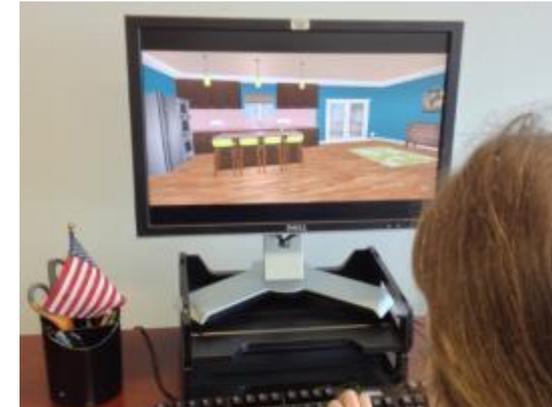


3D Simulation Training & Testing

Streamlined & Still FREE !

Latest version is streamlined,
takes less time to complete

- ✓ Uses computer-based simulations to recreate a range of job-site scenarios.
- ✓ Teaches you how to measure the Score data input consistently so that consumers can have confidence in the Score & calculations
- ✓ Show you how to use “de-rate” calculators that help take into account the quality of insulation installation as well as equipment maintenance
- ✓ Developed with significant input from outside experts & practitioners.



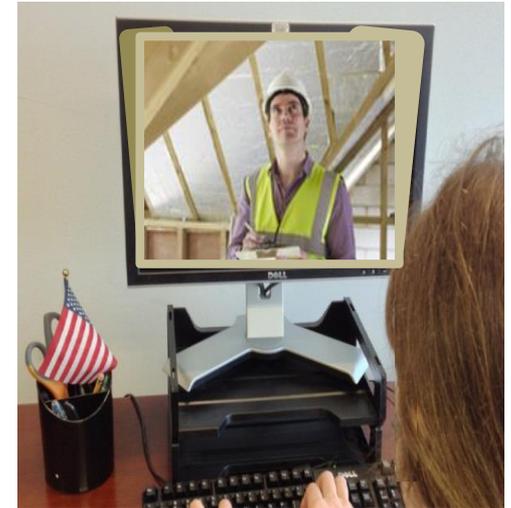
Webinar Demo of
3D Tool
January 27 recording
available online.



Remote Quality Assurance & Mentoring Now Available!

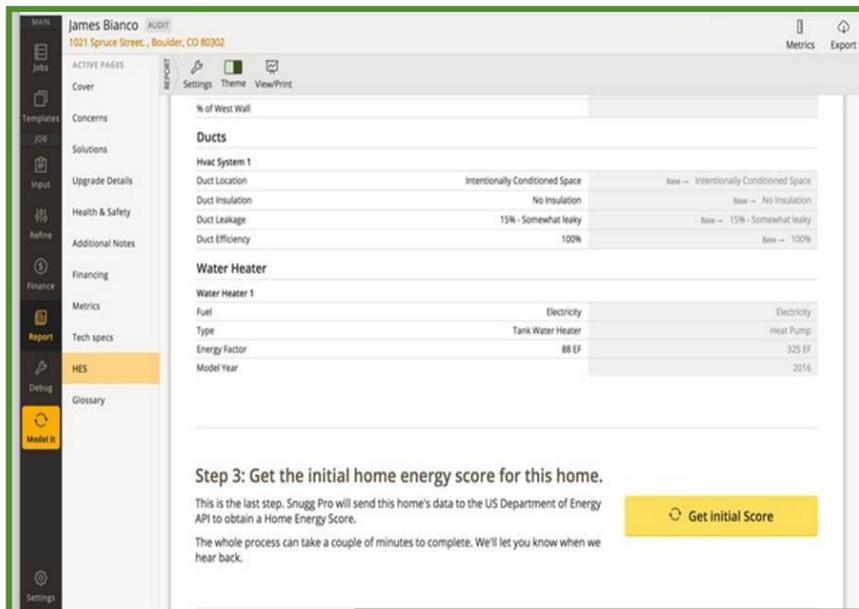
Less costly methods to fulfill mentoring and QA requirements

- ✓ Virtual Mentoring
- ✓ Desktop QA
- ✓ Standard protocols
 - ✓ Assessor submits required photos
 - ✓ Reviewer rescores home for quality check



Application Programming Interface (API)... Simplifies Data Collection

- 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



Courtesy of Snugg Pro

- Software companies/organizations that completed API integration:
 - Cake Systems
 - EnergySavvy
 - Enhabit
 - Franklin Energy
 - Home Energy Score PDX
 - Home Inspector Pro
 - OptiMizer
 - Paperless (Inspection Depot)
 - United Illuminating
 - Snugg Pro

Don't see your software provider or implementation contractor on this list?

- ✓ Tell them you want to deliver this feature to your customers!
- ✓ It's EASY for them to do!

Social Media Campaigns... Getting the Word Out

Winter is coming.
Are you ready?

U.S. DEPARTMENT OF ENERGY
Home Energy Score



Know your home. Know your Score.



Real Estate Integration

✓ Home Energy Information Accelerator

- CA, Northeast, and OR green building registries being developed
- Partners working to auto-populate MLSs and real estate portals with home energy info, e.g. Score
- Home Energy Information Guide now available

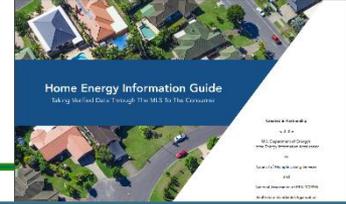
✓ Education Modules (inserts)

- NAR REALTOR® Training (Green Designees)
- FHA Homebuyer Counseling (in development)



Home Energy Information Guide

(CMLS, NAR, RESO, DOE)



Clarifies Three Major Categories of Green Verifications

1. Green Certifications

- The home achieves standards of energy and/or green features
- Popular programs can vary by market



2. Energy Labels

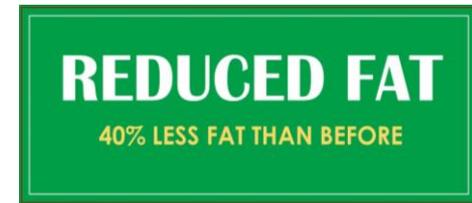
- Applicable to any home
- Compares home to an accepted standard

Nutrition Facts	
Serving Size 1/2 cup (115g)	
Servings Per Container About 4	
Amount Per Serving	
Calories 250	Calories from Fat 130
	% Daily Value*
Total Fat 14g	22%
Saturated Fat 9g	45%
Cholesterol 55mg	18%
Sodium 75mg	3%
Total Carbohydrate 26g	9%
Dietary Fiber 0g	0%
Sugars 26g	
Protein 4g	
Vitamin A 10%	Vitamin C 0%
Calcium 10%	Iron 0%

*Percent Daily Values are based on a diet of 2,000 calories.

3. Verified Energy Improvements

- Proof of investment in upgrades
- Clarifies differences with “comparable” homes



Financing Products Linked to the Score

- **FHA Policy (January 2016)**
 - Allows lenders to provide a **2% stretch on debt-to-income ratios** for borrowers purchasing or refinancing a home
 - Home must score **6 or higher** or reach a 6 or higher with financed improvements
- **Fannie Mae's HomeStyle® Energy Mortgage Loan**
 - Finance up to **15%** of “as completed” home value for energy improvements with purchase or refinance; requires Score or comparable report
 - **\$500 incentive** to lender on each loan

Mortgage Financing Integration

- Fannie Mae and Freddie Mac undertaking analysis and pilots to support more systematic consideration of energy efficiency in loans (“Duty to Serve” regulation)
- Pilots planned for 2018-2020



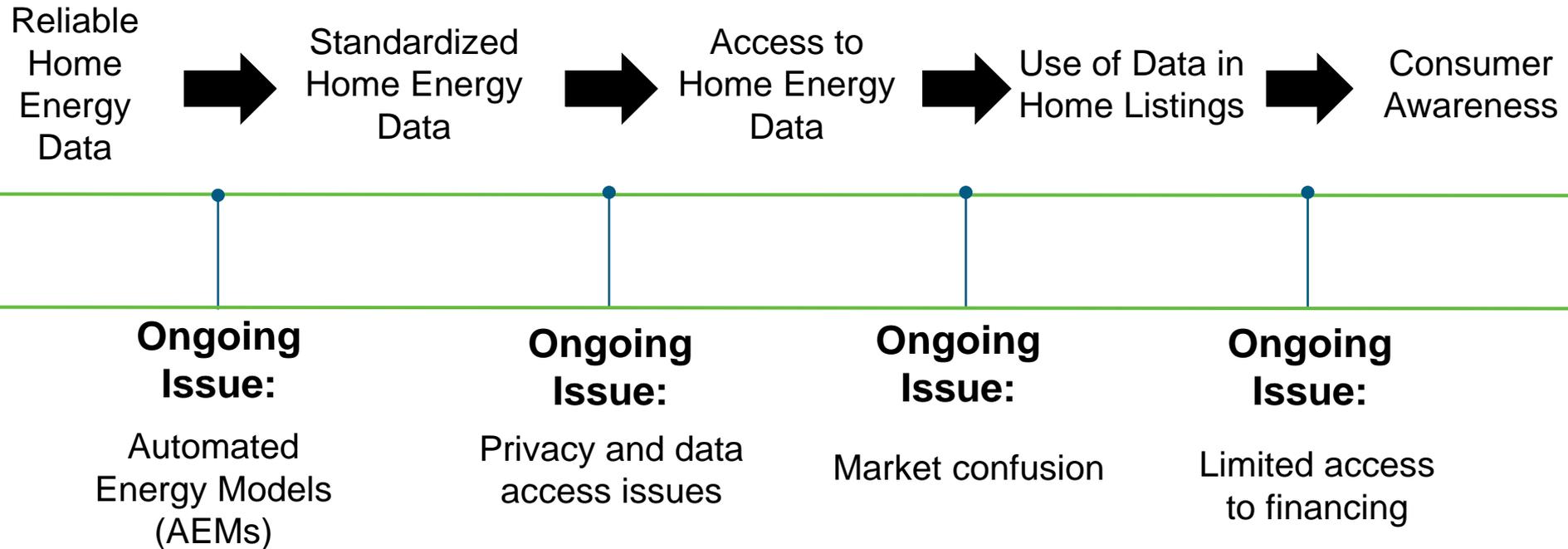
Value Proposition to Various Stakeholders

	States & Cities	REALTORS	Utilities	Consumers
Better serve customers/residents	✓	✓	✓	
Show/capture value of upgrades		✓	✓	✓
Promote energy efficiency	✓		✓	
Reliable estimate of utility costs		✓		✓
Low cost assessment with tailored upgrade recommendations	✓		✓	✓
Standardized data collection	✓		✓	
Better understanding of housing stock	✓	✓	✓	

...and more

Ongoing Issues

Home Energy Information Pipeline



Ongoing Issues, Efforts

■ Automated Energy Models

- Need to clarify to consumers, real estate professionals that these are NOT reliable
- Rocky Mountain Institute analysis using Home Energy Score data
- Potential for improved remote asset assessments

■ Opportunities to reduce confusion and grow pipeline

- Common metric with ENERGY PLUS
 - Estimated BTUs, cost
 - HERS, Home Energy Score, GSEs, LEED, weatherization programs, others?

■ Integration with financing

- Value EE at point of sale AND/OR finance upgrades as part of mortgage
- Fannie Mae/Freddie Mac pilots with DOE and others

From Recent MIT Study... Residential Potential for Climate Mitigation

“Simply requiring **newly built homes** to be more energy efficient would reduce residential emissions by an average of **6 percent** by 2030.

But requiring **existing homes** to be retrofitted would yield **a further 19 percent reduction** of residential emissions, on average”

Thank You!



Contact us for more information at
HomeEnergyScore@ee.doe.gov
or visit our web site at
www.HomeEnergyScore.gov