U.S. DEPARTMENT OF
ENERGY

Office of
ENERGY EFFICIENCY &
RENEWABLE ENERGY

Energy Efficiency & Home Energy Score: Giving Homebuyers Reliable and Meaningful Information

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Agenda

We'll go over –

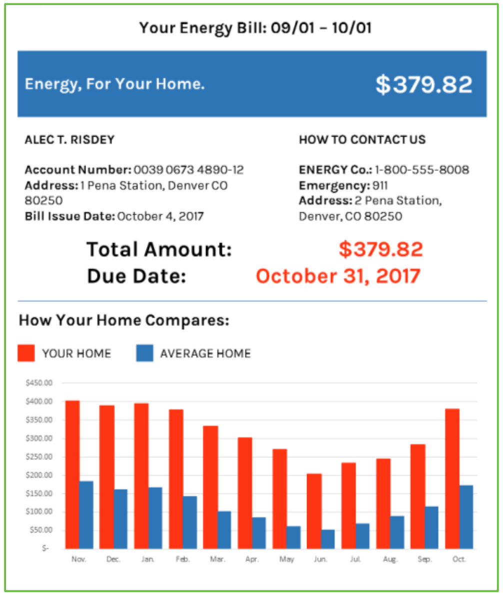
- ✓ The value of energy efficiency to homeowners and buyers
- ✓ The basics of Home Energy Score
- ✓ How to get a Home Energy Score
- ✓ Resources and next steps

The Value of Energy Efficiency

The Value of Energy Efficiency

Helps Reduce Costs:

- ✓ On average, energy costs are higher than either property tax or insurance (U.S. Census)
- ✓ Efficiency investments can help stabilize your bills in the hottest and coolest months, and lower your energy bills overall

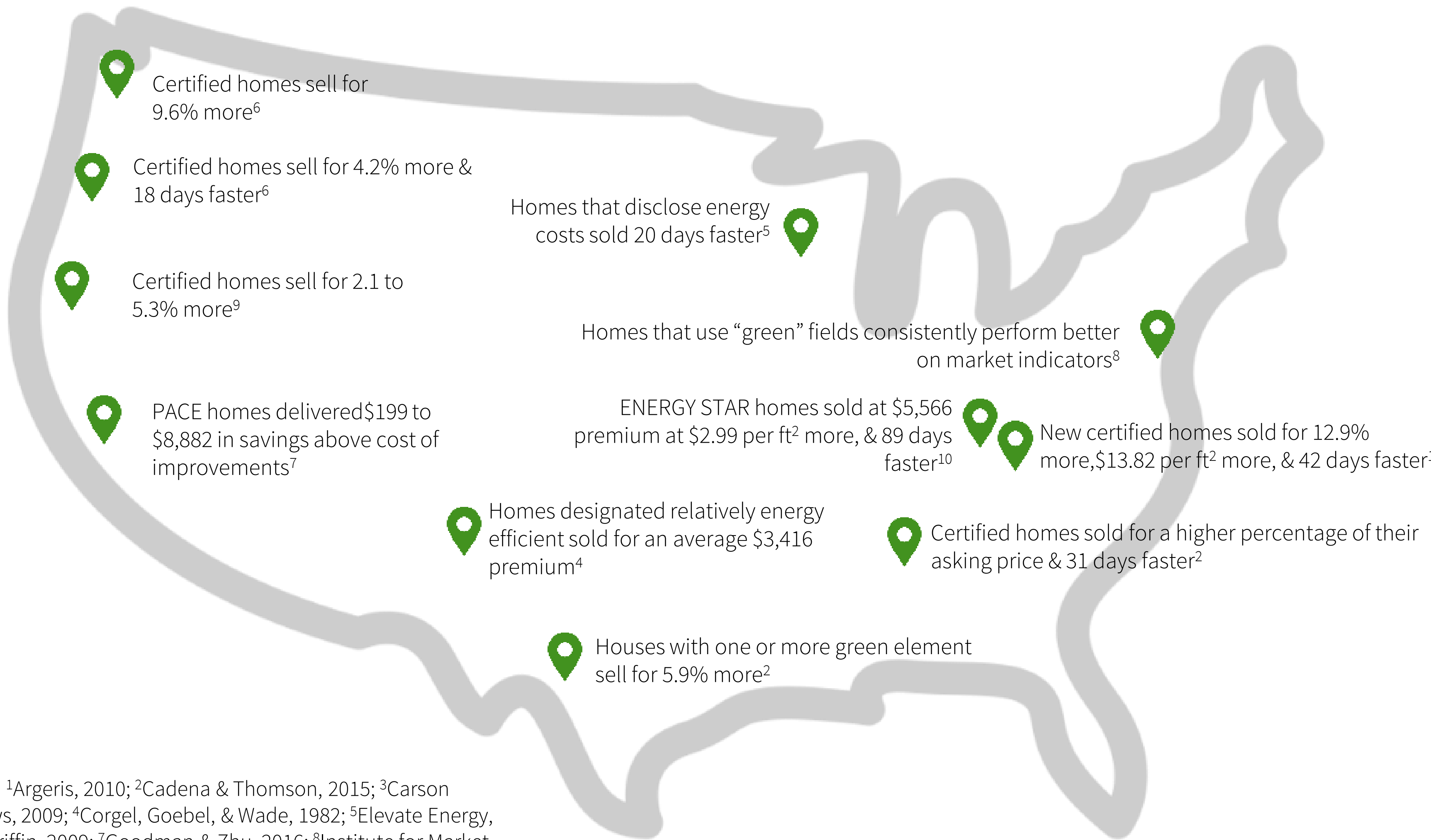


Smart Investment:

- ✓ Attic insulation achieves highest return on investment of all home improvement projects studied at 116.9% (Remodeling Report)
- ✓ Attic Insulation averaged the cheapest upgrade at $1,268 (Remodeling Report)

The Value of Energy Efficiency

Return on Investment: Energy Efficient Homes Sell for More, Faster



Sources: [1]Argeris, 2010; [2]Cadena & Thomson, 2015; [3]Carson Matthews, 2009; [4]Corgel, Goebel, & Wade, 1982; [5]Elevate Energy, 2015; [6]Griffin, 2009; [7]Goodman & Zhu, 2016; [8]Institute for Market Transformation, 2015; [9]Kahn & Kok, 2013; [10]Pfleger et al., 2011.

Sales Premium for Energy Efficient Homes

Studies Show a Sales Premium of:

- **2% to 6%** for designated energy efficient homes [1, 2, 3, 7, 12]
- **$2.99 to $13.82 per square foot** for every dol… …ed on annual electricity bills from efficiency investments [1, 5, 10, 15]
- **$3,416 to $8,882** for desi… …14, 15

Designated energy efficient **Comparable home**

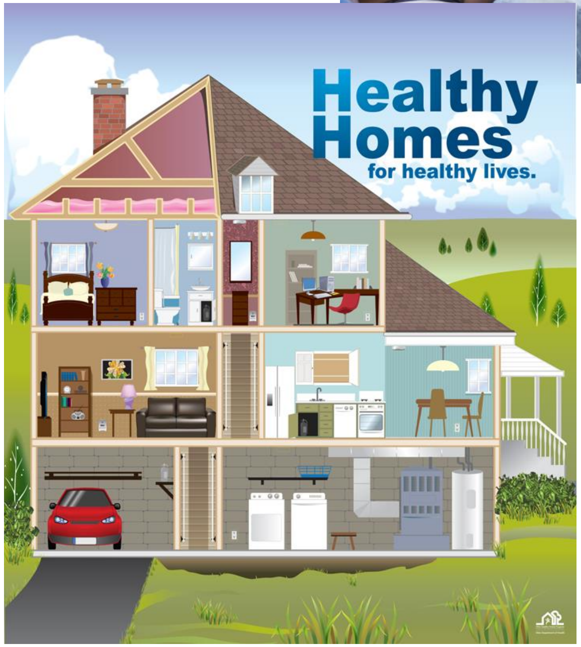
Sources: [1]Argeris, 2010; [2]Brown & Watkins, 2016; [3]Cadena & Thomson, 2015; [4]Carson Matthews, 2009; [5]Dinan & Miranowski, 1989; [6]Elevate Energy, 2015; [7]Griffin, 2009; [8]Goodman & Zhu, 2016; [9]Halvorsen & Pollakowski 1981; [10]Horowitz & Haeri, 1990; [11]Institute for Market Transformation, 2015; [12]Kahn & Kok, 2013; [13]Laquatra, 1986; [14]Longstreth, 1986; [15]Pfleger et al., 2011.

*Not all studies shown have been peer reviewed.

The Value of Energy Efficiency

Improves Quality of Life:

- ✓ Energy improvements are good investments that bring financial relief and "joy"
- ✓ After an insulation upgrade, 61% say greater desire to be home, 95% same or increased sense of enjoyment, and 66% major sense of accomplishment (NARI Report)
- ✓ Energy efficient homes can improve occupant health outcomes related to asthma, hypertension, and allergies (Home Rx Report)



The Value of Energy Efficiency

Because Home Is a Place Where People Should…

- Feel comfortable throughout the year
- Breathe easy with good indoor air quality
- Be in control of how your home uses resources
- Feel good about your impact on your community and the environment
- Enjoy peace of mind about your energy bills

Efficiency can help you achieve all of these things, and more.

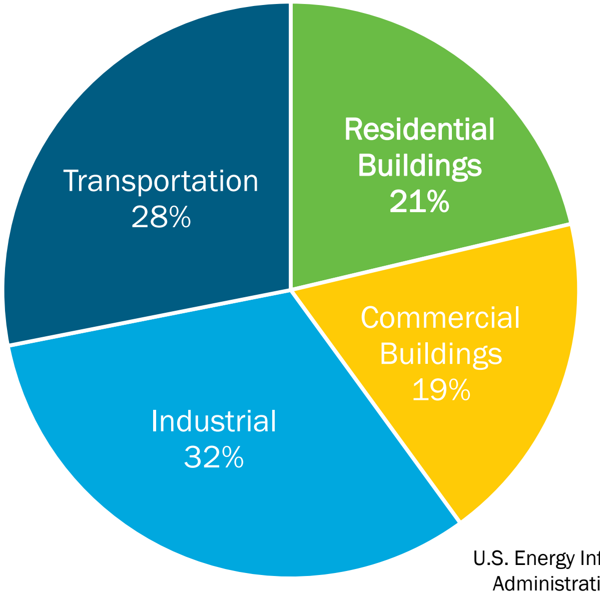
The Value of Energy Efficiency

Bonus! Efficiency Saves Natural Resources

Being an energy-savvy homeowner means YOU can make a difference

- ✓ Increasing efficiency means accomplishing the same or more output with fewer inputs
  - Fewer energy resources consumed
  - Lower rates of air pollution
- ✓ Can increase electricity grid stability
  - Minimize strain on grid at high-consumption times
  - Reduce overall energy costs

Energy Use by U.S. Sector, 2017



U.S. Energy Information Administration, 2017

Home Energy Score

Energy Information Can Be Confusing…

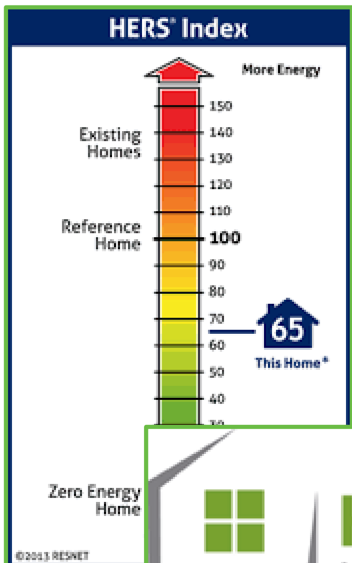
ENERGY STAR

U.S. DEPARTMENT OF ENERGY
Home Energy Score

LEED FOR HOMES

Low-E Windows

Home Performance with ENERGY STAR
Certificate of Energy Improvements



PHIUS

SEER-16 Heat Pump

ZERO ENERGY READY HOME
U.S. DEPARTMENT OF ENERGY

ENERGY STAR Dishwasher

Home Innovation
NGBS GREEN VERIFIER™

R-20 Insulation

LIVING BUILDING CHALLENGE

MLSs are Improving Consistency & Clarity

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

USDA ORGANIC

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

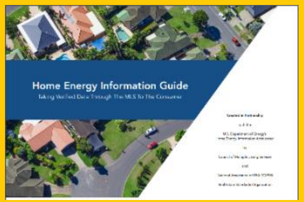
Amount Per Serving	
Calories 250	**Calories from Fat** 130
	% Daily Value*
Total Fat 14g	**22%**
Saturated Fat 9g	**45%**
Cholesterol 55mg	**18%**
Sodium 75mg	**3%**
Total Carbohydrate 26g	**9%**
Dietary Fiber 0g	**0%**
Sugars 26g	
Protein 4g	
Vitamin A 10%	Vitamin C 0%
Calcium 10%	Iron 0%

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

3. Verified Energy Improvements

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

REDUCED FAT
40% LESS FAT THAN BEFORE



More Information available in the Home Energy Information Guide
(CMLS, NAR, RESO, DOE)

What is Home Energy Score?

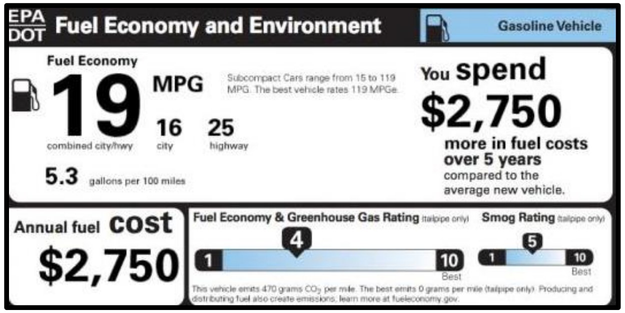
Home Energy Score

https://www.youtube.com/watch?v=IQ8yw1Tpyjg&t=4s

What is Home Energy Score?

A miles-per-gallon rating for homes*

- ✓ Gives potential homebuyers **information** about a home's energy features and estimates home energy costs
- ✓ Provides new homeowners **guidance** on energy improvements that can make the home more comfortable and less expensive



The Home Energy Score is –

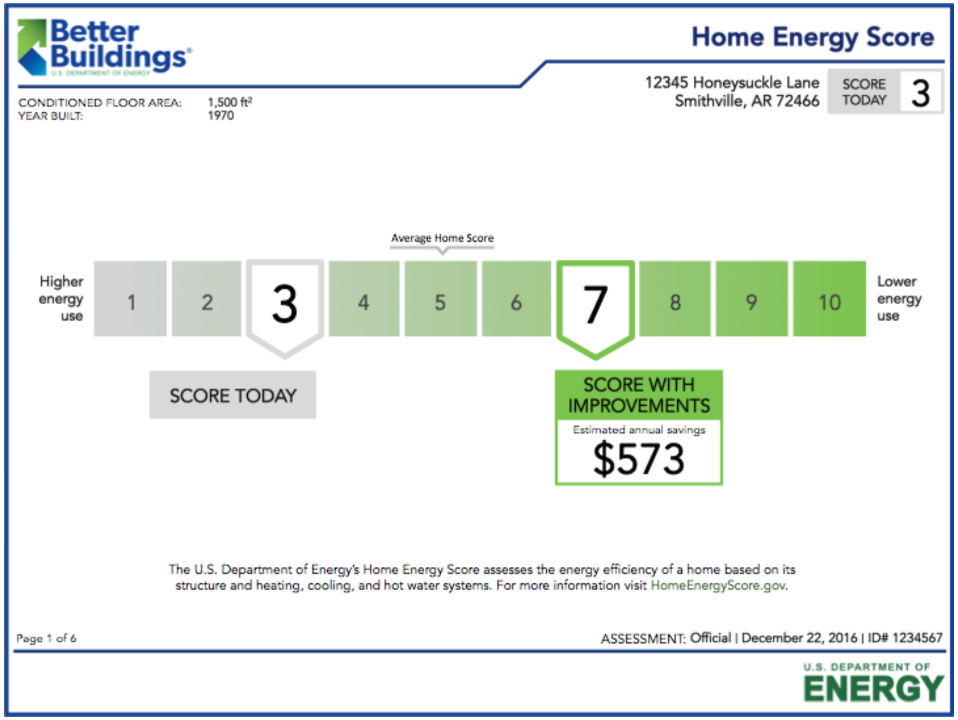
- ✓ **Fast.** Takes less than one hour in most homes.
- ✓ **Affordable.** Free for Assessors to keep costs low.
- ✓ **Simple.** Easy to understand 1 to 10 scale.
- ✓ **Credible.** Created through robust testing and analysis.
- ✓ **Flexible.** Available through various programs and software.

*Applicable for single-family homes and townhomes only.

What Does the Score Tell You?

Important information in an easy-to-understand way

- ✓ Score Today: where your home falls on the 1-to-10 scale
- ✓ Score with Improvements: where your home will be if recommendations are made.
- ✓ Five page report: home facts and cost-effective recommendations for energy efficient improvements



What does a Score Mean?

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

- ✓ **Score of 1 – Inefficient Home**

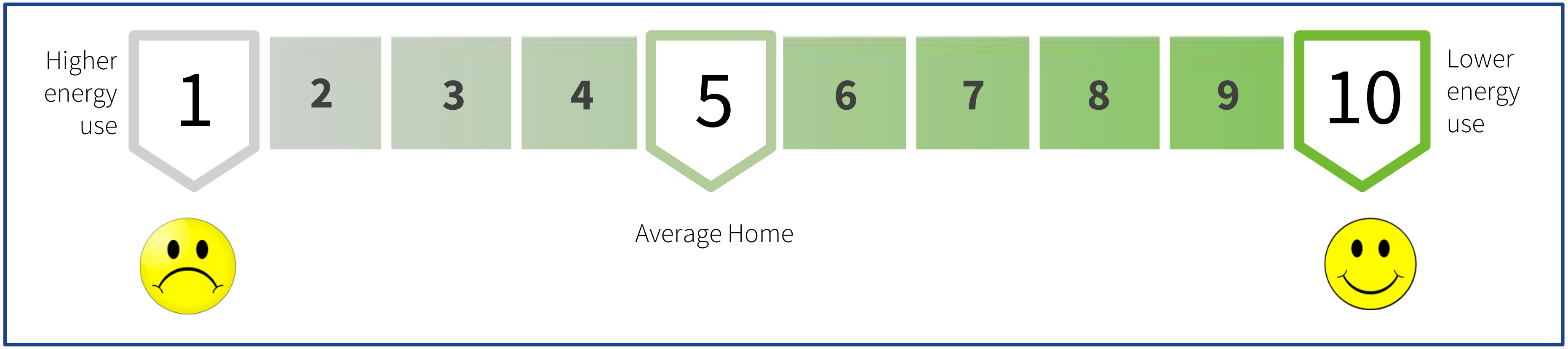
  Home is expected to use **more energy than 85%** of U.S. homes

- ✓ **Score of 5 – Average**

  Home uses an **average** amount of energy compared to U.S. homes

- ✓ **Score of 10 – Very Efficient Home**

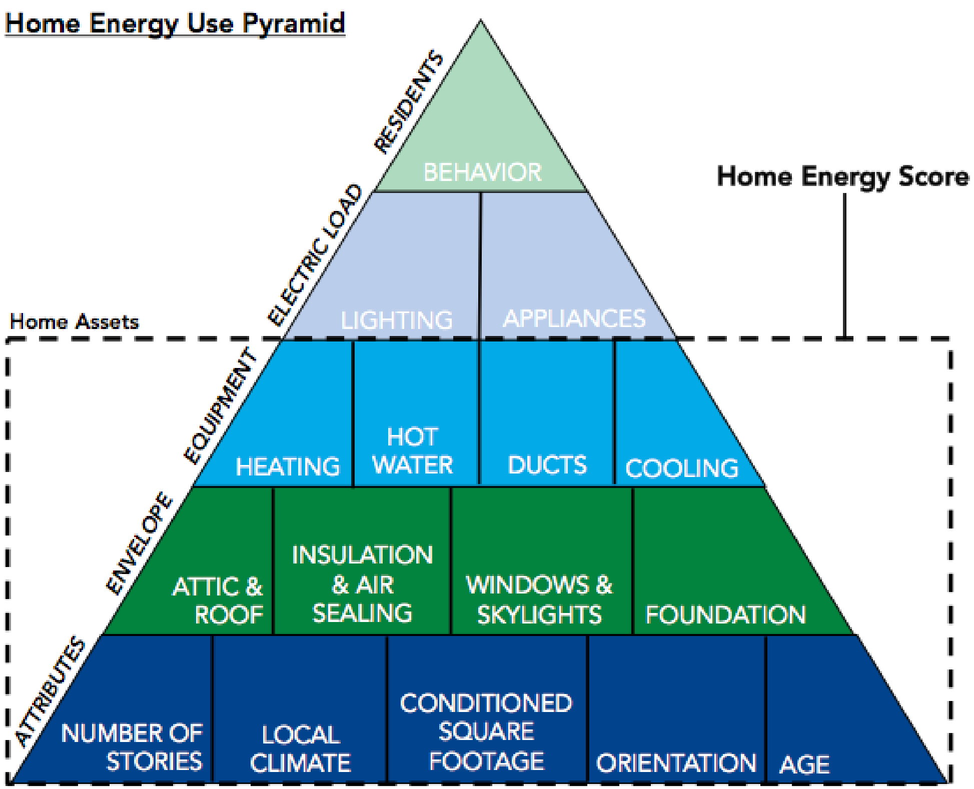
  Home is expected to use **less energy than 90%** of U.S. homes



How Is the Score Calculated?

The Score is based on a home's energy-related assets

- ✓ Excludes resident-dependent behaviors and electronics from analysis
- ✓ "Apples to apples" comparison between homes
- ✓ Better at predicting costs than bills of prior occupants



House - Specific Recommendations

Reliable, objective information homeowners can act on

Recommended Improvements

<u>REPAIR NOW</u>. These improvements will save you money, conserve energy, and improve your comfort.

- **Air Tightness:** Have a professional seal all the gaps and cracks that leak air to save **$110** / year
- **Ducts 1:** Add insulation around ducts in unconditioned spaces to at least R-6 to save **$43** / year
- **Attic 2:** Increase attic floor insulation to at least R-19 to save **$57** / year
- **Ducts 2:** Add insulation around ducts in unconditioned spaces to at least R-6 to save **$23** / year
- **Ducts 2:** Have a professional seal all the gaps and cracks that leak air to save **$74** / year

<u>REPLACE LATER</u>. These improvements will help you save energy when it's time to replace or upgrade.

- **Windows:** Choose ones with an ENERGY STAR label to save **$61** / year
- **Water Heater:** Choose an ENERGY STAR appliance to save **$159** / year
- **Electric Heat Pump:** Choose an ENERGY STAR appliance to save **$32** / year

Comments

Current local incentives may make this house a good candidate for a new water heater.

- ✓ Recommendations categorized as "Repair now" and "Replace later"; based on cost-effectiveness using state average utility rates
- ✓ Some Partners and Assessors provide their own **custom recommendations**
- ✓ Tool can generate "Upgrade Score" based on custom recommendations

How to get a Home Energy Score

When Should You Get A Home Energy Score?

When buying… to get as much information as possible

- ✓ Many home inspectors can offer the Score as part of the home inspection

After moving in… to inform energy improvements

- ✓ Get cost-effective investments that improve the Score, increase comfort, and lower bills

When listing… to showcase energy improvements

- ✓ Show the Score in the MLS listing to attract buyers
- ✓ Use MLS Green Fields to make the listing searchable by Score

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

State & Local Loan Financing Options may apply as well

- ✓ Check out www.dsireusa.org to see what might be available in your area

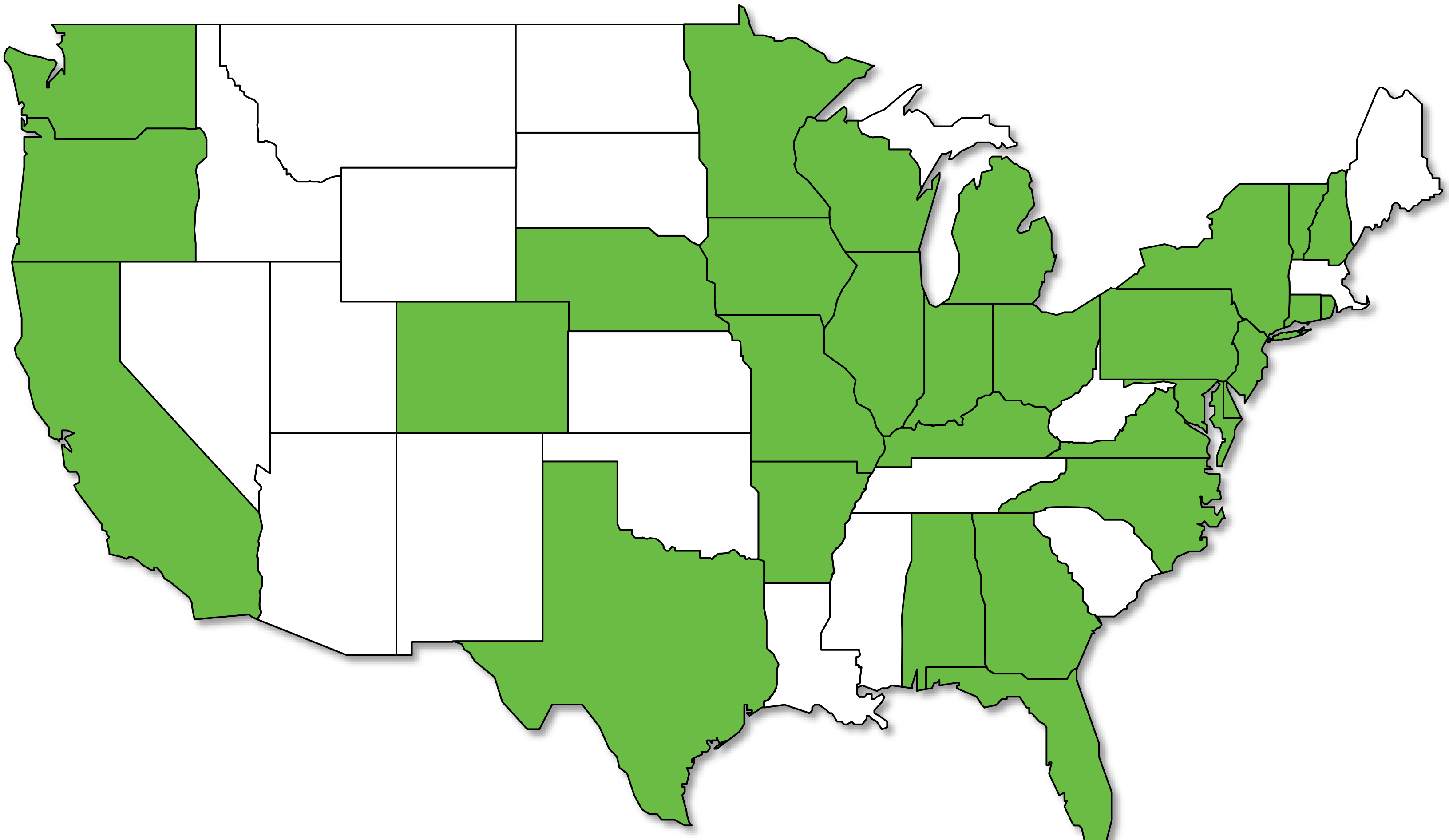
Mortgage Financing Integration

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

How Can You Get A Home Energy Score?

Over 500 Assessors nationwide representing over 30 Partner organizations!



How Can You Get A Home Energy Score?

Northeast
Conservation Consultants, Inc.
Efficiency Vermont
Energize Connecticut
GDS Associates
New Jersey Natural Gas
PSEG Long Island

Rockies / West Coast
Build It Green
City of Portland, Oregon
Colorado Energy Office
Enhabit
Eugene Water & Electric Board
Oregon Department of Energy
Stopwaste

Mid-Atlantic
Allied Energy Efficiency Experts
Western North Carolina Green Building Council

Southeast
Alabama Department of Economic and Community Affairs – Energy Division
Arkansas Economic Development Commission – Energy Office
Southface Energy Institute

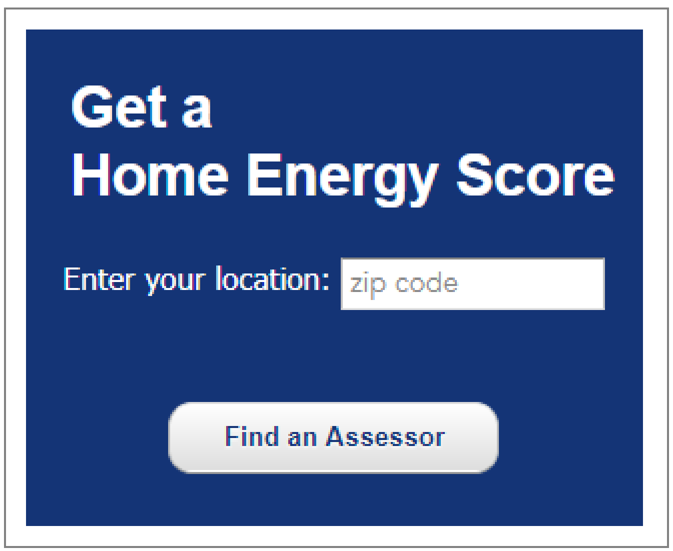
Midwest
Columbia Water & Light
Focus on Energy
Greater Cincinnati Energy Alliance
Green Home Institute
Solutions for Energy Efficient Logistics
Walker-Miller Energy Services

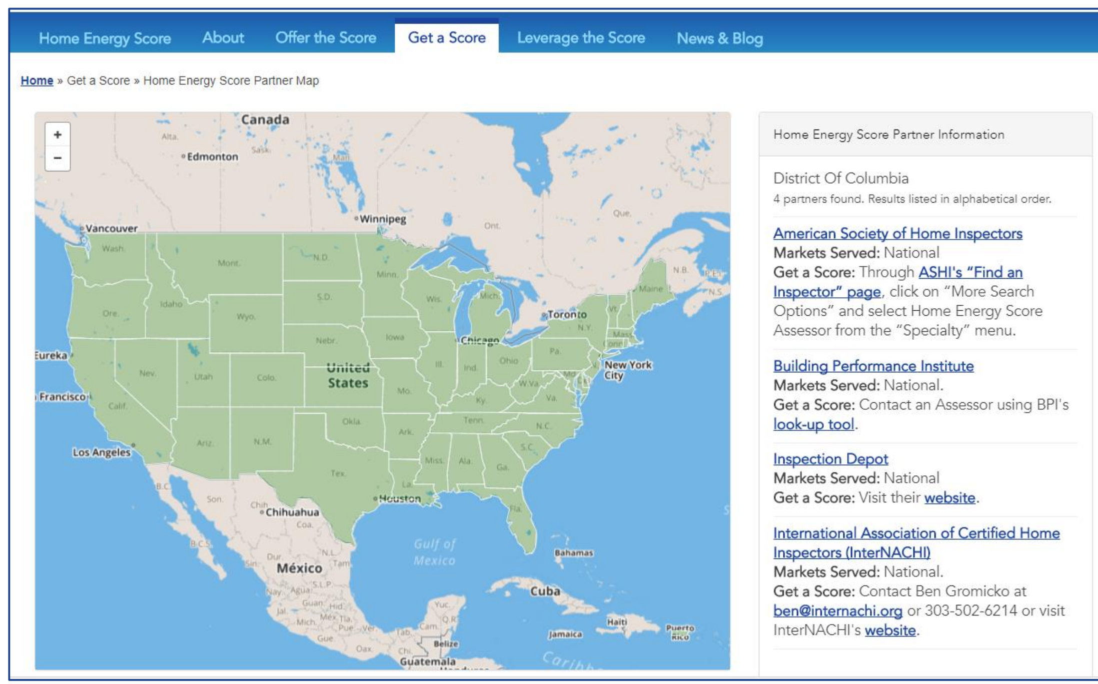
Nationwide
American Society of Home Inspector
Building Performance Institute
CLEAResult
Inspection Depot
International Association of Certified Home Inspectors

How Can You Get A Home Energy Score?

Visit www.homeenergyscore.gov/findanassessor to find a professional Home Energy Score Assessor near you!

Can't find one near you? See our Partner Map to find which Partners could onboard a new Home Energy Score Assessor in your area. Visit www.homeenergyscore.gov for more resources and information.

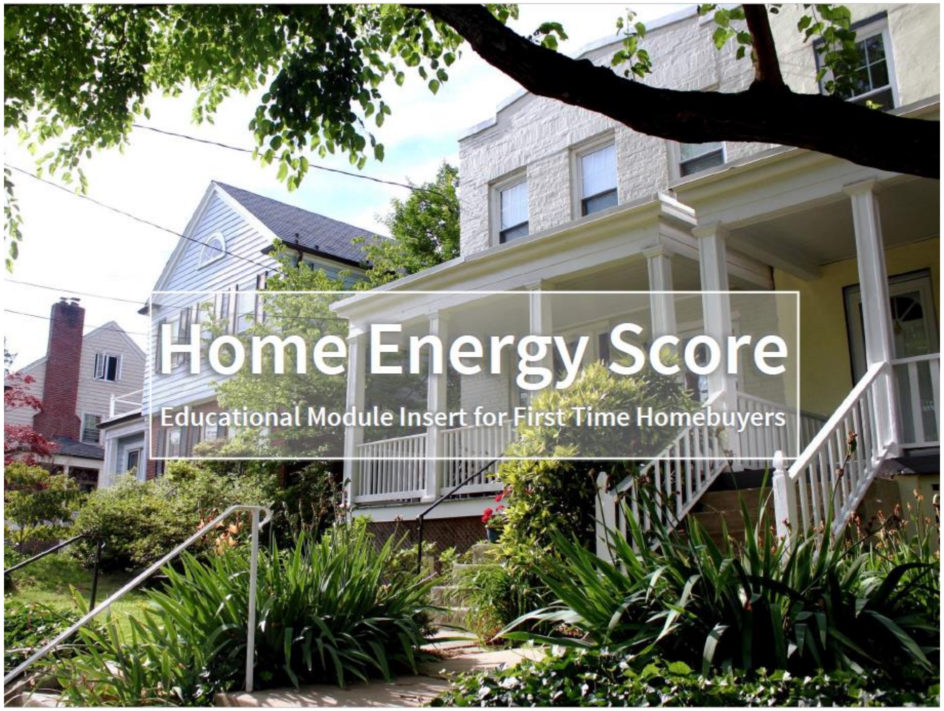




Resources and Next Steps

How You Can Help Homebuyers

Share your knowledge of Home Energy Score



Home Energy Score training for First-Time Homebuyers is available!

- ✓ Ten slides detailing Home Energy Score
- ✓ Can be included within any existing homebuyer workshops and classes
- ✓ Available from DOE for free

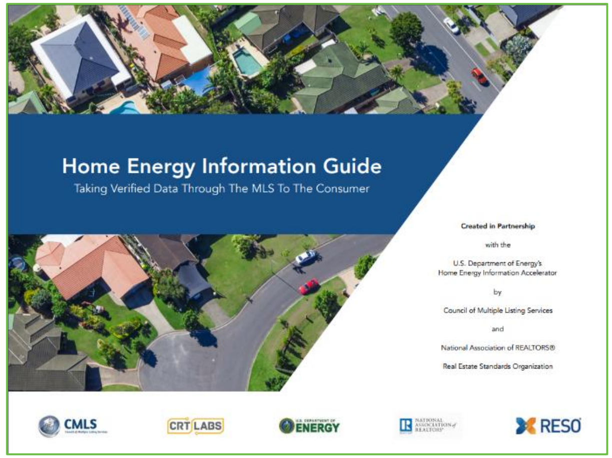
https://betterbuildingssolutioncenter.energy.gov/sites/default/files/attachments/Home%20Energy%20Score%20First%20Time%20Homebuyer%20Education%20Module.pdf

How You Can Help Homebuyers

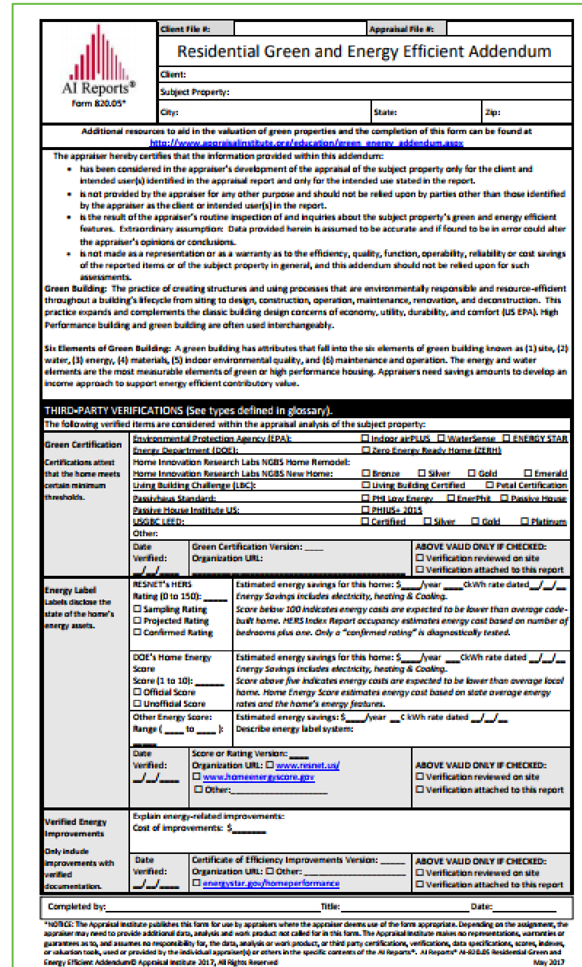
Share resources with stakeholders in your community

For REALTOR® Associations:

For Real Estate & MLS Leaders:

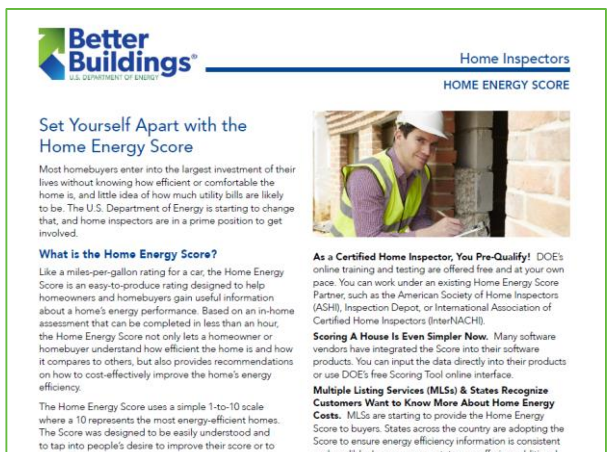


For Home Appraisers:



For Green Designation Trainers:

For Home Inspectors:



How You Can Help Homebuyers

Share other resources from the Department of Energy

Office / Program	URL
Asset Score	energy.gov/eere/buildings/building-energy-asset-score
Energy Saver Guide	energy.gov/energysaver
Home Energy Score	homeenergyscore.gov
Home Performance with ENERGY STAR	energystar.gov/homeperformance
Zero Energy Ready Homes	energy.gov/eere/buildings/zero-energy-ready-home
Energy Rebates & Incentives	dsireusa.org
Weatherization Assistance Program	energy.gov/eere/wipo/weatherization-assistance-program

Tips from DOE’s Energy Saver Guide

Where to Air Seal in a Home

1 Plumbing and utility access
2 All ducts
3 Sill plates
4 Outlets and switches
5 Water and furnace flues
6 Recessed lights
7 Attic entrance
8 Chimney flashing
9 Dropped ceilings
10 Door frames
11 Window frames

Visit EnergySaver.gov to download this guide as a PDF or ebook and to order limited numbers of hardcopies. Bulk quantities are also available for purchase.

	Add Insulation to Attic		
Zone	Uninsulated Attic	Existing 3–4 Inches of Insulation	Floor
1	R30 to R49	R25 to R30	R13
2	R30 to R60	R25 to R38	R13 to R19
3	R30 to R60	R25 to R38	R19 to R25
4	R38 to R60	R38	R25 to R30
5 to 8	R49 to R60	R38 to R49	R25 to R30

https://energy.gov/sites/prod/files/2017/10/f37/Energy_Saver_Guide-2017-en.pdf

Tips from DOE's Energy Saver Guide

Energy fixes almost any home* can implement

1. Put air sealant in cracks and gaps in building envelope where you feel drafts
2. Clean and replace HVAC equipment air filters regularly
3. Caulk and insulate air ducts
4. Replace old lightbulbs with LEDs
5. Replace old appliances and electronics with new ones with ENERGY STAR label
6. Weatherize your home with window coverings and thermal blinds
7. Program your thermostat to lower power settings, especially when you are away from home

*but get an energy assessment to be sure!

Next Steps

What can you do?

- Offer the training
- Connect with Home Energy Score Partners
- Spread the word about Home Energy Score to your stakeholders
- Tell us what you need to spread the word

Thank You!

HomeEnergyScore@ee.doe.gov

www.HomeEnergyScore.gov