Better Buildings®
U.S. DEPARTMENT OF ENERGY

Home Energy Efficiency for Real Estate Professionals

April, 2017

U.S. DEPARTMENT OF ENERGY

This Presentation Covers:

- The importance of energy efficiency to homebuyers
- Work being done to help you meet clients' desires for home energy information
- How to keep up-to-date with home energy certifications, labels, and ratings for your clients
- Links to resources for learning more

Why Care About Residential Energy Efficiency?

Improving residential energy efficiency helps to:

- Improve in-home comfort for home owners, buyers, renters
- Save families money on energy bills
- Reduce wasted energy resources
- Foster growth of energy efficiency jobs in local economy
- Stabilize monthly home costs as energy prices change
- Mitigate health impacts of homes, including mold, allergens, and pests

Why Do Homeowners & Buyers Care About Energy Efficiency?

Helps Reduce Costs:

- U.S. Census: On average, energy costs are higher than either property tax or insurance for U.S. homes at $2,506 per year

Smart Investment:

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

Improves Quality of Life:

- NARI Report: Energy improvements are good investments that bring financial relief and "joy"
  - Insulation Upgrade: 61% say greater desire to be home, 95% same or increased sense of enjoyment, and 66% major sense of accomplishment
- DOE's Home Rx Report: Energy efficient homes can improve occupant health outcomes related to asthma, hypertension, and allergies.

Buyers need access to energy efficiency information that is credible and easy to understand.

Sellers need tools that can accurately appraise the value of improved energy performance.

As a real estate professional, you can be the bridge between your clients and the energy information they want.

Studies Nationwide Show Energy Efficient Homes Sell for More, Faster

- Certified homes sell for 9.6% more[6]
- Certified homes sell for 4.2% more & 18 days faster[6]
- Homes that disclose energy costs sold 20 days faster[5]
- Certified homes sell for 2.1 to 5.3% more[9]
- Homes that use "green" fields consistently perform better on market indicators[8]
- PACE homes delivered$199 to $8,882 in savings above cost of improvements[7]
- ENERGY STAR homes sold at $5,566 premium at $2.99 per ft^2 more, & 89 days faster[10]
- New certified homes sold for 12.9% more,$13.82 per ft^2 more, & 42 days faster[1]
- Homes designated relatively energy efficient sold for an average $3,416 premium[4]
- Certified homes sold for a higher percentage of their asking price & 31 days faster[2]
- Houses with one or more green element sell for 5.9% more[2]

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.

*Not all studies shown have been peer reviewed.

The Research Says: Homebuyers Value Energy Efficiency

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 dollar saved on annual electricity bills from efficiency investments [1, 5, 10, 15]
- **$3,416 to $8,882** for designated energy efficient homes [4, 8, 9, 12, 13, 14, 15]

Designated energy efficient

VS.

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 Research Says: Homebuyers Value Energy Efficiency

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 doll[illegible]d on annual electricity bills from efficiency investments [1, 5, 10, 15]
- **$3,416 to $8,882** for de[illegible] [3, 14, 15]

SOLD 18 TO 89 DAYS FASTER [1, 3, 6, 7, 11, 15]

Designated energy efficient

VS.

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.

Providing Energy Information Can Help Reduce Uncertainty

Elevate Energy, 2015: Chicago Homes that Disclose Energy Costs Spend Less Time on Real Estate Market

- Homes that provide energy costs: median 43 days on market; 66% closing rate
- Homes that did not provide energy costs: median 63 days on market; 53% closing rate

Hill et al., 2016: In EU, Canada, Australia, homebuyers appreciate having more information rather than less; poor ratings don't discourage home purchases, but do inform energy upgrades

- This helps them make the most informed decision possible, even if they will need to fix an energy feature of the home
- Analysis of European disclosure programs shows homebuyers do not use ratings to discourage home purchase, rather simply to inform sale (p. 11)
- 2013 EU Study: 2% - 6% appreciation in home value attributed to one-letter rating improvement

Voluntary disclosure may be a good option for your clients selling their homes

Source: Hill et al., 2016. Predicting Home Energy Rating and Disclosure Program Impacts for North American Jurisdictions. ACEEE Summer Study Paper.

If it Doesn't Impact Home Purchases, Why Do We Like Energy Information?

Knowledge is power!

- Energy information with recommendations influences new home owners into making energy renovations

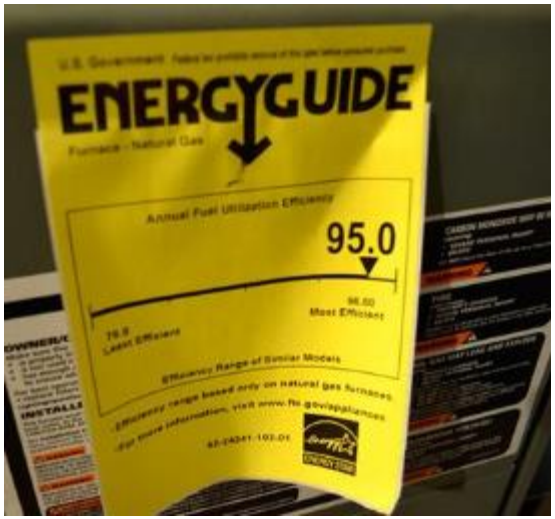
Assessments of Home Energy Ratings on Conversion Rates

Jurisdiction	Portion of Buyers Influenced by Rating / Disclosure Report Recommendations When Making Renovations
Austin, TX	12% in first year of program (ACEEE, 2011)
Australia (ACT)	15% (Energy Consult, 2006)
France	37% (ADEME, 2012)
Portugal	17.5% (ADENE, 2015)
The Netherlands	22% (Murphy, 2014)

Source: Hill et al., 2016. Predicting Home Energy Rating and Disclosure Program Impacts for North American Jurisdictions. ACEEE Summer Study Paper.

How to Provide Energy Information: DOE's Home Energy Score

- A "miles-per-gallon" rating for homes
- Affordable, reliable, & easy way to understand a home's energy performance
- Third-party verified
- Any single-family or town-home can get a Home Energy Score
- Helpful for any of your clients
  - Shows seller cost-effective investments to improve their home's score before they sell
  - Lets seller showcase energy improvements they have made to their home at time of sale
  - Tells potential homebuyer information about a home's energy features



Home Energy Score: A Tool for All Homes

Better Buildings
U.S. DEPARTMENT OF ENERGY

Home Energy Score

12345 Honeysuckle Lane
Smithville, AR 72466

SCORE TODAY 3

CONDITIONED FLOOR AREA: 1,500 ft²
YEAR BUILT: 1970

Average Home Score

Higher energy use | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Lower energy use

SCORE TODAY

SCORE WITH IMPROVEMENTS
Estimated annual savings
$573

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.

Page 1 of 6

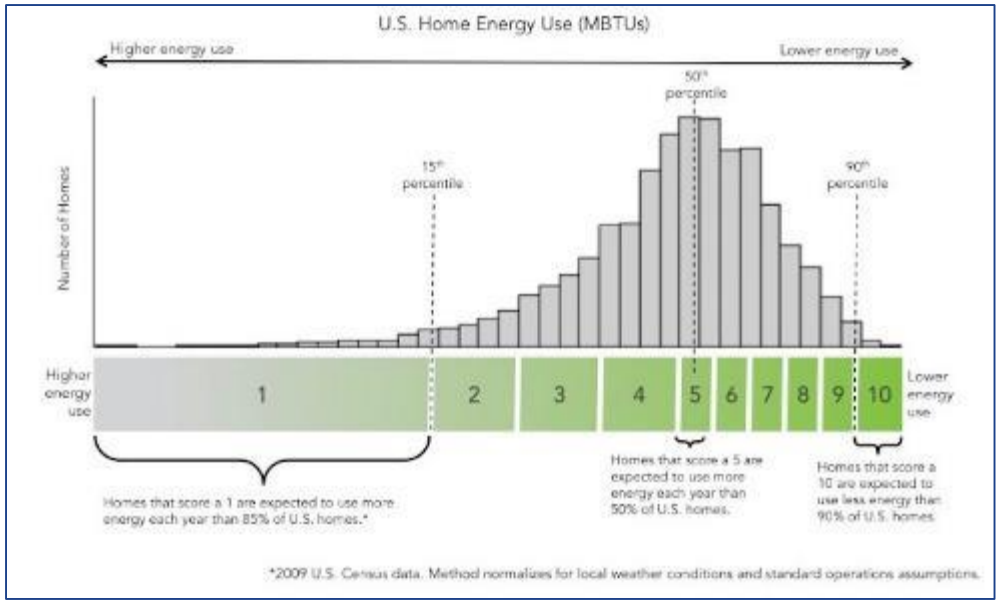
ASSESSMENT: Official | December 22, 2016 | ID# 1234567

U.S. DEPARTMENT OF ENERGY

Home Energy Score: What It Means

The Score is more useful than looking at prior utility bills

- Assumes average weather for that location
- Controls for impacts due to occupant behavior by assuming "average" behavior for all homes



Score with Improvements:

- Reflects how the home will score if cost-effective efficiency improvements are made

Score of 1: High energy costs

- These homes are expected to use more energy each year than 85% of U.S. homes

Score of 5: Average energy costs

- Approximately 50 percent of homes in the U.S. use less energy

Score of 10: Low energy costs

- Homes expected to use less energy than 90% of U.S. homes; easier to keep living space comfortable

Other "Green Home" Designations to Know About

Certified Passive House
Passive House Institute

HOME PERFORMANCE WITH ENERGY STAR

Home Innovation
NGBS GREEN VERIFIER™

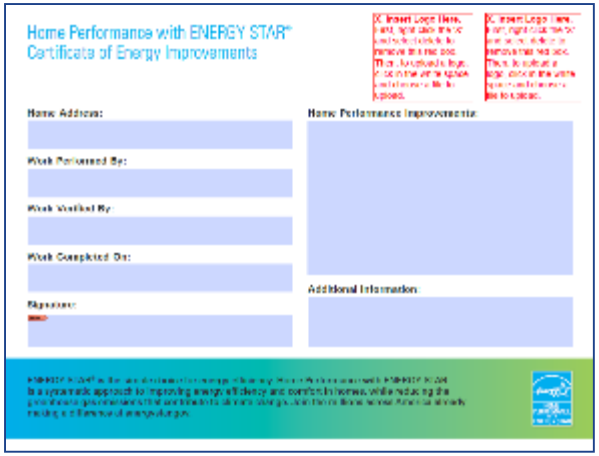
RESNET HERS® INDEX

U.S. GREEN BUILDING COUNCIL LEED CERTIFIED USGBC
U.S. GREEN BUILDING COUNCIL LEED SILVER USGBC
U.S. GREEN BUILDING COUNCIL LEED GOLD USGBC
U.S. GREEN BUILDING COUNCIL LEED PLATINUM USGBC

ZERO ENERGY READY HOME
U.S. DEPARTMENT OF ENERGY

Example: Home Performance with ENERGY STAR Certificate of Completion

- Proof home underwent energy efficiency upgrades to improve performance
  - A systematic approach to improving energy efficiency and comfort in homes
  - Reduces greenhouse gas emissions that contribute to climate change
- Improvements must be completed by participating contractors
- Third party verified by an organization separate from the contractor


Home Performance with ENERGY STAR®
Certificate of Energy Improvements

Home Address:

Work Performed By:

Work Verified By:

Work Completed On:

Signature:

Home Performance Improvements:

Additional Information:

HOME PERFORMANCE WITH ENERGY STAR

Green Fields with Home Energy Score Added to MLSs

- REColorado (Denver, CO)
- Aspen Glenwood (CO)
- Cincinnati (OH)
- MRIS (DC, VA, MD)
- NEREN (VT, NH)
- & Others!

Real Estate Professional Education

Agents need resources to learn how to enter data fields correctly

- "0" HERS Rating = Perfect Score / Zero Energy Home!
- "0" Home Energy Score = Nonsensical / Terrible Score!
- ENERGY STAR Appliances ≠ Home ENERGY STAR Certification

Use resources provided on DOE's Home Energy Information Accelerator website

≠

No Green Fields in the MLS?

Add Home Energy Score or other green label in the comments or "remarks" section

- Simply upload the verifying document from the homeowner as an attachment
- No need to wait for green fields to be available

Advocate for green field adoption on your MLS

- Ask the MLS to achieve RESO's Silver Certification to standardize the data entry

Detached Single
MLS #: 0411102
LDR: 05/10/2004
CTGF: A/I
LD: 05/10/2004
MRKT TIME: 109
OMD:
LISTING MRKT TI
CONT DT: 05/15/2004
SELLING OFC:
CLSD DT:
SELLING AGT:
ADDRESS: 20W456 WESTMINSTER DRIVE
CITY: DOWNERS GROVE
DIR: WOODWARD SOUTH OF 87TH STR TO W
BLT: 1987
B78: N
OWN: Fee Simple
CRP: UNINCORPORAT
MODEL: GRANT
DIM: 72 X 125
RMS: 6 BR: 3 BTH: 2 MBB: N
CARS: 2 WF: N Tax: $2,687
SAS: N PIN: 1006305019

ASM:
FREQ: Not Applicable
WI:
GRS: BROMB DIST#: 113
JH: OLD QU DIST#: 113
HS: LEMONT DIST#:
COORDINATES: NORTH: 0 SOUTH: 10 EAST: 0

ROOM NAME	SIZE	LEVEL	FLOORING	WIN TRMT	ROOM NAME	SIZE
Living Room:	16X13	Main Level	Hardwood	N	4th Bedroom:	
Dining Room:					UTL:	13X9
Kitchen:	18X11	Main Level	Vinyl	Y		
Family Room:	20X14	Lower	Hardwood	Y		
Master Bedroom:	16X12	2nd Level	Carpet	Y		
2nd Bedroom:	13X10	2nd Level	Carpet	Y		
3rd Bedroom:	11X9	2nd Level	Carpet	Y		

NC: N
OD:
AGE: 11-25 Years
KIT: Eating Area-Ta
AIR: Central Air
HEA: Gas, Forced Air
AMN: Park/Playground
IMPW: Lake Michigan
APP: Oven/Range, Microwave, Dishwasher, Washer, Dryer, Disposal
IMPS: Sewer-Public
ATC: Unfurnished
IMPO: Curbs/Gutters,
BAS: Crawl, None
INF:
BAT: Shared Master Bath
LDS: Landscaped Pr
FIN:
Lot Size: Less Than .2
DRV: Concrete
MAI: None
ELE: Circuit Breakers
NCO:
EQP: Humidifier, Ceiling Fan, Sump Pump, Sprinkler-Lawn
OTR:
EXT: Brick (BR)
POS: Immediate
FEA: Patio, Storage Shed
ROF: Asphalt/Glass
FND: Concrete
STY: Bi-Level, Tri-Le
FPL: cation-Family Room, Gas Logs
TPE: Split Level
GAR: 5 Car Garage, Garage Door Opener(s) (Auto)
TRM:
PK: None/Not Applicable

Remarks: IMMACULATE BRICK HOME, BEAUTIFULLY UP-DATED. EAT-IN-KITCHEN, FIREPLACE
LANDSCAPED, SPRINKLER SYSTEM, LRG. PATIO AND HOT TUB, GREAT NEIGHBORHOOD 1 BLO
55 AND I-355 2003 TAXES ONLY $2700. PLS. SEE SHOWIUNG INSTRUCTIONS FOR CO-ORDIN

INTERNET LISTING: All
REMARKS INTERNET: Y
AI: Y
FD: Y
HEM: N
LIST: Exclusive Agency
CC: 2.5% - $200
SCI: Limited Service/Entry Only
EMAIL
SHO: CALL 630-854-0883 OWNER PREFERS TO SHOW & NEG.
OWNER: AMY MUSCARNERO
AON: N
PHON
BROKER: AMERICAN CAPITAL REALTY INC.
ID#: 15801
PHON
AGENT: PARRY SINGH
ID#: 139347
PHON
CO-LIST:
AAN:

Image Source: http://www.vacantlandinfo.com/images/MLSsm.jpg

Financing Options for Energy Efficiency Improvements

Finance up to 15% of "as completed" home value for energy improvements

- $500 incentive to lender on each loan
- Pay off existing energy improvement debt (including PACE)

Requires a Home Energy Score, HERS report, or comparable locally-supported report

- Finance up to $3,500 in weatherization or water-efficient improvements with no energy report

Source: Fannie Mae HomeStyle Energy Mortgage Loan Real Estate Fact Sheet

Additional Loan Opportunities

FHA's "stretch" policy

- Allows borrowers to qualify for a 2% stretch on debt-to-income ratios for homes that score a 6 or higher, or for improving less efficient homes to that threshold
- Aligned with Fannie Mae's HomeStyle Energy policy

Property Assessed Clean Energy (PACE)

- $2.2 billion financed in California for energy efficiency, renewable energy, and water efficiency
- Other states looking to adopt
- Home Energy Score can be used to identify cost-effective measures, provide an objective estimate of savings, and document value after improvements are completed

State & Local Loan and Financing Options

- Visit www.dsire.org to learn about financing and rebate options available in your area

What Can You Do?

Ask sellers if their home has any third-party certifications, and include them on the MLS

- Clients with efficient homes can better market its value
- Homes certified as "green" sell for more, and faster!

Encourage buyers to value energy efficiency in their home purchasing decisions

- An energy efficient home is likely to have lower and more stable energy bills, and more comfortable living spaces
- Ensure every client gets a beautiful, comfortable, and functional home

Encourage all clients to get a Home Energy Score

- Improving energy efficiency of homes may qualify for financing & incentives
- If desired, list the Home Energy Score on the MLS. Fix it before you list it!
- Team up with home inspectors that offer the Home Energy Score

Encourage your local MLS to include "green fields"

- This will help standardize listing inputs and engage more real estate professionals
- Advocate for the MLS to achieve RESO's Silver Certification, which includes green fields

Learn more! Earn Continuing Education Units (CEUs)

This presentation is just the start! Courses are available online and in person, some of which offer Continuing Ed. Units.

Build It Green:

- Certified Green Building Professional Courses

Earth Advantage:

- Demystifying the Green Home
- Making Savvy Home Energy Upgrades
- Accredited Green Appraiser

InterNACHI:

- Home Energy Score for Real Estate Professionals

National Association of REALTORS®

- NAR Green Day 1&2 Bundle

Thank You!

HomeEnergyScore@ee.doe.gov

Assessor@sra.com

www.HomeEnergyScore.gov

Resources Informing This Presentation

- Brown, Martin J., & Watkins, Taylor. (2016). The "green premium" for environmentally certified homes: a meta-analysis and exploration.
- Cadena, Anjelita, & Thomson, Thomas A. (2015). An Empirical Assessment of the Value of Green in Residential Real Estate.
- Capturing Energy Efficiency in Residential Real Estate Transactions: Steps that Energy Efficiency Programs Can Take
- Crawford, Jeremy. (2016). Home Energy Efficiency Information: Coming to Your MLS by 2018.
- Fannie Mae HomeStyle Energy Mortgage Loan Real Estate Fact Sheet
- Goodman, Laurie S., & Zhu, Jun. (2016). PACE Loans: Does Sale Value Reflect Improvements?
- Hill, Alex J., et al. (2016). Predicting Home Energy Rating and Disclosure Program Impacts for North American Jurisdictions. ACEEE Summer Study on Energy Efficiency in Buildings.
- Home Energy Score for Real Estate Fact Sheet
- Institute for Market Transformation (IMT). (2015). Greening the MLS: Bringing High-Performance Homes to Light in the District of Columbia.
- Kahn, Matthew E., Kok, Nils. (2013). The capitalization of green labels in the California housing market. Regional Science and Urban Economics.
- National Association of REALTORS® 2015 Remodeling Impact Report
- Pfleger, W., Perry C., Hurst, N., Tiller, J. (2011). Market Impacts of ENERGY STAR® Qualification for New Homes.
- U.S. Green Building Council [USGBC]. (2014). LEED in Motion: Residential.
- Unlocking the Value of an Energy Efficient Home: A Blueprint to Make Energy Efficiency Improvements Visible in the Real Estate Market
- White House. (2016). FACT SHEET: Obama Administration Announces Clean Energy Savings for All Americans Initiative.
- Wilson, et al. (2016). Home Rx: The Health Benefits of Home Performance: A review of the current evidence.