



Northeast Energy Efficiency Partnerships

Guidance for Real Estate Professionals on Home Energy Efficient Attributes

More and more home buyers have a growing understanding of the importance and value of energy efficiency in the real estate market. The market penetration for high-performance homes in the U.S. reached **\$36 Billion** in 2013 and is projected to hit **\$72 Billion** by 2016 (Source, McGraw Hill Construction).

A recent survey by the National Association of Home Builders showed that “**nine out of ten** buyers would rather purchase a home with energy-efficient features and permanently lower utility bills than one without those features that costs 2 percent to 3 percent less.” The demand for homes that are comfortable and affordable to run is skyrocketing as the prices of electricity and heating fuels rise.

Real estate professionals can capitalize on this rapidly growing market by taking steps to recognize and sell the value of energy efficient homes to their clients. Energy efficient characteristics in new and existing homes lead to:

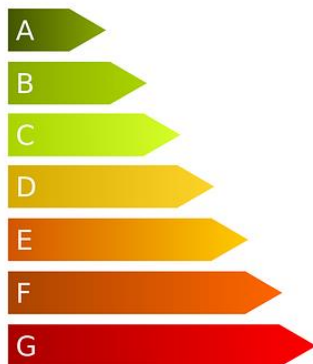
For Customers:

- Lower energy costs
- Increased comfort year-round
- Higher home resale value potential
- Mortgage savings
- Enhanced air quality

For Real Estate Professionals:

- Increased customer satisfaction and loyalty
- Higher referral rates
- Higher commission rates due to increased home value
- Opportunities to demonstrate a deep understanding of all home systems to customers
- Saved deals by knowing solutions to overcome roadblocks

Knowledge of energy efficient home characteristics is a valuable tool for any real estate professional. With the increasing number of energy efficiency rating systems and new technology coming to market, it can be a challenge to keep on top of all the energy efficient attributes in a home. The checklist below can be used as a resource for keeping track of all the high performance aspects of a house that can be integrated into the sales process and value proposition for real estate professionals.





Checklist of Home Energy Efficient Attributes for Real Estate Professionals

The checklist below is meant to enable a real estate professional to make a relatively quick assessment of a home's efficiency. The checklist is organized by seven categories:

1) Lighting, 2) Appliances, 3) HVAC 4) Water Usage 5) Building Envelope 6) Fenestration 7) 3rd Party Evaluation/Home Energy Audit.

| Category | Look For | ✓ | Description | Worth Calling Out |
|--|--|--------------------------|---|--|
| Lighting | Bulbs Compact Fluorescent Lamps(CFLs) | <input type="checkbox"/> | Energy Star certified CFLs typically use 25% of the electricity of an Incandescent bulb with the equivalent brightness. | In addition to the significant energy savings, CFLs and LEDs also last much longer than incandescent or halogen bulbs. Large overhangs on southern facing windows can keep heat out in the summer by blocking the sun's rays and allowing them in during the winter when the sun is lower in the sky. |
| | Light Emitting Diodes(LEDs) | <input type="checkbox"/> | Energy Star LEDs use only around 10% of an equivalent incandescent. | |
| | Natural Light, Shading | <input type="checkbox"/> | Large south facing windows, roof overhangs, and/or deciduous trees. | |
| Appliances | Refrigerator Energy Star Qualified | <input type="checkbox"/> | Energy Star certified refrigerators are 9-10 percent more efficient than federal requirements. | Energy Star certified appliances are designed to save energy without sacrificing performance. If they are more expensive than non-certified appliances, they are required to recoup the extra investment through energy savings in a reasonable amount of time. |
| | Dishwasher Energy Star Qualified | <input type="checkbox"/> | Energy Star dishwashers are 10% more energy efficient than federal requirements. | |
| | Clothes Washer/Dryer Energy Star Qualified | <input type="checkbox"/> | Energy Star certified washers use 20% less energy and 35% less water. Energy Star dryers use 20% less energy. | |
| Heating Ventilation & Air Conditioning | Heating System Energy Star Certified? Circle Type: -Furnace -Boiler -Heat Pump -Electric Baseboard -Wood/Pellet Stove | <input type="checkbox"/> | The rated efficiency of the heating system is usually found on a yellow label on the system. AFUE: _____% Sealed/Insulated ductwork? Y/N | The same label that shows the system efficiency will also usually show estimated yearly operating costs, so the buyer can get an idea of how much the heating/cooling portion of their bill will be. Unsealed/uninsulated duct work can lead to up to 20% energy loss. |

| | | | |
|---|---|---|---|
| Heating Ventilation & Air Conditioning | <p>Circle Fuel: -Gas -Propane -Oil -Electricity -Wood/Pellets</p> <p>Cooling System Energy Star Certified? <input type="checkbox"/> Circle Type:</p> <p>-Heat Pump -Central AC -Window Units</p> | <p>Programmable Thermostat? Y/N Smart Thermostat? Y/N</p> <p>The rated SEER of AC systems is usually found on a yellow label on the indoor unit.</p> <p>SEER: _____</p> | <p>A properly used programmable thermostat can save around 10% on heating/cooling bills.</p> <p>Higher AFUE/SEER ratings= Higher energy savings</p> |
| Water | <p>Hot Water System Energy Star Certified? <input type="checkbox"/></p> <p>Circle Type: -Freestanding Tank -Tankless Coil -Indirect Tank -Tankless On-Demand</p> <p>Circle Fuel: -Gas -Propane -Oil -Electricity -Solar/Electricity</p> <p>Low flow: -Showerheads -Faucet Aerators</p> | <p>The energy use per year will be on a yellow label on the system. Look for the Energy Star label in the lower right corner.</p> <p>Is insulation present on: Hot water pipes? Y/N Hot water tank? Y/N</p> <p>Efficiency Factor(EF) _____</p> <p>Solar Fraction(SF) _____</p> <p>Low flow faucets use (≤ 1.5 gpm) <input type="checkbox"/></p> <p>Low flow showerheads use (≤ 1.7 gpm)</p> | <p>Tankless On-Demand systems save energy by only heating water that is needed at the time rather than heating a whole tank 24/7.</p> <p>Higher efficiency factor= More energy savings</p> <p>Planning ahead is important for DHWs. Older water heaters are prone to leaking and if not prepared, it may be easier/faster for a contractor to install a less efficient system.</p> <p>Low flow water devices save water and also reduce energy used to heat the water.</p> |
| Building Envelope | <p>Insulation Common Types: -Blown in -Rolled/Batts -Sprayed(Foam) -Rigid Foam Board</p> <p>Air Sealing Foam/Caulk Weather-stripping</p> | <p>Indicate Type and R-Value: Attic _____</p> <p>Exterior Walls _____</p> <p>Basement _____</p> <p>Crawlspace _____</p> <p>Indicate where present: _____</p> | <p>Air sealing and insulating properly can cut total home energy costs by up to 30%.</p> <p>Additional benefits include, increased comfort year round, better air quality, and a reduced chance of ice dams.</p> |
| Fenestration | <p>Windows ENERGY STAR Certified?</p> <p>Skylights ENERGY STAR Certified?</p> | <p>Number of Panes(Circle): Single Double Triple</p> <p>U-Factor: _____</p> <p>Low E Coating?</p> | <p>High performance windows can reduce drafts and lower energy costs.</p> <p>Low-E coating on glass reflects radiant heat</p> |

| | | | | |
|---|---|--|---|--|
| Fenestration | Doors ENERGY STAR Certified? | <input type="checkbox"/> | Y/N Properly weather-stripped? Y/N | energy, increasing comfort year round. |
| 3rd Party Evaluations/ Certifications | ENERGY STAR Certified Home? Home energy audit conducted by a qualified home energy rater (ie. BPI or HERS Certified Building Analyst)? | <input type="checkbox"/> <input type="checkbox"/> | Score: _____ (ie. HERS Index) Recommendations and improvements made following audit: _____ _____ _____ | Many utilities offer free or low cost home energy audits as well as rebates on energy efficiency improvements. |

Other Notes:



Glossary of Home Energy Efficient Attributes

Air Sealing - Air sealing is a method of reducing air flow between the inside and outside of a building. Caulking/foaming and weather-stripping are common methods of achieving this reduction. While insulation reduces heat transfer, air sealing reduces the transfer of conditioned air and outside air, reducing drafts and energy costs. A blower door test is commonly used by contractors to determine the amount of air flow between the inside and outside of the house.

(AFUE) Annual Fuel Utilization Efficiency - AFUE measures the amount of fuel converted to space heat in proportion to the amount of fuel entering the furnace. This is commonly expressed as a percentage and the higher the percentage, the more energy efficient the furnace. Today, the lowest efficiency allowed by law for new gas furnaces is 78%. The most efficient models on the market have an AFUE of 90% or higher (some go as high as 97%).
<http://www.consumerreports.org/cro/appliances/heating-cooling-and-air/gas-furnaces-703/efficiency-matters/efficiency-matters.htm>

(BPI) Building Performance Institute, Inc. - BPI is a national standards development and credentialing organization for residential energy efficiency retrofit work. BPI certified professionals are experts on the front-lines of the home performance industry. <http://www.bpi.org/>

(BTU) British Thermal Unit - A BTU is the amount of heat energy needed to raise the temperature of one pound of water by one degree F. This is the standard measurement used to state the amount of energy that a fuel has as well as the amount of output of any heat generating device.

(CAE) Combined Appliance Efficiency - The efficiency of a combination water and space heating system is indicated by its combined appliance efficiency (CAE) rating. CAE ratings vary from 0.59 to 0.90 (the higher the number, the more energy efficient.)

(COP) Coefficient of Performance - The coefficient of performance is used generally as a measure of the energy-efficiency of air conditioners, space heaters and other cooling and heating devices. COP equals heat delivered (output) in British thermal units (Btu) per hour divided by the heat equivalent of the electric energy input (one watt = 3.413 Btu/hour). The higher the COP, the higher the efficiency of the equipment is.
<http://www.businessdictionary.com/definition/coefficient-of-performance-COP.html>

Energy Audit - An energy audit is an assessment of how much energy a home consumes and the development of a plan to make the home more energy efficient.

(EF) Energy Factor - EF is the ratio of useful energy output from a water heater to the total amount of energy delivered to the water heater. The higher the EF is, the more efficient the water heater.
<http://www.aceee.org/consumer/water-heating>

EnergyGuide Label - Manufacturers must use standard test procedures developed by DOE to prove the energy use and efficiency of their products. Test results are printed on yellow EnergyGuide labels, which manufacturers are required to display on many appliances. The EnergyGuide label gives you two important pieces of information you can use to evaluate the energy efficiency of an appliance: 1) Estimated energy consumption on a scale showing a range for similar models and 2) Estimated yearly operating cost based on the national average cost of electricity.

ENERGY STAR - ENERGY STAR is a joint program of the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE) helping consumers save money and protect the environment through energy efficient products and practices. ENERGY STAR labels help consumers differentiate the most energy efficient units in a particular product category. Visit www.energystar.gov for more information.

Fenestration - Fenestration is any opening in a building's envelope including windows, doors and skylights.
<http://www.nfrc.org/fenestrationfacts.aspx>

(HSPF) Heating Seasonal Performance Factor - This is a measure of a heat pump's energy efficiency over one heating season. It represents the total heating output of a heat pump (including supplementary electric heat) during the normal heating season (in BTUs) as compared to the total electricity consumed (in watt-hours) during the same period. The higher the number, the greater the efficiency and cost-savings; the most efficient heat pumps have an HSPF of between 8 and 10. http://www.energysavers.gov/your_home/space_heating_cooling/index.cfm/mytopic=12620

Home Energy Score - The Home Energy Score is a program of the U.S. Department of Energy (DOE) that allows a homeowner to compare his or her home's energy consumption to that of other homes on a scale of 1-10, similar to a vehicle's mile-per-gallon rating. For more information visit <http://www1.eere.energy.gov/buildings/homeenergyscore/>

(HERS) Home Energy Rating Index - The HERS Index is a nationally recognized evaluation of efficiency for homes, established by the Residential Energy Services Network (RESNET), featuring a 1-100 scoring system. The lower a home's HERS Index, the more energy efficient it is in comparison to a HERS Reference Home (i.e. standard home scores 100, ENERGY STAR home scores < 85, net zero home scores a zero). <http://www.resnet.us/home-energy-ratings>

Low-E Glass - Low-emittance (low-E) glass is coated with microscopically thin, virtually invisible, metallic layers that suppress radiative heat flow. Low-E coatings can be detected with hand-held low-E detectors. A typical low-E coating is transparent to visible light but reflective of infrared radiation. Low-E glass also reduces UV transmission and may thus protect furniture from fading. See www.efficientwindows.org for more information.

R-Value - Resistance value (R-Value) measures how well insulation prevents heat from escaping; a higher R-Value insulates more efficiently.

(SHGC) Solar Heat Gain Coefficient - SHGC measures how well a window or skylight blocks heat from the sun and is expressed as a fractional number between 0.0 and 1.0 (i.e. $SHGC \leq 0.40$ is desirable in the Northeast). The lower the SHGC, the better a window is at blocking unwanted heat gain. Blocking solar heat gain is particularly important during the summer cooling season. <http://www.nfrc.org/documents/newwindows.pdf>

(SEER) Seasonal Energy Efficiency Ratio - This is a measure of equipment energy efficiency over the cooling season. It represents the total cooling of a central air conditioner or heat pump (in BTUs) during the normal cooling season as compared to the total electric energy input (in watt-hours) consumed during the same period. The higher the SEER rating of your unit, the more energy-efficient and cost effective it will be to operate. The minimum SEER rating allowed by government standards is 13, but units with SEER ratings of 18 or higher are available.

(SF) Solar Fraction - SF is the portion of the total conventional hot water heating load (delivered energy and tank standby losses) provided by solar energy. The higher the SF is, the more efficient the solar water heater.

U-Factor - Rate of heat transfer through a building component (e.g. windows) or assembly (e.g. walls, roofs). U-Factor ratings generally fall between 0.20 and 1.20. The lower the U-Factor, the better a window is at keeping heat in. U-Factor is particularly important during the winter heating season.

Weatherstripping - Weatherstripping uses a strip of resilient material for covering the joints between window sash and frame in order to reduce air leaks and prevent water from entering the structure.

Resources

ENERGY STAR:

Working with ENERGY STAR as a Real Estate Agent - http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_benefits_realtors

Fact Sheets on the features of ENERGY STAR Qualified Homes - http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_factsheets

ENERGY STAR 101 for Realtors - http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.ResESMktgSalesPresentation

Energy Efficient Mortgages - http://www.energystar.gov/index.cfm?c=mortgages.energy_efficient_mortgages

Department of Energy (DOE) Home Energy Savings - http://www.energysavers.gov/your_home/

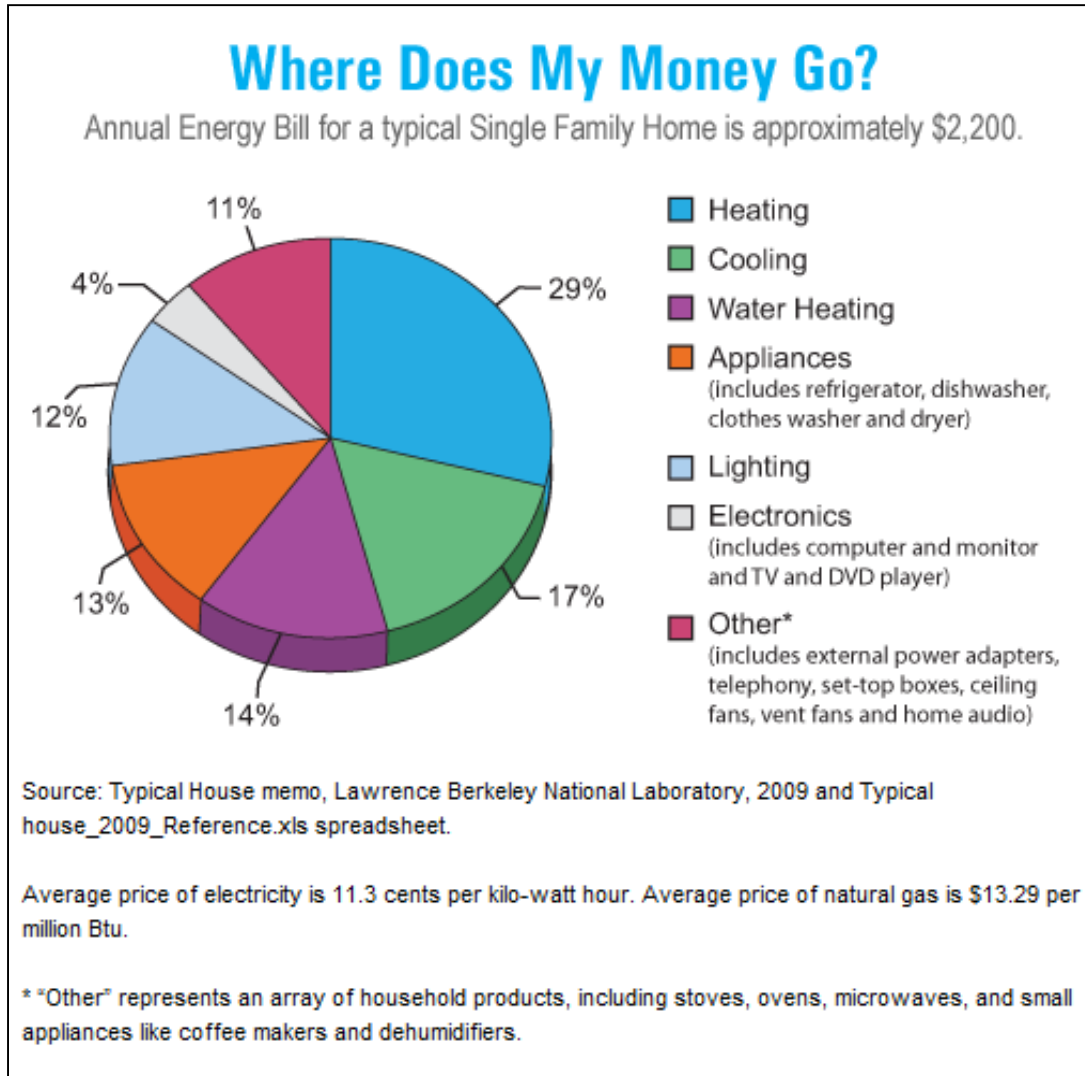
Homeowners Guide to Energy Efficiency - <http://www.homeloans.org/>

Institute for Market Transformation (IMT):

Resources for Real Estate Professionals - <http://www.imt.org/property-valuation-background.html>

Seminars on Residential Property Valuation - <http://www.imt.org/seminars.html>

Federal Trade Commission - <http://www.ftc.gov/bcp/edu/pubs/consumer/homes/rea14.pdf>



Questions: Contact NEEP - Northeast Energy Efficiency Partnerships

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Need More Copies? Download the checklist here: <http://bit.ly/1ESBKoj>

Energy Efficiency Labels

How to Use the EnergyGuide Label

Lists key features of the appliance you're looking at and the similar models that make up the cost range below.

What you might pay to run the appliance for a year, based on its electricity use and the national average cost of energy. The cost appears on labels for all models and brands, so you can compare energy use just like you would price or other features.

An estimate of how much electricity the appliance uses in a year based on typical use. Multiply this by your local electricity rate on your utility bill to better judge what your actual operating cost might be.

U.S. Government Federal law prohibits removal of this label before consumer purchase.

ENERGYGUIDE

Refrigerator-Freezer
 • Automatic Defrost
 • Side-Mounted Freezer
 • Through-the-Door Ice

XYZ Corporation
 Model ABC-L
 Capacity: 23 Cubic Feet

Estimated Yearly Operating Cost

\$67

Cost Range of Similar Models: \$57 to \$74

630 kWh
 Estimated Yearly Electricity Use

Your cost will depend on your utility rates and use.

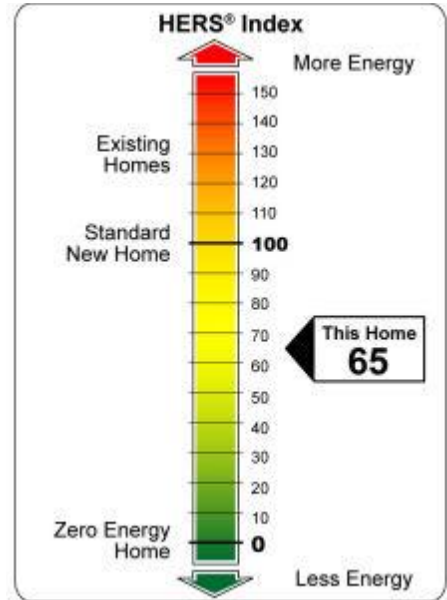
- Cost range based only on models of similar capacity with automatic defrost, side-mounted freezer, and through-the-door ice.
- Estimated operating cost based on a 2007 national average electricity cost of 10.65 cents per kWh.
- For more information, visit www.ftc.gov/appliances.

The maker, model, and size tell you exactly what product this label describes.

The cost range helps you compare the energy use of different models by showing you the range of operating costs for models with similar features.

If you see the ENERGY STAR logo, it means the product is better for the environment because it uses less energy than standard models.

Home Energy Rating Index



ENERGY STAR® Qualified in All 50 States

World's Best Window Co.
 Millennium 2000+
 Vinyl-Clad Wood Frame
 Double Glazing • Argon Fill • Low E
 Product Type: **Vertical Slider**
 (per NFRC 100-97)

ENERGY PERFORMANCE RATINGS

| | |
|---------------------|-----------------------------|
| U-Factor (U.S./I-P) | Solar Heat Gain Coefficient |
| 0.30 | 0.27 |

ADDITIONAL PERFORMANCE RATINGS

| | |
|-----------------------|------------------------|
| Visible Transmittance | Air Leakage (U.S./I-P) |
| 0.51 | 0.2 |

Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. Consult manufacturer's literature for other product performance information.
www.nfrc.org

U.S. Government Federal law prohibits removal of this label before consumer purchase.

ENERGYGUIDE

Central Air Conditioner
 Cooling Only
 Split System

XYZ Corporation
 Model 6643

Seasonal Energy Efficiency Ratio

13.3

Efficiency Range of Similar Models: 10.9 (Least Efficient) to 23.0 (Most Efficient)

- Efficiency range based only on split system units.
- This energy efficiency rating is based on U.S. Government standard tests of this condenser model combined with the most common coil. The rating may vary slightly with different coils.
- For more information, visit www.ftc.gov/appliances.

U.S. Government Federal law prohibits removal of this label before consumer purchase.

ENERGYGUIDE

Furnace - Natural Gas

XYZ Corporation
 Model 22406

Annual Fuel Utilization Efficiency

82.7

Efficiency Range of Similar Models: 78.0 (Least Efficient) to 86.8 (Most Efficient)

- Efficiency range based only on natural gas furnaces.
- For more information, visit www.ftc.gov/appliances.

One of the official ENERGY STAR labels (and the NFRC Label) for a window qualifying in all four climate zones (Northern, North-Central, South-Central, and Southern).