

“Applying Verifiable Data to the Approaches to Value”

July 10, 2020

Session 3 of 3

By Sandra K. Adomatis, SRA, LEED
Green Associates, GREEN



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2-6%

HIGHER SALES PRICE

Homes with *Green Features* sell for 2-6% more than comparable homes without green features.

6%

INCREASE IN SALES PRICE PREMIUM

Energy Efficient Features saw a 6% increase in Sales Price Premium.

3%

INCREASE IN PREMIUM

There was a 3% increase in premium when agents market green certifications effectively

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Energy Efficiency: Value Added to Properties & Loan Performance

ROBERT ARGENTO, XIAN FANG BAK, LARIECE M. BROWN

Summary of Findings

Using a national random sample, we conducted an analysis of energy-efficient homes rated between 2013 and 2017 and found:

- From the property value analysis, rated homes are sold for, on average, 2.7% more than comparable unrated homes
- Better-rated homes are sold for 3-5% more than lesser-rated homes.
- From the loan performance analysis, the default risk of rated homes is not, on average, different from unrated homes, once borrower and underwriting characteristics are considered.
- Loans in the high debt-to-income (DTI) bucket (45% and above) that have ratings, however, appear to have a lower delinquency rate than unrated homes.

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Energy Efficiency: Value Added to Properties & Loan Performance

ROBERT ARGENTO, XIAN FANG BAK, LARIECE M. BROWN

In contrast, data for energy efficiency in the market of existing homes is more limited. Measuring the impact of energy efficiency on the sale prices of existing homes is more challenging than on new homes because existing homeowners often request ratings to help decide whether to make energy efficiency improvements rather than to better position their homes for sale.

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Top 3 Reasons Consumers Get Involved in Energy Efficiency

59% Save Money



27% Healthier Home



35% Comfort

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Source: Energypulse™ 2016 Special Report

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Changing home buyer preferences are reshaping expectations in the housing market



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The Big Picture



Homeowners, buyers and renters want to live in homes that are comfortable, safe, and affordable



Listing home energy information in a standardized way is a first step to better data supporting properties



Verified energy information elevates homebuyer confidence and can boost appraised value

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Where do homeowners go to discover changes in design and features?

- Model homes
- New home builder magazines
- TV – House Flippers
- House and Garden Magazines
- NAR or NAHB Studies
- Hanley Woods
- Multiple List Service



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8,834 views | Mar 10, 2019, 10:19am EDT

Buyer Survey Reveals What's Hot And What's Not In Home Features For 2019



Brenda Richardson Senior Contributor ©
Real Estate

I cover residential real estate, including buying, selling and trends.

- Open kitchen to dining
- Laundry room- 1st floor
- ES Appliances
- Low E Windows
- Ceiling Fans
- Programable Thermostats
- Comfort
- Smart Home features that promote energy efficiency

<https://www.forbes.com/sites/brendarichardson/2019/03/10/buyer-survey-reveals-whats-hot-and-whats-not-in-home-features-for-2019/#55240328541c>

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Components of a HERS Rating

Some of the components used in calculating a HERS Score

- All exterior walls (both above and below grade)
- Floors, ceilings and roofs
- Attics, foundations and crawlspaces
- Windows and doors
- Ductwork
- HVAC system, water heating system, and your thermostat.
- Air leakage of the home
- Leakage in the heating and cooling distribution system

HERS Ratings takes the guess work out of the appraisal of energy efficiency.



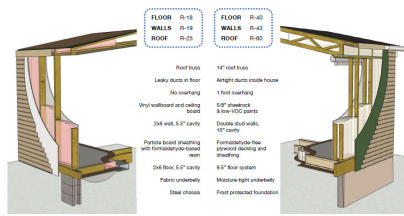
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TYPICAL MOBILE HOME ZERO-ENERGY MODULAR HOME



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Vermod Homes



<https://vermodhomes.com/>

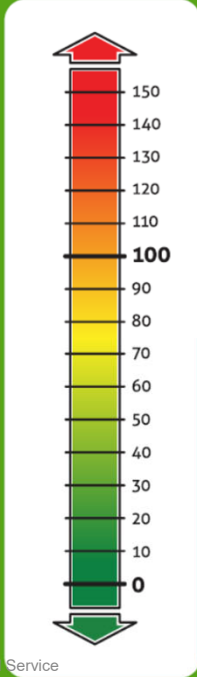
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What is the HERS Index?



- ✓ The national standard by which a home's energy efficiency is inspected and rated.
- ✓ A typical home built to 2006 energy efficiency standards scores 100 on the HERS Index.
- ✓ A 1-Point change in the HERS Index represents a 1% change in energy use.
- ✓ A lower Index Score means a home uses less energy.
- ✓ A home with a HERS Index Score of 0 produces as much energy annually as it uses.



- ✓ A simple, easy to understand system for prospective homebuyers, Realtors, Appraisers and utilities to compare the energy performance of homes.



The HERS Index accounts for a home's energy consumption of heating, cooling, water heating, lighting and some appliances.

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Energy Reports tell you what?

How energy efficient a building may or may not be.

Gives you the energy savings amount

Details on the energy features of the building

Credibility to the energy rating and savings - data

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Energy Raters Use a Duct Blaster and Blower Door to Verify the Envelope Rating and Tightness of the Duct System – Verifiable Data goes into the Confirmed Rating.



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RESNET

AI Members must register a user name and password.

Its Free! An AI member benefit!

RESNET Portal Login

Remember me [Forgot password?](#)

<https://portal.resnet.us/>

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RESNET

Comparable Sales Search

Home > RESNET HERS Index Search Tool

RESNET HERS Index Search Tool

The tool allows appraisers to search for home HERS Index scores by state, city, zip code or address. Simply start your search below.

By State/City

State:

City:

By Zip Code

Zip Code:

By Address

Address:

If you believe a home has received a HERS rating, but is not showing in the Portal, please email the home's address to info@resnet.us

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RESNET HERS Rated Homes Downloaded

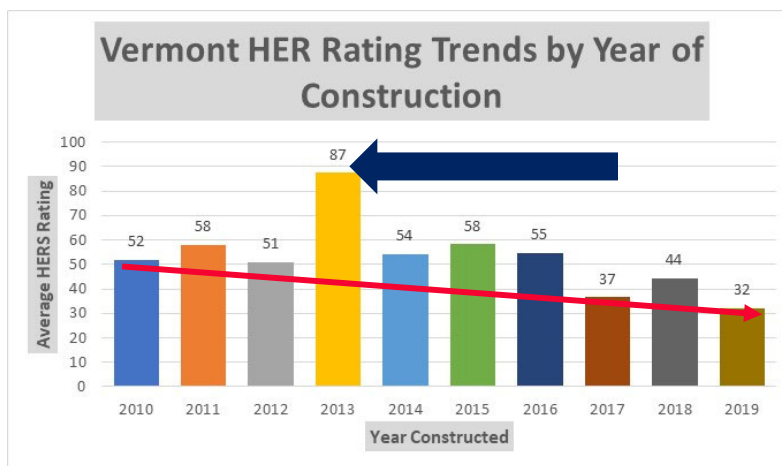
Home Address	City	State	HERS Score	Builder Name	HERS Rating Company	Annual Energy Costs	Annual Savings	Year of Constr.	Energy Star Certified
8 Proctor Pl	Burlington	VT	-3	Rebecca Grannis	Vermont Energy Investm	\$-11	\$3,865	2018	Yes
26 Avenue B	Burlington	VT	4	Vermod, LLC	Vermont Energy Investm	\$171	\$1,491	2017	Yes
176 N Winooski Ave	Burlington	VT	9	Arthur Chukhman	VEIC	\$604	\$3,168	2019	Yes
6 Proctor Pl	Burlington	VT	12	Rebecca Grannis	Vermont Energy Investm	\$419	\$2,413	2017	Yes
20 Germain St	Burlington	VT	14	Scott Gardner	Vermont Energy Investm	\$744	\$3,148	2015	No
196 S C South Union St	Burlington	VT	16	Chuck Reiss	Vermont Energy Investm	\$943	\$4,169	2014	No
147 S Cove Rd	Burlington	VT	31	VERMOD LLC	VEIC	\$826	\$1,273	2019	Yes
69 Charlotte St	Burlington	VT	38	Red House Building	VEIC	\$1750	\$1,714	2019	Yes
68 Staniford Rd Unit 2	Burlington	VT	39	Habitat for Humanity	VEIC	\$1598	\$1,208	2019	Yes
44 Overlake Park	Burlington	VT	42	New England Housewr	Vermont Energy Investm	\$2150	\$1,823	2013	Yes
42 Alexis Dr	Burlington	VT	43	Sam Deavitt Construct	Vermont Energy Investm	\$3420	\$3,055	2018	Yes
68 Staniford Rd Unit 1	Burlington	VT	43	Habitat for Humanity	VEIC	\$1232	\$644	2019	Yes
4 Rock Point Rd	Burlington	VT	44	High Performrance Mo	VEIC	\$1436	\$818	2018	No
105 Glen Rd	Burlington	VT	45	Scott Gardner	Vermont Energy Investm	\$2209	\$1,920	2016	No
370 Colchester Ave	Burlington	VT	46	Tom Hergenrother Jr	VT Energy Investment Co	\$2593	\$2,463	2013	Yes
120 Lori Ln	Burlington	VT	47	Gardner Construction	Vermont Energy Investm	\$2143	\$1,607	2015	No
43 Staniford Farms Rd	Burlington	VT	48	Snyder Construction C	Vermont Energy Investm	\$2326	\$1,534	2015	No
84 Bittersweet Ln	Burlington	VT	48	Building Energy	Vermont Energy Investm	\$1504	\$966	2015	No
183 Appletree Point Rd	Burlington	VT	49	Lake Forest Construct	Vermont Energy Investm	\$3272	\$2,297	2011	Yes
33 Adams Ct	Burlington	VT	49	Scott Driscoll	Vermont Energy Investm	\$1136	\$349	2012	Yes
376 Colchester Ave	Burlington	VT	49	Hayward Design Build	Vermont Energy Investm	\$2001	\$1,224	2016	No
78 Sherman St	Burlington	VT	49	Crosby Hard	Vermont Energy Investm	\$1636	\$1,080	2014	No
80 Sherman St	Burlington	VT	49	Crosby Hard	Vermont Energy Investm	\$1632	\$1,084	2014	No
151 S Champlain St Apt 2	Burlington	VT	51	South River, LLC	Vermont Energy Investm	\$1012	\$750	2016	No

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Energy Efficient Trends Based on Verifiable Data



2013 rating is an anomaly due to several multiunits with air quality issues.

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Apply the trends to the appraisal report

Note: Race and the racial composition of the neighborhood are not appraisal factors.

NEIGHBORHOOD	Neighborhood Characteristics			One-Unit Housing Trends			One-Unit Housing		Present Land Use %		
	Location	<input checked="" type="checkbox"/> Urban	<input type="checkbox"/> Suburban	<input type="checkbox"/> Rural	Property Values	<input checked="" type="checkbox"/> Increasing	<input type="checkbox"/> Stable	<input type="checkbox"/> Declining	PRICE	AGE	One-Unit
Built-Up	<input type="checkbox"/> Over 75%	<input checked="" type="checkbox"/> 25-75%	<input type="checkbox"/> Under 25%	Demand/Supply	<input type="checkbox"/> Shortage	<input checked="" type="checkbox"/> In Balance	<input type="checkbox"/> Over Supply	\$(000)	(yrs)	2-4 Unit	%
Growth	<input type="checkbox"/> Rapid	<input checked="" type="checkbox"/> Stable	<input type="checkbox"/> Slow	Marketing Time	<input type="checkbox"/> Under 3 mths	<input checked="" type="checkbox"/> 3-6 mths	<input type="checkbox"/> Over 6 mths	185 Low	0	Multi-Family	1 %
Neighborhood Boundaries	Bound on the west by Lake Champlain and south of the Canadian Border.						500 High	100	Commercial	10 %	
Neighborhood Description	Burlington is the City and neighborhood as well.						235 Pred.	25	Other	%	
Market Conditions (including support for the above conclusions) A growing trend emerging over the last 10 years in Burlington is more energy efficient housing construction and energy retrofits on existing homes. The HERS Rating Charts in the Addenda of this report shows the trend is for the HERS ratings of 32-44 over the last 3 years. Adding a solar PV system, these homes would be Net Zero.											



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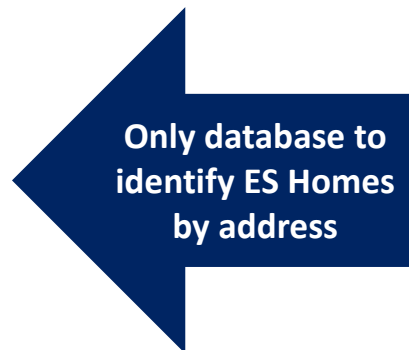
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ENERGY STAR® Trends



https://www.energystar.gov/partner_resources/residential_new

ENERGY STAR® Certified Homes	
Vermont	
Year Constructed	Count
2010	1
2011	10
2012	2
2013	2
2015	57
2017	3
2018	6
2019	5
Total	86



<https://portal.resnet.us/APS>

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Describe Energy Features in the Improvement Description Section

IMPROVE Additional features (special energy efficient items, etc.) **See attached AI Residential Green and Energy Efficient Addendum - The subject property has a HERS Rating of 38 indicating it is 62% more efficient than a home built to the 2006 IECC Requirement.**

Describe the condition of the property (including needed repairs, deterioration, renovations, remodeling, etc.) **CT: No updates in the prior 15 years. The subject is recently completed new construction.**

Are there any physical deficiencies or adverse conditions that affect the livability, soundness, or structural integrity of the property? Yes No If Yes, describe. **The subject is built to the current building code, Residential Building Energy Standards based on the 2015 IECC.**

Does the property generally conform to the neighborhood (functional utility, style, condition, use, construction, etc.)? Yes No If No, describe. **The style, floor plan, size, and quality of construction is like other homes in the neighborhood. The energy efficiency of this house exceeds existing housing and those more than 3 years old. The 38 HERS Rating shows it should save the owner \$1,714 annually. This home also earned the ENERGY STAR Certification that exceeds the current building code requirement.**

Freddie Mac Form 70 March 2005 UAD Version 9/2011 Produced using ACI software, 800.234.8727 www.aciweb.com Page 1 of 6 Fannie Mae Form 1004 March 2005 1004_06UAD.12182015

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HERS Index Score

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Verification-Source

Builder's Name:	Red House Building
HERS Rating Company:	VEIC
Year of Construction:	2019
Date submitted to Registry:	2020
Annual Energy Costs:	\$1750
Annual Energy Savings:	\$1714
Energy Star Certified:	Yes

RESNET Verification Entered In Report as a Photo

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Energy Savings Quantified

Home Address	HERS Score	Builder Name	HERS Rating Company Name	Annual Energy Costs	Annual Savings	Year of Constr.	Energy Star Certified
10178 Winding River Rd	59	KB Home		\$1119.00	\$700.00	2013	No

HP12C Key Strokes	Input	Source
12 N	12 yrs	Typical homeownership term-Census
5 i	5%	Discount rate based on 2 nd mortgage rate + 1% for risk
700 pmt	\$700	Annual Savings – HERS Rating
0 FV	0	Clears future value
PV		Present value shows in negative
Chs		Change sign = \$6,200

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Retired Energy Addendum

Exhibit 2 Fannie Mae Form 1004A Estimate of Value of Energy-Efficient Items

Part 2 - Estimate of value of energy-efficient items

This section can be used to help estimate the value of energy-efficient items only when adequate comparable market data are not available.

In such cases, the value of the energy-efficient items should be the lesser of

- (a) the present worth of the estimated savings in utility costs, as determined by capitalizing the savings at an interest rate that is not less than the current interest rate for home mortgages for a period that does not exceed the lesser of the item's expected physical life or seven years, or
- (b) the installed cost of the energy-efficient item or construction technique, less any physical, functional, and external depreciation.

For example, if the subject property is an existing house with inadequate insulation and infiltration barriers - such as one without storm windows, caulking and weatherstripping - and the estimated savings per month is \$35 for upgrading the property (based on an energy audit/rating), the appraiser could use the following calculations as a guide.

Installed cost (less depreciation)	\$2,500	
Expected life	7 + years	
Expected monthly savings	\$35 per month	\$420 x 4.789 = \$2,011.38
Expected annual savings	\$420 per year	
Present value factor (annual compound interest at 10.5% for 7 years)	4.789	

For this example, it would appear reasonable (only if adequate comparable data were not available) that a typical purchaser might pay a premium of \$2,000 for the property as improved with the suggested energy-related items.

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RESNET Portal Gives Verified Data by address that can be downloaded and merged with the MLS sales or listing data.

These addresses give appraisers a place to start the sales search for not only comparable data but for...

Paired-data analysis. Pairing sales with differing HERS Ratings may provide direct market support for the value of the energy efficient features.

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All Common Errors & issues in Valuation, 2018

1.) Failing to understand that matched pairs (paired-data analysis) is NOT the only way to support an adjustment.

2.) Failing to understand that it is no more appropriate to NOT make an adjustment when it is needed than to MAKE one that has NO support.

USPAP Standards say use all applicable approaches to value.

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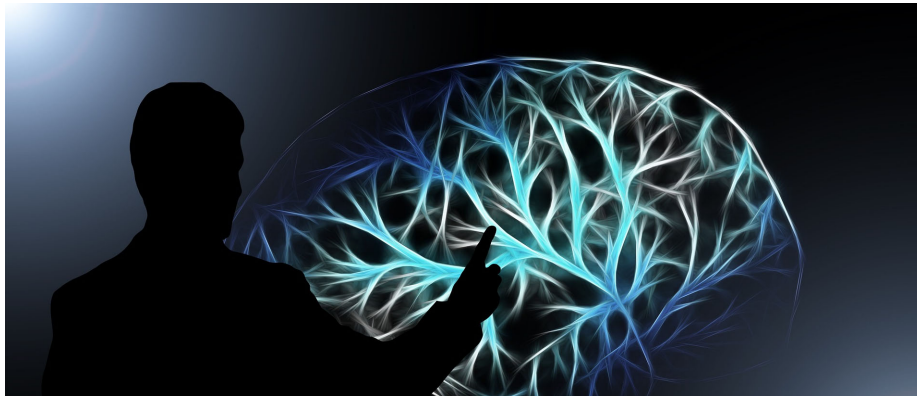
When do buyers rely on cost new most in their buying decisions?

NEW PRODUCT

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Isn't appraiser supposed to mirror the market? Maybe cost should be considered when you have a new feature in the market.

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Energy Efficient Mortgages

- Green CHOICE Mortgage™ by Freddie Mac
- HomeStyle Mortgage by Fannie Mae
- Energy Efficient Mortgage (EEM) by FHA/HUD
- Veteran's Administration - \$6,000 over mortgage amount to make energy improvements

These lending vehicles all require energy ratings and reference HERS in the guidelines.

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Lending Guidelines require appraisers to analyze energy features

- Appraisers **must** compare energy efficient features to those of comparable sales and if analysis determines an adjustment is warranted, it must be made.
- Fannie Mae, Freddie Mac, FHA, and VA have appropriate guidelines that allow appraisers to analyze and value energy/green features. The appraiser must describe the features and support their conclusions.
- Support must come from the documentation YOU can provide. Without the documentation, support is very difficult.

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FHA Single Family Housing Policy Handbook

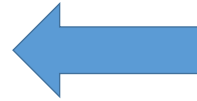
iii. Measurement and Reporting of Contribution to Value

(A) Definition

Contributory Value refers to the change in the value of a Property as a whole, whether positive or negative, resulting from the addition or deletion of a property component.

(B) Standard

Measurement of the Contributory Value of the component is accomplished by the application of techniques based on one or more of the recognized three approaches to value: cost approach, income approach, and sales comparison approach. Each of these recognized methods and techniques requires the Appraiser to collect, verify, and analyze all information necessary for credible assignment results.



(C) Required Analysis and Reporting

The Appraiser must apply all appropriate methods and techniques necessary for credible assignment results.

Source: US Department of Housing and Urban Development, *FHA Single Family Housing Policy Handbook* (Handbook 4000.1), December 30, 2016, 542-543.

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Presenting data convincingly

It is up to the writer to communicate with the reader in a way that is understandable. Make your point concisely and clearly.

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Presenting facts with support



Give links to resources



Define terms that may be new or confusing



Use graphs and charts to more quickly illustrate numbers



Show calculations



Answer the questions that your client may have.

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Learn more about how to implement green into appraisals & marketing



A Guide to the Residential Green and Energy Efficient Addendum

By Sandra K. Adomatis, SRA, LEED Green Associate, NAR GREEN
May 2018

Reviewed by Ben Hoen of Lawrence Berkeley National Laboratory

<https://www.appraisalinstitute.org/appraisal-institute-releases-guide-to-residential-green-addendum/>

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Guide Addresses Appraiser, Listing, & Lender Relevance for each section.

- Where does it go on the 1004?
- Why is it important?
- How can it be used in marketing?
- How can lender use in underwriting?

Valuation of Sustainable Buildings

Title	Hours	State Approval
Introduction to Green Buildings	8	State Approval
Case Studies in Appraising Green Residential Buildings	8	State Approval
Residential and Commercial Valuation of Solar	15	State Approval
Case Studies in Appraising Green Commercial Buildings	15	State Approval
Practical Applications in Appraising Green Commercial Properties	15	State Approval

[FAQs](#)

[Program Registry – Residential](#)

[Program Registry – Commercial](#)

<https://www.appraisalinstitute.org/education/your-career/professional-development-programs/#Valuation%20of%20Sustainable%20Buildings>

Appraiser Education Opportunities



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For Further Information...

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LEED Green Assoc.,
NAR Green

Adomatis@Hotmail.com



Setting the Standards for
Home Energy Efficiency

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