




Appraisal Institute Residential Green and Energy Efficient Addendum

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Sandra K. Adomatis, SRA





LEED Green Associate

- Sandra K. Adomatis, SRA is an active real estate appraiser, instructor, course developer, and consultant to North Carolina Advanced Energy Corporation and General Electric. She is a national speaker on the topic of green valuation and often quoted in media articles regarding the valuation of green buildings. She wrote the course, "Case Studies in Residential Green Buildings", "Description of Residential Green Buildings Made Easy", and "Residential and Commercial Valuation of Solar", and spearheaded the development of the "Residential Green and Energy Efficient Addendum."
- Her accomplishments include past president of the West Coast Florida Chapter Appraisal Institute, past Region X Representative and Education Liaison, demonstration report grader and she served as Vice Chair of the National Education Committee of the Appraisal Institute for three years. She is a current member of the Admissions and Designation Qualification Committee (ADQC). In August 2012, Sandra received the Dr. William N. Kinnard, Jr Education Award from the Education Trust Foundation of the Appraisal Institute for her contributions to the education of real estate appraisers. In July 2013, Sandra received the Appraisal Institute's President's Award for her contributions to the Institute.

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Objectives




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- Explain how the Addendum is used in valuation
- Identify comments on the Addendum that need further explanation
- Answer questions raters have of appraisers

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RESNET Announcement

<https://www.resnet.us/blog/appraisal-institute-enters-into-agreement-with-resnet-to-produce-the-residential-green-and-energy-efficient-addendum-as-home-energy-rating-report/>



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Residential Energy Services Network

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[Visit our Homeowner site](#)

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Rater/Auditor Information
Contractor Information
Builder Information
Provider Information
RESNET Standards
RESNET Conference
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RESBlog

APPRAISAL INSTITUTE ENTERS INTO AGREEMENT WITH RESNET TO PRODUCE THE RESIDENTIAL GREEN AND ENERGY EFFICIENT ADDENDUM AS HOME ENERGY RATING REPORT

November 6th, 2013 - Posted by Laurel Elam under [RESNET News](#)



Client File #:	Appraisal File #:		
Residential Green and Energy Efficient Addendum			
Client:			
Subject Property:			
City:	State:	Zip:	

The Appraisal Institute has developed a Residential Green and Energy Efficient Addendum. The Appraisal Institute Green Addendum is the first residential green and energy efficient appraisal report addendum developed by appraisers, for use by appraisers when appropriate. The Appraisal Institute Green Addendum provides items of high performance house features for consideration by appraisers.


The Appraisal Institute Green Addendum will provide appraisers and facilitating comparable sales for the property they are

» RESNET HOT TOPIC

- Conference
- Energy Auditor Information
- Energy Efficiency
- Hot News
- Hot Topics
- Job Opportunities
- Legislation
- New Members
- Rater Information
- Recovery Through Retrofit
- RESNET News

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News Flash from Steve Baden..



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- RESNET has entered into a sublicense with the Appraisal Institute to have the rating report include a completed addendum.
- RESNET has programed its national building registry to auto-populate the addendum which the rater then can print out at their office and present to their clients.
- Details will be sent out to all raters after the conference.

Slide 5

Identified the System for Market Value



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Value for Green Homes




Documentation is key:

- ✓ Green building certificate
- ✓ Performance test results
- ✓ Local green disclosure form
- ✓ 12 month utility usage

Source: www.GreenTheMLS.org

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What's the Problem?




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Can't Value What I Can Not See

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Objectives for Developing Addendum



- Provide one central place in an appraisal report for green and energy-efficient features
- Standardize the reporting process
- Organize the description, expand existing description sections of residential forms
- Provide a basis for comparable sale selection
- Prepare for potential legislation—SAVE Act
- Identify the special characteristics and type appraiser needed- it is a flag to the lender/AMC

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Case in Point



- An appraisal was ordered on a green and energy-efficient house. The borrower insisted the lender find an appraiser who would use the Addendum. Within a day of the order, this message came to the borrower:
- “This order is placed on HOLD for the following reasons:
- The appraiser was provided a Green Addendum to complete and responded with the following: ‘This is beyond the scope of this appraiser and he cannot complete it.’ ”

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Users of Addendum




- Appraisers
- Realtors
- Homeowners
- Builders
- Contractors—retrofit
- Energy/Green Raters

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How the Addendum is Used

- Standardizes the data for the market
 - Buyers and sellers are confused by the term *green-Green Wash....*
- Homeowners can use the Addendum as their brag sheet in preparation for an appraisal or sale of a house.
- Builders or contractors should use it as a communication tool for lenders, buyers, and appraisers.
- Lenders/AMCs are warned to seek competent appraiser



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Appraisal Report Form-Improvement Section



GENERAL DESCRIPTION		FOUNDATION		EXTERIOR DESCRIPTION materials/condition		INTERIOR materials/condition	
Units <input checked="" type="checkbox"/> One <input type="checkbox"/> One with Accessory Unit	<input checked="" type="checkbox"/> Concrete Slab <input type="checkbox"/> Crawl Space	Foundation Walls CBS/Good	Floors W d/Tile/Cpt/Good	# of Stories 2	<input type="checkbox"/> Full Basement <input type="checkbox"/> Partial Basement	Exterior Walls CBS/Fr/St/Good	Walls Drywall/Good
Type <input checked="" type="checkbox"/> Det. <input type="checkbox"/> Att. <input type="checkbox"/> S-Det/End Unit	Basement Area 0 sq ft	Roof Surface As Sh/Good	Trim/Finish Ptd/Wd/Good	<input checked="" type="checkbox"/> Existing <input type="checkbox"/> Proposed <input type="checkbox"/> Under Const.	Basement Finish 0 %	Gutters & Downspouts Alum/Good	Bath Floor Tile/Good
Design (Style) Traditional	<input type="checkbox"/> Outside Entry/Exit <input type="checkbox"/> Sump Pump	Window Type Low E/Good	Bath Wainscot Tile/Good	Year Built 2008	Evidence of <input type="checkbox"/> Infestation	Storm Sash/Insulated Hi Impact	Car Storage <input type="checkbox"/> None
Effective Age (Yrs) 3	<input type="checkbox"/> Diamond <input type="checkbox"/> Settlement	Screens Yes/Good	<input checked="" type="checkbox"/> Driveway # of Cars 4	Atic <input type="checkbox"/> None	Heating <input checked="" type="checkbox"/> FWA <input type="checkbox"/> HWB <input type="checkbox"/> Radiant	Amenities <input type="checkbox"/> WoodStove(s) #	Driveway Surface Concrete
<input checked="" type="checkbox"/> Drop Stair <input type="checkbox"/> Stairs	<input type="checkbox"/> Other	Fuel Electric	Fireplace(s) # <input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Garage # of Cars 3	<input type="checkbox"/> Other	Pool IG Cgd <input checked="" type="checkbox"/> Other (describe)	Carport # of Cars <input type="checkbox"/>
<input type="checkbox"/> Floor <input checked="" type="checkbox"/> Scuffe	Cooling <input type="checkbox"/> Central Air Conditioning	PatioDeck <input checked="" type="checkbox"/> Porch Screen	Carport # of Cars <input type="checkbox"/>	Appliances <input checked="" type="checkbox"/> Refrigerator <input checked="" type="checkbox"/> Range/Oven <input checked="" type="checkbox"/> Dishwasher <input type="checkbox"/> Disposal <input type="checkbox"/> Microwave <input type="checkbox"/> Washer/Dryer <input type="checkbox"/> Other (describe)	Finished area above grade contains 10 Rooms 8 Bedrooms 4.1 Bath(s) 3,588 Square Feet of Gross Living Area Above Grade	Additional features (special energy efficient items, etc.) See attached Residential Green and Energy Efficient Addendum	
Describe the condition of the property (including needed repairs, deterioration, renovations, remodeling, etc.) The house is in good overall condition. * The two central air units have been stolen and require replacement. The appraised value assumes the units will be replaced with two 19 SEER air units.							
Are there any physical deficiencies or adverse conditions that affect the livability, soundness, or structural integrity of the property? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, describe. Note the replacement of central units noted previously.							
Does the property generally conform to the neighborhood (functional utility, style, condition, use, construction, etc.)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If No, describe. This house is above average in size for this neighborhood. The style is typical of two-story houses in this county. The energy efficiency exceeds the typical code-built house resulting in low energy costs. The house is rated green by Florida Green Building Coalition and described on the attached addendum.							

Florida Form 10 March 2005
Produced using AC software: 800.214.9277 www.aci.com Page 1 of 6
Florida Form 1004 March 2005 2014-09-09/09


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Sales Comparison Approach

FEATURE	SUBJECT	COMPARABLE SALE NO. 1			COMPARABLE SALE NO. 2			COMPARABLE SALE NO. 3		
Address										
Proximity to Subject										
Sale Price	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Sale Price/Gross Liv. Area	\$ 0.00 sq. ft.	\$	sq. ft.	\$	\$	sq. ft.	\$	\$	sq. ft.	\$
Data Source(s)										
Verification Source(s)										
VALUE ADJUSTMENTS	DESCRIPTION	DESCRIPTION	+	-\$ Adjustment	DESCRIPTION	+	-\$ Adjustment	DESCRIPTION	+	-\$ Adjustment
Sale or Financing Concessions										
Date of Sale/Time										
Location	Suburban									
Leasehold/Fee Simple	Fee Simple									
Site	20000 Sq.Ft.									
View	Res/Vacant Sites									
Design (Style)	Traditional									
Quality of Construction	Good									
Actual Age	3+/- Years									
Condition	Good									
Above Grade	Total Bdrms Baths	Total Bdrms Baths	Total Bdrms Baths	Total Bdrms Baths	Total Bdrms Baths	Total Bdrms Baths	Total Bdrms Baths	Total Bdrms Baths	Total Bdrms Baths	
Room Count	10 8 4.1									
Gross Living Area	3,588 sq. ft.	sq. ft.			sq. ft.			sq. ft.		
Basement & Finished Rooms Below Grade	None									
Functional Utility	Average									
Heating/Cooling	Central									
Energy Efficient Items	HERS 55/Sir WH									
Garage/Carport	3-Car Garage									
Porch/Patio/Deck	Scr/Entry									
Solar PV Panels	4.03 Array									
Amenities	Solar Pool Entry									
Green Score	194 Score									
Net Adjustment (Total)				\$			\$			\$
Adjusted Sale Price		Net Adj. %		\$	Net Adj. %		\$	Net Adj. %		\$
% of Comparables		Gross Adj. %		\$	Gross Adj. %		\$	Gross Adj. %		\$

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- ## Difficulties Appraising High Performance
1. Limited sales data
 2. Inadequate MLS data fields
 3. Lack of proper documentation
 4. Lack of knowledge
- 

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Importance of Rater



- Provide accurate-tested information
- Support the Addendum with fact – The Energy Reports
- Timely reporting of data
- Educate the industry of the value of your reports

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Main Message in Reporting



KEEP IT SIMPLE SWEETHEART

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Keeping it simple




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- In the comment sections of each category
 - State the obvious
 - Compare rating with local code requirement
 - Explain terms that may not be understood or in the glossary of the Addendum
 - Attach full reports to the Addendum

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Introduction to the Addendum




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 AI Reports® Form 820.04*	Client File #:		Appraisal File #:	
	Residential Green and Energy Efficient Addendum			
Client:				
Subject Property:				
City:		State:		Zip:
Additional resources to aid in the valuation of green properties and the completion of this form can be found at http://www.appraisalinstitute.org/education/green_energy_addendum.aspx				
The appraiser hereby certifies that the information provided within this addendum: <ul style="list-style-type: none"> has been considered in the appraiser's development of the appraisal of the subject property only for the client and intended user(s) identified in the appraisal report and only for the intended use stated in the report. is not provided by the appraiser for any other purpose and should not be relied upon by parties other than those identified by the appraiser as the client or intended user(s) in the report. is the result of the appraiser's routine inspection of and inquiries about the subject property's green and energy efficient features. Extraordinary assumption: Data provided herein is assumed to be accurate and if found to be in error could alter the appraiser's opinions or conclusions. is not made as a representation or as a warranty as to the efficiency, quality, function, operability, reliability or cost savings of the reported items or of the subject property in general, and this addendum should not be relied upon for such assessments. <p>Green Building: The practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's lifecycle from siting to design, construction, operation, maintenance, renovation, and deconstruction. This practice expands and complements the classic building design concerns of economy, utility, durability, and comfort.¹ High Performance building and green building are often used interchangeably.</p> <p>Six Elements of Green Building: A green building has attributes that fall into the six elements of green building known as (1) site, (2) water, (3) energy, (4) materials, (5) indoor air quality, and (6) maintenance and operation. A Green Building will be energy efficient but an energy efficient building is not synonymous with Green Building.</p>				

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Green Features



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Green Features			
The following items are considered within the appraised value of the subject property:			
Certification	Year Certified: 2013	Certifying Organization: <input checked="" type="checkbox"/> Home Innovation Research Labs (ICC-700) <input type="checkbox"/> USGBC (LEED) <input type="checkbox"/> Other:	<input type="checkbox"/> Verification Reviewed on site <input checked="" type="checkbox"/> Certification attached to this report
Rating	Score:	<input type="checkbox"/> LEED Certified: <input type="checkbox"/> LEED Silver <input type="checkbox"/> LEED Gold <input type="checkbox"/> LEED Platinum <input checked="" type="checkbox"/> ICC-700 <i>National Green Building Standard</i> Certified: <input type="checkbox"/> Bronze <input type="checkbox"/> Silver <input type="checkbox"/> Gold <input checked="" type="checkbox"/> Emerald Green Certifying Organization URL (website) http://www.homeinnovation.com	
Additions	Explain any additions or changes made to the structure since it was certified: None - This is proposed construction.		
Do changes require recertification to verify rating is still applicable? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Comments	If a property is built green but not formally certified, it still deserves proper description and analysis to value the features. The market analysis is of the structure's physical, economic, and locational attributes and not an analysis of its label alone. See attached worksheet based on the Emerald goal score. If the HERS Rating is based on a model home and not on the appraisal property, clearly state this.		

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Green Features




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Year-Certified: 2013	Certifying Organization: <input type="checkbox"/> Home Innovation Research Labs (ICC-700) <input type="checkbox"/> USGBC (LEED) <input type="checkbox"/> Other:	<input type="checkbox"/> Verification Reviewed on-site	<input type="checkbox"/> Certification attached to this report
Score:	<input type="checkbox"/> LEED Certified: <input type="checkbox"/> LEED Silver <input type="checkbox"/> LEED Gold <input type="checkbox"/> LEED Platinum <input type="checkbox"/> ICC-700 <i>National Green Building Standard</i> Certified: <input type="checkbox"/> Bronze <input type="checkbox"/> Silver <input type="checkbox"/> Gold <input type="checkbox"/> Emerald Green Certifying Organization URL (website)		
<h3 style="color: #0056b3;">Attach the rating AND worksheet.</h3>			

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Labels Matter – Post in Electrical Box



LEARN MORE AT
energystar.gov



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The label form includes the Energy Star logo, the text 'AN ENERGY STAR QUALIFIED HOME', and fields for Address, Built by, Verified by, Date, and Optional information. A disclaimer at the bottom states: 'This home has been independently verified through an EPA-approved sampling protocol to meet ENERGY STAR's strict guidelines for energy efficiency. Each ENERGY STAR qualified home can keep 4,500 lbs of greenhouse gases out of our air each year. www.energystar.gov'

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Step forward - Label



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- HERS Index Rating
- Envelope Rating
- Duct Rating
- Insulation Installation Rating
- Date Rated
- Name of Rater



A photograph showing a person's foot stepping on sand, leaving a footprint.

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Energy Efficiency



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<input type="checkbox"/> Fiberglass Blown-In <input type="checkbox"/> Foam Insulation <input type="checkbox"/> Cellulose <input type="checkbox"/> Fiberglass Batt Insulation ¶ <input type="checkbox"/> Other (Describe): ¶ <input type="checkbox"/> Basement Insulation (Describe): ¶ <input type="checkbox"/> HERS Insulation Installed Rating: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 (See Glossary) ¶	R-Value: ¶ <input type="checkbox"/> Walls: ¶ <input type="checkbox"/> Ceiling ¶ <input type="checkbox"/> Floor ¶
Envelope Tightness: Unit: <input type="checkbox"/> CFM25 <input type="checkbox"/> CFM50 <input type="checkbox"/> ACH50 <input type="checkbox"/> ACHnatural: ¶ <input type="checkbox"/> Envelope Tightness based on Blower Door Test ¶	

R-Value

Check box and provide rating to right side
Of wall-ceiling-floor
Give Building Code minimum requirement

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Energy Efficient Comments



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- **Envelope Rating** - Check box -ACH50
 - Provide actual rating in the comment section along with the local **code** requirement for the envelope rating.

For example:

The envelope rating is 2 ACH50 compared to the local 2009 building code requirement of 5 ACH50 indicating this property envelope is tighter than **code** requirements.

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Energy Efficiency, continued



Energy Rating	<input type="checkbox"/> ENERGY STAR® Home - Version: <input type="text"/> <input type="checkbox"/> Other (Describe): <input type="text"/> Home Energy Score (HES) (Score range 1-10): <input type="text"/> <input type="checkbox"/> Certification Attached: <input type="checkbox"/>		
Indoor Air Quality	<input type="checkbox"/> Indoor Air PLUS Package: <input type="checkbox"/>	<input type="checkbox"/> Energy Recovery Ventilator Unit or Whole Building Ventilation System: <input type="checkbox"/>	<input type="checkbox"/> Non-Toxic Pest Control: <input type="checkbox"/>
HERS Information	Rating: <input type="text"/>	Monthly Energy Savings on Rating: \$ <input type="text"/>	Date Rated: <input type="text"/>
Utility Costs	Average Annual Utility Cost: \$ per month based on: <input type="text"/>		# of Occupants: <input type="text"/>
Energy Audit	<input type="checkbox"/> Infrared Photograph Attached: <input type="checkbox"/> Has an energy audit/rating been performed on the subject property? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> If yes, comment on work completed as result of audit: <input type="text"/>		
Comments <small>(Include source for information provided in this section)</small> Attach documents or reference them in your workfile The energy element is the most measurable element of green- or high-performance housing	Information was provided by: <input type="text"/> <div style="text-align: center; font-size: 1.2em; font-weight: bold; color: #0056b3;"> If new construction, show avg. monthly utility costs for code compared to this property. </div>		

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Energy Efficient Comments

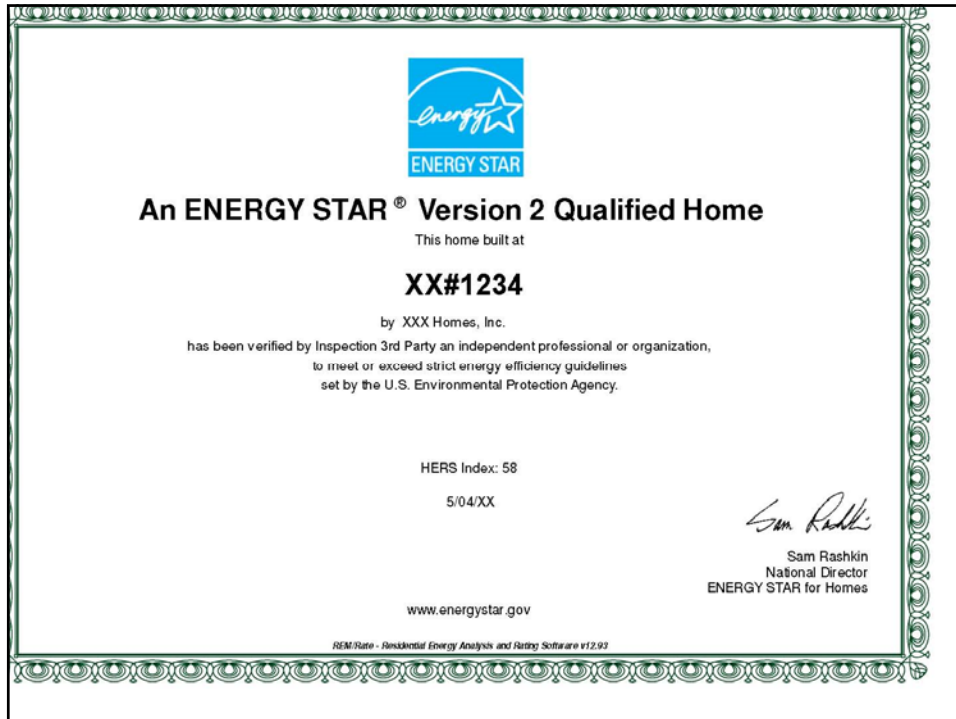


- **HERS Index Rating-** Fill in blank with Index
 - Provide the local code requirement for the same property – provide estimated energy costs for the code built house.

For example:

The HERS Index rating is 46 compared to the local 2009 code requirement of 85 indicating this property is 39% more energy efficient than code. Code built energy costs are \$2,100 compared to \$1,300 for this high-performance house.

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Rem Rate

Strengths

- Easiest residential energy analysis and rating tools to use
- Offers 27 preformatted reports
- One of the only tools that allows side-by-side comparison of two homes
 - Easy to analyze upgrade



http://apps1.eere.energy.gov/buildings/tools_directory/software.cfm/ID=50/page_name=alpha_list_sub

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Rem Rate Reports Offer



- Rating
- Quick Report
- Improvement Analysis
- Energy Use
- Energy Cost
- Normalized Energy Use
- Design Loads
- Code Compliance
- Economic analysis of energy upgrades

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Rem Rate Reports Offer



- Energy Efficiency Mortgage Report
- Energy Appraisal Addendum

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Rem Rate Can Produce this

Energy Report
For Fannie Mae Desktop Underwriters®

Use this Energy Report to show the Energy Savings for underwriting purposes in accordance with the requirements of the Energy Guide to Mortgage Lending to determine if the Energy Savings is added to the property. The Report is to be completed by the Energy Rate and submitted to the Lender. The Report must be initialed by the Lender in the Loan File.

Borrower Name(s): Mr. Sample, Mrs. Doe

Property Address: 1 Sample Court Albany, NY 12210

Energy Savings

Monthly Energy Savings

Enter Monthly Energy Savings Value in Section IV "Monthly Income and Combined Housing Expense Information" in Desktop Underwriter®.

Energy Value

New Homes or Energy Efficient Existing Homes

Energy Savings Value

Enter Energy Savings Value in "Additional Data" in the Desktop Underwriter® screen by adding the value to appropriate value.

OR

Energy Improvements to Existing Homes

Energy Savings Value

Enter into Section VIII "Details of Transaction", Add to Line B "Rehabilitate, Improvements, Repairs" AND

Enter Energy Savings Value in "Additional Data" in the Desktop Underwriter® screen by adding the value to appropriate value.

Rehabilitated Square Feet


Date

REMARKS - Residential Energy Analytical and Rating Software v12.41 Rev: 1/10/13
*This software does not constitute an appraisal or any other type of energy audit or analysis.
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http://grainyconsulting.com/Improvement_Analysis.pdf
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Fannie Mae Says

The appraiser must consider the energy efficient features of the home. If the market supports an adjustment it must be made.




http://www.fanniemae.com/content/fact_sheet/appraisal-guidance.pdf
 2013 Selling Guide www.fanniemae.com/content/guide/sel011713.pdf
 Page 518

Energy and Water Savings are measureable



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Energy Costs Data from Rem Rate Report



Rating Number: XXX
 Certified Energy Rater:
 Rating Date:05/01/XX
 Rating Ordered For:


Estimated Annual Energy Cost			
Confirmed Rating			
Use	MMBtu	Cost	Percent
Heating	12.1	\$305	25%
Cooling	3.8	\$99	8%
Hot Water	11.0	\$280	23%
Lights/Appliances	19.1	\$487	39%
Photovoltaics	-0.0	\$-0	-0%
Service Charges		\$67	5%
Total		\$1238	100%

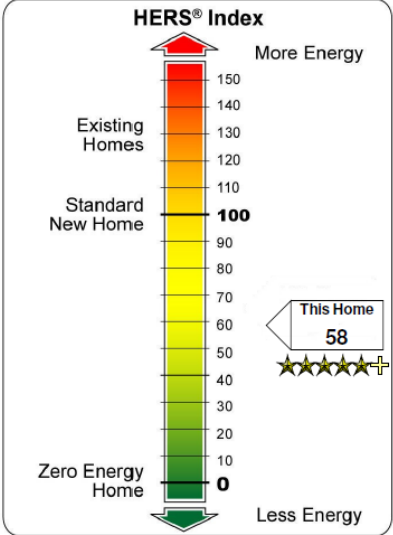
This home meets or exceeds the minimum criteria for all of the following:




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HERS Index





Explain HERS Index – Many users of your product are still not familiar with term.



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http://www2.eere.energy.gov/buildings/residential/hes_index.html

Home Energy Score

Address: 12345 Honeysuckle Lane
Smithville AR 72466

Home size: 2,800 square feet
Year built: 1970
Air conditioned: Yes

Your home's current score: **5**

Score with improvements: **7**

Estimated 10 year savings: **\$3,900**

Uses more energy 1 2 3 4 5 6 7 8 9 10 Uses less energy

Top 20% of similarly sized homes score here or better

ENERGY homeenergyscore.gov

Assessment date: 01/12/2012
Scored in: 2012
Score ID: 1913375
Qualified assessor #: 101019

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RemRate Report

Energy Costs (\$/yr)

End-Use	As Is	With All Improvements	Savings
Heating	843	596	247
Cooling	798	614	184
Hot Water	151	151	0
Lights and Appliances	1023	942	82
Photovoltaics	-0	-0	0
Service Charge	324	324	0
TOTAL	3140	2627	513

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Information for Appraisers & Lenders



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Installed Cost of Improvements (\$)	8200	
Cost Weighted Life of Measure (Years)	29	←
Mortgage Term (Years)	30	
Discount/Mortgage Rate (%)	5.000	
Present Value Factor	15.1	←
Expected Annual Energy Savings (\$)	513	
Expected Annual Maintenance Costs (\$)	0	
Expected Annual Savings (\$)	513	
Increased Annual Mortgage Costs (\$)	533	
Present Value of Savings (\$)	7755	←
Expected Annual Cash Flow (\$)	-20	

How are these numbers calculated?

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Market must understand benefits




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The Market Understands \$\$\$ Savings




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Paired Sales Analysis



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Lenders seek market data evidence

Description	1274 Killen St	908 Silver St
Sale Date	07/XX	06/XX
Sale Price	\$274,000	\$265,000
Living Area	2,200	2,122
Garage	2-Car Attached	2-Car Attached
Energy or Green Features	Hers Index 64	Hers Index for Code-Built 95
Difference attributed to Energy Features (\$274,000-\$265,000)	\$9,000	

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Market Evidence in Database



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Off-Market Date: Between and

HERS Index: Between 1 and 56

Add More Search Criteria
Remove Field
Move Field Up
Move Field Down
Clear Fields
Hide advanced options

Zip Code/County ▼

Matches found: 0

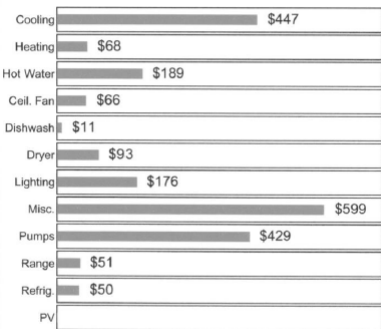
MLS Search of 2 counties gave -0- Sales

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MLS Search – Active Comments

Savings = \$728 Florida Ave
Statewide P

**This Home may Qualify for
This Home Qualifies for an Ene**




Feature	Savings
Cooling	\$447
Heating	\$68
Hot Water	\$189
Coil. Fan	\$66
Dishwash	\$11
Dryer	\$93
Lighting	\$176
Misc.	\$599
Pumps	\$429
Range	\$51
Refrig	\$50
PV	

HERS Index²: 65

★★★★★+



NOTES:

**Active with Contract.
Beautiful furnished
model home with
Luxury pool
package. Located
on a premium lake
view home site,
available for
sale/leaseback.**



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Infrared Photographs - Attach



Documentation is key to credible report - value

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Tests of Reasonableness

Two indications suggest the high performance features have value.

Apply a test of reasonableness - cost



- McGraw Hill 2012 Smart Market Report – 5% to 7% cost of green features over code built house
- Marshall and Swift Residential Cost Handbook – Green features costs 3% to 20% over code depending on the number and type of features.

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New Construction Requires



- Final HERS Index Scores –
 - Appraisal is subject to completion and preliminary HERS

Preliminary Rating


And

Final Rating



Solar Panels

Solar Panels						
The following items are considered within the appraised value of the subject property:						
Description	Array #1	<input type="checkbox"/> Leased <input checked="" type="checkbox"/> Owned	Array #2	<input type="checkbox"/> Leased <input checked="" type="checkbox"/> Owned	Description	Solar Thermal Water Heating System
kW (size)	5.0				If Active System - type	<input checked="" type="checkbox"/> Direct <input type="checkbox"/> Indirect
Manufacturer of Panels	MAGE Solar				If Passive System - type	<input type="checkbox"/> Integral collector <input type="checkbox"/> Thermosyphon
Warranty on Panels	25 years				Storage Tank Size	# Gallons: 80
Age of Panels	New				Collector Type	<input checked="" type="checkbox"/> Flat-Flat Collector <input type="checkbox"/> Integral Collector <input type="checkbox"/> Evacuated-Tube Solar
Energy Production kWh per Array	6,804 kWh				Back-Up System	<input type="checkbox"/> Conventional Water Htr <input checked="" type="checkbox"/> Tankless On Demand <input type="checkbox"/> Tankless Heat Pump
Source for Energy Production Estimate	Installer				Age of System	New
Location (Roof, Ground, Etc.)	Roof				Tilt/Slope for Array	18.5
Warranty Term	10 years				Warranty Term	15 years
Manufacturer	SMA				Manufacturer	Heliodyne
Age of Inverter(s)	New				Solar Energy Factor (SEF) <small>(Rating range 1 to 11 - higher number is more efficient)</small>	10




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<http://pv.sandia.gov/pvvalue>

- Input area of Spreadsheet Tool from Solar Power Electric/Sandia National Laboratories



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25- and 30-Year Present Value Estimate of Future Energy Production for Photovoltaic Systems


Solar Resource Calculation		Discount Rate Calculation		Electricity Rate Inputs		Operation & Maintenance Inputs	
Site Code	9999	Bank Points (Low)	90	Electricity Rate	12.00	15 Year O&M Expense as a % of the system cost	55
Systems Size in Watts	5,000	Bank Points (High)	200	Electricity Rate	12.00	15 Year O&M Expense as a % of the system cost	55
Discount Factor (Default: 0.90)	0.770	Bank Points (Average)	175	Electricity Rate	12.00	15 Year O&M Expense as a % of the system cost	55
Module Degradation Rate	0.5	Update 30 Year Fixed Rate	2010/08/11	Electricity Rate	12.00	15 Year O&M Expense as a % of the system cost	55
Array Type	Fixed	30 Year Fixed Rate	2010/08/11	Electricity Rate	12.00	15 Year O&M Expense as a % of the system cost	55
Array Size (meters) x (meters)	1.0 x 1.0	30 Year Fixed Rate	2010/08/11	Electricity Rate	12.00	15 Year O&M Expense as a % of the system cost	55
Array Azimuth (Default = South)	180	Discount Rate (Low)	4.00	Electricity Rate	12.00	15 Year O&M Expense as a % of the system cost	55
Calculate PV Production	kWh produced/year	Discount Rate (High)	5.00	Electricity Rate	12.00	15 Year O&M Expense as a % of the system cost	55
	6,803	Discount Rate (Average)	4.50	Electricity Rate	12.00	15 Year O&M Expense as a % of the system cost	55

Appraisal Range of Value Estimate

Low	\$12,731.04
Medium	\$13,964.07
High	\$15,378.04

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Solar and the HERS Report




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- Does the HERS Report Identify the Solar PV or Solar Thermal System?
- Does HERS include the Solar PV Energy Production?

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Location - Site




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Location - Site		
The following items are considered within the appraised value of the subject property:		
Walk Score	Score: 45	Source: http://www.walkscore.com (Example: http://www.walkscore.com)
Public Transportation	<input checked="" type="checkbox"/> Bus - Distance: 4 Blocks	<input type="checkbox"/> Train - Distance: Blocks <input type="checkbox"/> Subway - Distance: Blocks
Site	Orientation - front faces: <input type="checkbox"/> East/West <input checked="" type="checkbox"/> North/South	Landscaping: <input checked="" type="checkbox"/> Water Efficient <input type="checkbox"/> Natural
Comments	<p>The street or front of house faces the south and the rear of the house faces the north.</p> <p>The south side of the house is shaded by a large oak tree. This tree provides additional energy savings.</p>	

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Incentives - Rebates




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Incentives - Amount of Incentive and Terms	
The following items are considered within the appraised value of the subject property:	
Federal	None at this time
State	None at this time
Local	Expedited building permit - no dollar incentive offered Utility rebate of \$1,000 for solar thermal water heater.
Source <small>(For example www.dsireusa.org)</small>	www.dsireusa.org
Comments <small>Incentives offset cost and should be reported in the cost approach section of the report. Incentives are typically not a sales</small>	A rebate of \$1,000 is offered by the local utility company for the installation of the solar thermal water heating system. This amount will offset the cost in the cost approach of the appraisal report.

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SAVE Act

Sensible Accounting to Valuing Energy



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Summary

The SAVE Act [S. 1106], introduced on June 6, 2013 by Senators Bennet (D-Colo.) and Isakson (R-Ga.), is legislation to improve the accuracy of mortgage underwriting used by federal mortgage agencies by including a home's expected energy cost savings when determining the value and affordability of energy efficient homes. Utility bills are usually larger than either real estate taxes or homeowners insurance, but they are currently ignored in mortgage underwriting.

- [Read the SAVE Act Coalition Fact Sheet](#)
- [Read the full text of the bill](#)
- [Read Senator Bennet's press release](#)
- [Read our analysis The SAVE Act: Driving Job Creation and Energy Savings](#)

IMT and ACEEE found that SAVE would generate 83,000 jobs and \$1.1 billion in consumer energy bill savings in 2020.

The proposal is supported by a diverse coalition of organizations, including the National Association of Home Builders, the National Association of Realtors, the U.S. Chamber of Commerce, the Appraisal Institute, the U.S. Green Building Council, the Leading Builders of America, and the Natural Resources Defense Council (see full list of SAVE Act Coalition members below).

<http://www.imt.org/finance-and-leasing/save-act>

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Steps to improve high-performance transfers

- Educate the public on the benefits
- Educate the market participants on how to document and explain the benefits
- Complete the AI Res. Green & EE Addendum
- Network with real estate professionals
- Improve access to databases
- Develop verifiable statistics on high performance counts
- Implement more proficient method of delivering energy reports to owners/buyers/agents/appraisers/lenders



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Appraisal Institute Courses



Valuation of Sustainable Buildings

- Course Descriptions and Online Registration
 - *Introduction to Green Buildings*
 - *Case Studies in Appraising Green Residential Buildings*
 - *Residential and Commercial Valuation of Solar*
 - *Case Studies in Appraising Green Commercial Buildings*
- FAQs
- Green/Sustainability Program Registry
 - Residential
 - Commercial

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

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Green Appraiser Registry



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Valuation of Sustainable Buildings: Residential

Professional Development Program Registry

NOTE: This Registry only lists Appraisal Institute Designated Members who have successfully passed the *Valuation of Sustainable Buildings Professional Development Program* examinations.

There may be other qualified Appraisal Institute Designated members who may handle green/sustainability assignments but have not taken the *Valuation of Sustainable Buildings Professional Development Program*. [Visit the Find an Appraiser directory](#) to find Designated members who have identified green/sustainability as a specialty.


[View Program FAQs](#) ▶

[Please read this notice regarding Professional Development Programs](#) ▶

* Has not completed the Residential and Commercial Valuation of Solar course. Those on the registry have until May 1, 2014 to complete Residential and Commercial Valuation of Solar to remain on the registry.

<http://www.myappraisalinstitute.org/findappraiser/>

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Thank you for attending!

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