



## The Appraisal Process: Be Your Own Advocate

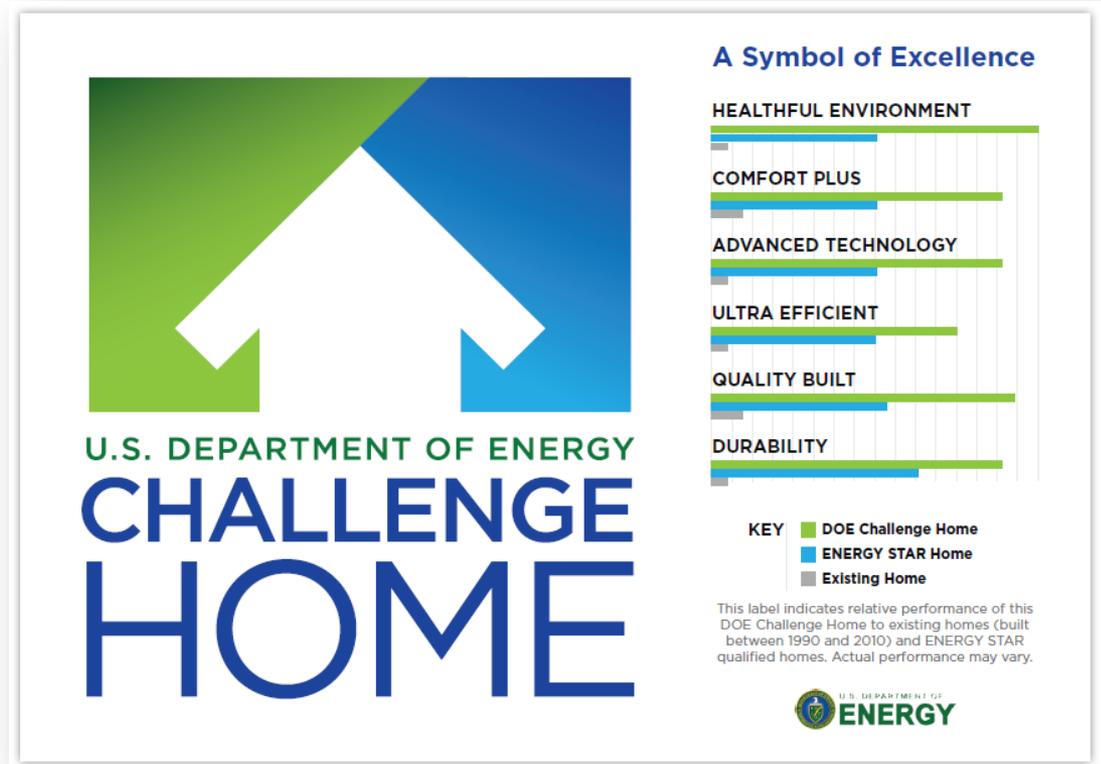
**SAM RASHKIN**

Chief Architect

Building Technologies Program

You've joined the leadership movement to zero net-energy ready homes with your commitment to the DOE Challenge Home program. Congratulations on providing your homebuyers with the highest performing homes in the nation. After the sale, it's time to optimize the appraisal process by following these three steps:

1. Provide DOE Challenge Home documentation
2. Only accept a Certified Residential Green Appraiser
3. Download , complete and provide a competent appraiser with the Green &Energy Efficiency Addendum



# Step One: Document Your Third-Party Certification

A wide array of programs qualify as green or energy efficient including the DOE Challenge Home. Use the DOE Challenge Home Verification form to document compliance with the program.

## DOE Challenge Home Verification

Projected Rating: Based on Plans - Field Confirmation Required.

Energy Performance	
House Type	DOE Challenge Home Builder Partner ID#
Single-family detached	12345
Year built	Square footage of Conditioned Space including Basement
2013	3968.0
Number of Bedrooms	Square footage of Conditioned Space without Basement
4	2368.0
Site address (if not available, list the site Lot #)	Registered Builder
555 Main Street	
Cold City	Certified Rater
MN, 20853	
HERS Index without On-site Generation	Date of Rating
46	
HERS Index with On-site Generation	Rating Software
46	REM/Rate - v14.2
HERS Index of the Target Home using size adjustment factor	Estimated annual energy costs(\$)
46	1372
Estimated annual energy use	Estimated annual energy savings
Electric: 10825 kWh \ Natural Gas: 773 Therms	Electric: 4081 kWh \ Natural gas: 1171 Therms
Energy cost rates	Estimated annual emissions reductions
Electric: 0.08 \$/kWh \ Natural Gas: 0.50 \$/Therms	CO2: 10.2 tons / SO2: 16.4 lbs / NOx: 31.2 lbs

### DOE Challenge Home Certification

As the certified Rater for this house, I certify this house meets/complies with all mandatory requirements of the DOE Challenge home guidelines, including the following:

<input checked="" type="checkbox"/>	Compliance with all ENERGY STAR Qualified Homes Version 3 requirements and checklists
<input checked="" type="checkbox"/>	Compliance with Mandatory Fenestration Requirements
<input checked="" type="checkbox"/>	Compliance with Mandatory Insulation Requirements
<input checked="" type="checkbox"/>	Compliance with Mandatory Duct Location Requirements
<input checked="" type="checkbox"/>	Compliance with Mandatory Appliance Requirements
<input checked="" type="checkbox"/>	Compliance with Mandatory Lighting Requirements
<input checked="" type="checkbox"/>	Compliance with Mandatory Fan Efficiency Requirements
<input checked="" type="checkbox"/>	Compliance with Mandatory Indoor Air Quality Requirements
<input checked="" type="checkbox"/>	Compliance with Mandatory Renewable Energy Ready Solar Electric Requirements
<input checked="" type="checkbox"/>	Compliance with Mandatory Renewable Energy Ready Solar Hot Water Requirements
	This home was qualified via sampling in lieu of testing, in accordance with allowable sampling provisions as stated in the DOE Challenge Home National Program Requirements

### Optional Compliance for Builder Recognition

I further certify that the following also apply to this house:

YES	NO	DONT KNOW	Optional Home Builder Commitments for Recognition
<input checked="" type="checkbox"/>			Certified under the EPA Indoor airPLUS Program*

\*Certification under the DOE Challenge Home permits limited exceptions to full compliance with Indoor airPLUS. Builders seeking the Indoor airPLUS label must achieve full compliance with the Indoor airPLUS Verification Checklists.

REM/Rate - Residential Energy Analysis and Rating Software v14.2  
This information does not constitute any warranty of energy cost or savings.  
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# Step Two:

# Only Accept a Certified Residential Green Appraiser

Understand your right to a competent appraiser. In many markets you are eligible to specify with the lender that you will only accept an appraiser from the Certified Green Residential Appraiser List. These appraisers have been trained to recognize the value of high-performance home improvements in your DOE Challenge Home.

**TIP: If you are selling through a real estate agent, know the green MLS fields and contract language. This helps you to avoid the risks associated with greenwashing and helps to support the value of green and energy efficient homes by creating eaiser to find comparable homes.**

<http://www.greenresourcecouncil.org/green-resource-council-info/greening-mls>

In this Section

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Find an Appraiser

### Professional Development Program Registry Valuation of Sustainable Buildings: Residential

**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, Candidates for Designation, or Practicing Affiliates 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, Candidates for Designation, or Practicing Affiliates 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.

Select State/Province

Name	Company	City, State	Accepts Fee Assignments
<input type="checkbox"/> Sandra K. Adornatis, SRA	Adornatis Appraisal Service	Punta Gorda, FL	Yes
<input type="checkbox"/> John T. Ashworth, III, SRA *	Ashworth Appraisal Services	Auburn, CA	Yes
<input type="checkbox"/> Robert D. Blincoe, MAI *	Principal Real Estate Investors	Des Moines, IA	Yes
<input type="checkbox"/> David P. Bouvent, SRA *	Key Appraisal Services	Sarasota, FL	Yes
<input type="checkbox"/> Donald N. Briggs, MAI, SRA	Briggs Associates, Inc.	Emmetsburg, MD	Yes
<input type="checkbox"/> Theddi W. Chappell, MAI	Sustainable Values, Inc.	Park City, UT	Yes
<input type="checkbox"/> Lynn N. Christensen, SRA *	Lynn Christensen Appraising Inc.	Layton, UT	Yes
<input type="checkbox"/> Steven D. Clauson, MAI	Real Estate Science, Inc.	Washington, DC	Yes
<input type="checkbox"/> Michael D. Colias, SRA *	JP Morgan Chase	Tampa, FL	No
<input type="checkbox"/> Benjamin B. Davidson, MAI *	Blake and Associates, LLC	Conifer, CO	Yes
<input type="checkbox"/> Lisa K. Desmarais, SRA *	Peak to Peak Appraising, LLC	Broomfield, CO	Yes
<input type="checkbox"/> Christopher B. Dollard, MAI *		Skelman, NJ	Yes
<input type="checkbox"/> Lamer H. Ellis, III, SRA *		Atlanta, GA	Yes
<input type="checkbox"/> Anthony L. Ginesi, Jr., MAI *	Real Property Consultants, Inc.	Clark, NJ	Yes
<input type="checkbox"/> Karen L. Goforth, MAI *	Wells Fargo Bank - RETECHS	St. Petersburg, FL	Yes
<input type="checkbox"/> Franklin Frederick Griffin, SRA *	Griffin Real Estate & Appraisals	Tampa, FL	Yes
<input type="checkbox"/> Steve L. Hales, SRA *	Residential Appraisal Services, LLC	Ogden, UT	Yes
<input type="checkbox"/> Margaret A. Hambleton, SRA *	Hambleton, Inc.	Columbus, OH	Yes
<input type="checkbox"/> Christopher T. Hansen, MAI *	Appraisal Group, Inc.	Midvale, UT	Yes
<input type="checkbox"/> Michael H. Hatch, SRA *	Michael Hatch Real Estate Appraisal, Inc	Las Vegas, NV	Yes
<input type="checkbox"/> Craig S. Heaton, SRA *	C. S. Heaton Appraisals, Inc.	Mesa, AZ	Yes
<input type="checkbox"/> Robert D. Hensley, MAI *	CB Richard Ellis, Inc.	Walnut Creek, CA	Yes
<input type="checkbox"/> Joni L. Hemdon, SRA *	Real Property Analysts/Gulf Coast	Tampa, FL	Yes
<input type="checkbox"/> Michael Hobbs, SRA	Pahroo Appraisal & Consultancy	Chicago, IL	Yes
<input type="checkbox"/> Daniel J. Houlihan, MAI *	Houlihan & O'Malley Real Estate Services	Bronxville, NY	Yes
<input type="checkbox"/> Richard W. Hughes, MAI, SRA *		Adel, IA	Yes
<input type="checkbox"/> Anthony C. Iacolo, MAI *	Blake & Iacolo LLC	Manhattan, NY	Yes
<input type="checkbox"/> Blake Ingram, SRA *	Blake Ingram Appraisal Group, Inc.	Salt Lake City, UT	Yes
<input type="checkbox"/> Mary A. Jewell, SRA *	Morgan Stanley	Tampa, AZ	No
<input type="checkbox"/> Jeffrey R. Jorgensen, SRA *	Jorgensen Residential Appraisal	Draper, UT	Yes

## Step Three:

## Download the Addendum

The Appraisal Institute has developed an official form for documenting high performance home improvements and their value. Download Form 820.04: Residential Green and Energy Efficient Addendum from:

[www.appraisalinstitute.org/educationgreen\\_energy\\_addendum.aspx](http://www.appraisalinstitute.org/educationgreen_energy_addendum.aspx)

 Form 820.04*	Client File #:	Appraisal File #:
	<b>Residential Green and Energy Efficient Addendum</b>	
Client: Joe Doe		
Subject Property: Climate Zone 5a		
City: Arlington	State: USA	Zip: 12345
Additional resources to aid in the valuation of green properties and the completion of this form can be found at <a href="http://www.appraisalinstitute.org/education/green_energy_addendum.aspx">http://www.appraisalinstitute.org/education/green_energy_addendum.aspx</a>		
The appraiser hereby certifies that the information provided within this addendum: <ul style="list-style-type: none"><li>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.</li><li>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.</li><li>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.</li><li>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.</li></ul>		
<b>Green Building:</b> 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. <sup>1</sup> High Performance building and green building are often used interchangeably.		
<b>Six Elements of Green Building:</b> 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.		
<b>Green Features</b>		
The following items are considered within the appraised value of the subject property:		
<b>Certification</b>	DOE Challenge Home	Year Certified: 2013
Certifying Organization: <input type="checkbox"/> Home Innovation Research Labs (ICC-700) <input type="checkbox"/> USGBC (LEED) <input checked="" type="checkbox"/> Other:		<input checked="" type="checkbox"/> Verification Reviewed on site
<input checked="" type="checkbox"/> Certification attached to this report		
<b>Rating Certified</b>	Score: N/A	<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 National Green Building Standard Certified: <input type="checkbox"/> Bronze <input type="checkbox"/> Silver <input type="checkbox"/> Gold <input type="checkbox"/> Emerald Green Certifying Organization URL (website) <a href="http://www1.eere.energy.gov/buildings/residential/ch_index.html">www1.eere.energy.gov/buildings/residential/ch_index.html</a>
<b>Additions</b>	Explain any additions or changes made to the structure since it was certified: N/A	
Do changes require recertification to verify rating is still applicable? <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>Comments</b>	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.	
Attach the rating worksheet that provides the ratings for each element to provide a better understanding of the features. The worksheet will assist in comparing the subject to sales rated by different organizations.		
The objective of this Addendum is to standardize the communication of the high performing features of residential properties. Identifying the features not found on the 1004 form provides a basis for comparable selection and analysis of the features. Builders, contractors, homeowners, and third party verifiers are encouraged to complete this Addendum and present to appraisers, agents, lenders, and homeowners.		

<sup>1</sup> U.S. Environmental Protection Agency at [www.epa.gov/greenbuildings/pubs/about.htm](http://www.epa.gov/greenbuildings/pubs/about.htm).

\*NOTICE: The Appraisal Institute publishes this form for use by appraisers where the appraiser deems use of the form appropriate. Depending on the assignment, the appraiser may need to provide additional data, analysis and work product not called for in this form. The Appraisal Institute plays no role in completing the form and disclaims any responsibility for the data, analysis or any other work product provided by the individual appraiser(s).  
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# Complete the Addendum

Client: Joe Doe		Client File #:	
Subject Property: Climate Zone 5		Appraisal File #:	

ENERGY EFFICIENT ITEMS			
The following items are considered within the appraised value of the subject property:			
Insulation	<input type="checkbox"/> Fiberglass Blow-In <input type="checkbox"/> Other (Describe): <input checked="" type="checkbox"/> Basement Insulation (Describe): High Density SPF <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 35 <input type="checkbox"/> Ceiling 49 <input type="checkbox"/> Floor 30
	<input checked="" type="checkbox"/> Foam Insulation <input type="checkbox"/> Cellulose <input type="checkbox"/> Fiberglass Batt Insulation		
Envelope	Envelope Tightness: 1.25 Unit: <input type="checkbox"/> CFM25 <input type="checkbox"/> CFM50 <input checked="" type="checkbox"/> ACH50 <input type="checkbox"/> ACHnatural <input checked="" type="checkbox"/> Envelope Tightness based on Blower Door Test		
Water Efficiency	<input type="checkbox"/> Reclaimed Water System (Explain): <input type="checkbox"/> Greywater reuse system		Location of cistern: <input type="checkbox"/> Cistern - Size: Gallons
	<input checked="" type="checkbox"/> WaterSense* fixtures <input type="checkbox"/> Rain Barrels Provide Irrigation		
Windows	<input checked="" type="checkbox"/> ENERGY STAR* <input type="checkbox"/> Low E <input type="checkbox"/> High Impact <input type="checkbox"/> Storm <input type="checkbox"/> Double Pane <input type="checkbox"/> Triple Pane <input type="checkbox"/> Tinted <input type="checkbox"/> Solar Shades <input type="checkbox"/> Skylights - #: <input type="checkbox"/> Solar Tubes - #: <input type="checkbox"/> Other (Explain):		
Day Lighting	<input checked="" type="checkbox"/> ENERGY STAR Light Fixtures		
Appliances	ENERGY STAR* Appliances: <input checked="" type="checkbox"/> Dishwasher all appliances <input checked="" type="checkbox"/> Refrigerator all appliances <input type="checkbox"/> Other:		Water Heater: <input type="checkbox"/> Solar <input checked="" type="checkbox"/> Heat Pump <input type="checkbox"/> Tankless <input type="checkbox"/> Coil Size: Gall.
	Appliance Energy Source: <input type="checkbox"/> Propane <input checked="" type="checkbox"/> Electric <input type="checkbox"/> Natural Gas <input type="checkbox"/> Other (Describe):		
HVAC (Describe in Comments Area)	<input checked="" type="checkbox"/> High Efficiency HVAC SEER: 14 Efficiency Rating: % AFUE*: 95 % *Annual Fuel-Utilization Efficiency		<input checked="" type="checkbox"/> Heat Pump Efficiency Rating: COP: HSPF: 9 SEER: EER: <input type="checkbox"/> Thermostat/Controllers <input type="checkbox"/> Radiant Floor Heat <input type="checkbox"/> Geothermal
	<input checked="" type="checkbox"/> Programmable Thermostat		
Energy Rating	<input checked="" type="checkbox"/> ENERGY STAR *Home - Version: 3 <input type="checkbox"/> Other (Describe): Home Energy Score (HES) (Score range 1-10): 46 <input checked="" type="checkbox"/> Certification Attached		
Indoor Air Quality	<input checked="" type="checkbox"/> Indoor Air PLUS Package <input type="checkbox"/> Energy Recovery Ventilator Unit or Whole Building Ventilation System <input type="checkbox"/> Non Toxic Pest Control		
HERS Information	Rating: 46 Monthly Energy Savings on Rating: \$ 18.50		Date Rated: 5/15/13
Utility Costs	Average Annual Utility Cost: \$ 141 per month based on: REM/rate # of Occupants: 4		
Energy Audit N/A	<input type="checkbox"/> Infrared Photograph Attached Has an energy audit/rating been performed on the subject property? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If yes, comment on work completed as result of audit.		
Comments (Include source for information provided in this section)  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: Rater's Name and Company		
	Attach REM/rate reports, filled out checklists for EPA Indoor airPLUS, EPA renewable ready home solar electric and EPA renewable ready home solar thermal		

Complete the form and provide a copy to the appraiser as guidance to ensure that all the high-performance features of your DOE Challenge Home are included in the final report.

In the forthcoming guide, *A Blueprint to Unlock the Value of the Energy Efficient Home (2013)*, the CNT Energy and the National Home Performance Council note that energy efficiency programs can complete the form in the Addendum format to provide a record of the project.

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# Provide your appraiser with the Addendum

Now it's in the hands of the appraiser, but you have maximized your opportunity for an appraisal that recognizes the value of your high-performance home.

Client:	Joe Doe	Client File #:	
Subject Property:	Climate Zone 5	Appraisal File #:	

Solar Panels					
The following items are considered within the appraised value of the subject property: RENEWABLE READY HOME					
Description	N/A	Array #1	<input type="checkbox"/> Leased <input type="checkbox"/> Owned	Array #2	<input type="checkbox"/> Leased <input type="checkbox"/> Owned
kW (size)					If Active System - type <input type="checkbox"/> Direct <input type="checkbox"/> Indirect
Manufacturer of Panels					If Passive System - type <input type="checkbox"/> Integral collector <input type="checkbox"/> Thermosyphon
Warranty on Panels					Storage Tank Size # Gallons:
Age of Panels					Collector Type <input type="checkbox"/> Flat-Plate Collector <input type="checkbox"/> Integral Collector <input type="checkbox"/> Evacuated-Tube Solar
Energy Production kWh per Array					Back-Up System <input type="checkbox"/> Conventional Water Htr <input type="checkbox"/> Tankless On Demand <input type="checkbox"/> Tankless Heat Pump
Source for Energy Production Estimate					Age of System
Location (Roof, Ground, Etc.)					Warranty Term
Tilt/Slope for Array					Manufacturer
Azimuth per Array					Solar Energy Factor (SEF) (Rating range 1 to 11 - higher number is more efficient)
Age of Inverter(s)					
Manufacturer					
Warranty Term					
Name of Utility Company:		Cost per kWh charged by Company: \$ /kWh			
<b>Comments</b> (Discuss incentives available for new panels, condition of current panels, and any maintenance issues. If leased, provide the lease terms.)  A free online tool and manual for valuing the energy production of the Solar PV System is available at <a href="http://www.pvvalue.com">www.pvvalue.com</a>  Download the PV Value™ Manual for explanation of the solar terms on this form and inputs used in the PV Value Tool.		Discuss source of information and define other renewable energy sources, such as wind, hydropower, biomass power, etc.  This home is renewable ready for solar electric and thermal.			

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# Residential Green and Energy Addendum

Client:	Joe Doe	Client File #:	
Subject Property:	Climate Zone 5	Appraisal File #:	

Location - Site	
The following items are considered within the appraised value of the subject property:	
Walk Score <b>N/A</b>	Score: _____ Source: _____ (Example: <a href="http://www.walkscore.com">http://www.walkscore.com</a> )
Public Transportation <b>N/A</b>	<input type="checkbox"/> Bus - Distance: _____ 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 type="checkbox"/> Water Efficient <input type="checkbox"/> Natural
Comments	DOE Challenge Home certification concentrates only on the actual physical building and its high performance aspects.

Incentives - Amount of Incentive and Terms	
The following items are considered within the appraised value of the subject property:	
Federal	
State	
Local	
Source (For example <a href="http://www.dsireusa.org">www.dsireusa.org</a> )	
Comments	Incentives offset cost and should be reported in the cost approach section of the report. Incentives are typically not a sales comparison approach concession since they do not transfer with the property.

Completed by: Builder or Rater Title: GC or Rater Date: 5/15/13

need to provide additional data, analysis and work product not called for in this form. The Appraisal Institute plays no role in completing the form and disclaims any responsibility for the data, analysis or any other work product provided by the individual appraiser(s).  
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Client:	Client File #:
Subject Property:	Appraisal File #:

## Residential Green and Energy Efficient Addendum Glossary and Resources

**ICC-700 National Green Building Standard (NGBS):** An ANSI-approved residential green building standard developed by the National Association of Home Builders (NAHB) and the International Code Council (ICC). It is applicable to single and multifamily projects, renovations and additions and residential land development. To comply, all buildings must incorporate sustainable lot development techniques and address energy, water & material resource efficiency and indoor environmental quality. Also, all owners must be educated about building operation and maintenance. Certification to the NGBS is provided by the Home Innovation Research Labs. <http://www.nahb.org/pags.aspx/genetic/sectionID=2510> or <http://www.homeinnovation.com/>.

**LEED:** Leadership in Energy and Environmental Design is redefining the way we think about the places where we live, work and learn. As an internationally recognized mark of excellence, LEED provides building owners and operators with a framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions. <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1988>

**Energy Star®:** ENERGY STAR certified new homes must meet strict energy efficiency guidelines set by the U.S. Environmental Protection Agency. These homes are independently verified to be at least 15% more energy efficient than homes built to the 2009 International Energy Conservation Code (IECC), and feature additional measures that deliver a total energy efficiency improvement of up to 30 percent compared to typical new homes and even more compared to most resale homes. [http://www.energystar.gov/index.cfm?c=new\\_homes.hm\\_index](http://www.energystar.gov/index.cfm?c=new_homes.hm_index)

**Home Energy Score (HES):** The Home Energy Score is similar to a vehicle's mile-per-gallon rating. The Home Energy Score allows homeowners to compare the energy performance of their homes to other homes in the area. It also provides homeowners with suggestions for improving their homes' efficiency.

The process starts with a home energy assessor collecting energy information during a brief home walk-through. The assessor then scores the home on a scale of 1 to 10, with a score of 10 indicating that the home has excellent energy performance. A score of 1 indicates that the home needs extensive energy improvements. In addition to providing the score, the home energy assessor provides the homeowner with a list of recommended energy improvements and the associated cost savings estimates. [http://www1.eere.energy.gov/buildings/residential/hes\\_index.html](http://www1.eere.energy.gov/buildings/residential/hes_index.html)

**HERS Index:** The Home Energy Rating System (HERS) Index is the Industry Standard by which a home's energy efficiency is measured. It's also the nationally recognized system for inspecting and calculating a home's energy performance. <http://www.resnet.us/hers-index>. This index is assessed by a qualified third party certifier based on the physical characteristics of the house. The energy estimates from this assessment may vary depending on the lifestyle of the occupants, increasing utility expenses, and changes in the maintenance or characteristics of the energy features.

**Building Envelope:** The building envelope is everything that separates the building's interior from the exterior. This includes the foundation, exterior walls, roof, doors and windows.

**Geothermal:** A geothermal heat pump uses the constant below ground temperature of soil or water to heat and cool your home. <http://energy.gov/energysaver/articles/geothermal-heat-pumps>

**Low-E:** Low emittance indicates a coating is added to the glass surface. The coating allows visible light to pass through the glass while stopping the radiant heat energy from the sun and heat sources in the building from passing through the glass. Approximately 40% of the sun's harmful ultra violet rays are blocked and insulation enhanced.

**Whole Building Ventilation System:** A whole building ventilation system assists in a controlled movement of air in tight envelope construction and may include air-purifying systems. Whole building ventilation equipment is often a part of the forced air heating or cooling systems.

**Energy Recovery Ventilation System:** Often called Heat Recovery Ventilators (HRV). These systems replenish the indoor air without wasting all the energy already used to heat the indoor air. In some climates, these systems are also used to handle water vapor in the incoming air.

**Passive Solar:** Passive solar is technology for using sunlight to light and heat buildings with no circulating fluid or energy conversion system. <http://nrcdc.nrel.gov/solar/glossary> A complete passive solar building design has the following five elements: (1) aperture (collector) (2) absorber (3) thermal mass (4) distribution (5) control. <http://www.nrel.gov/docs/ty01/ost/27954.pdf>

**SEER:** Seasonal energy efficiency ratio - The higher the SEER rating, the more energy efficient the equipment is. A higher SEER can result in lower energy costs. [http://www.energystar.gov/index.cfm?c=tax\\_credits\\_tx\\_definitions&ds=ssps.mcs.seer.eer](http://www.energystar.gov/index.cfm?c=tax_credits_tx_definitions&ds=ssps.mcs.seer.eer)

**Water Sense:** EPA released its Final Version 1.1 WaterSense New Home Specification. This specification will be effective January 1, 2013 and establishes the criteria for new homes labeled under the WaterSense program and is applicable to newly constructed single-family and multi-family homes. [http://www.epa.gov/watersense/new\\_homes/homes\\_final.html](http://www.epa.gov/watersense/new_homes/homes_final.html)

**Water Heaters:** Solar, Heat Pump, Tankless On Demand or Tankless Coil water heaters are described at the following location: <http://energy.gov/energysaver/articles/solar-water-heaters>.

**Green Certifying Organizations:** A partial list of organizations can be found at: <http://www.usgbc.org/ShowFile.aspx?DocumentID=2001>

**HERS Insulation Installed Rating:** Rating 1 is the best with 3 the lowest rating. [http://www.resnet.us/standards/Enhancements\\_to\\_National\\_Rating\\_Standards.pdf](http://www.resnet.us/standards/Enhancements_to_National_Rating_Standards.pdf)

**SAVE Act:** The SAVE Act is proposed legislation to improve the accuracy of mortgage underwriting used by federal mortgage agencies by ensuring that energy costs are included in the underwriting process. <http://www.fint.org/finance-and-leasing/save-act>

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# Thank You

Questions?

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