



# ENERGY STAR Qualified Homes Revision 02 Review for Utility Sponsor Partners

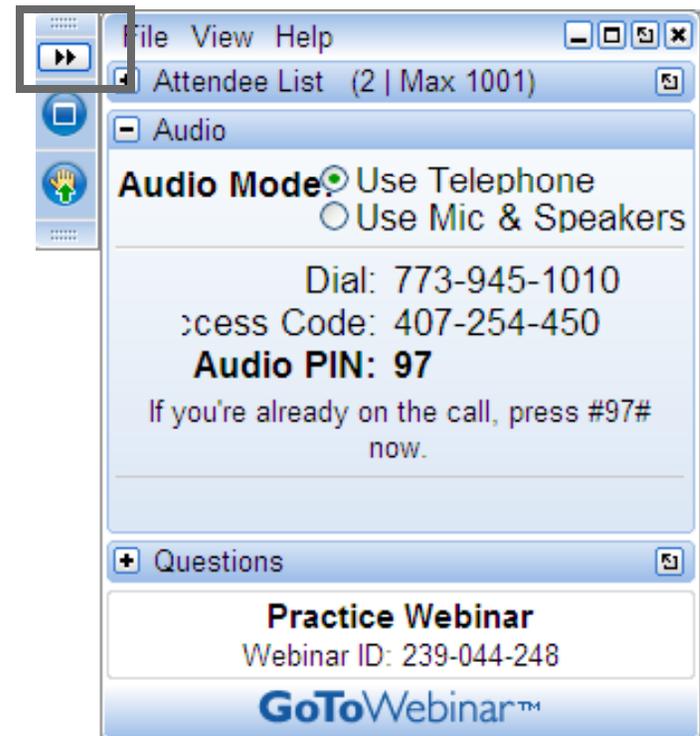
February 3, 2011

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# Using your toolbar



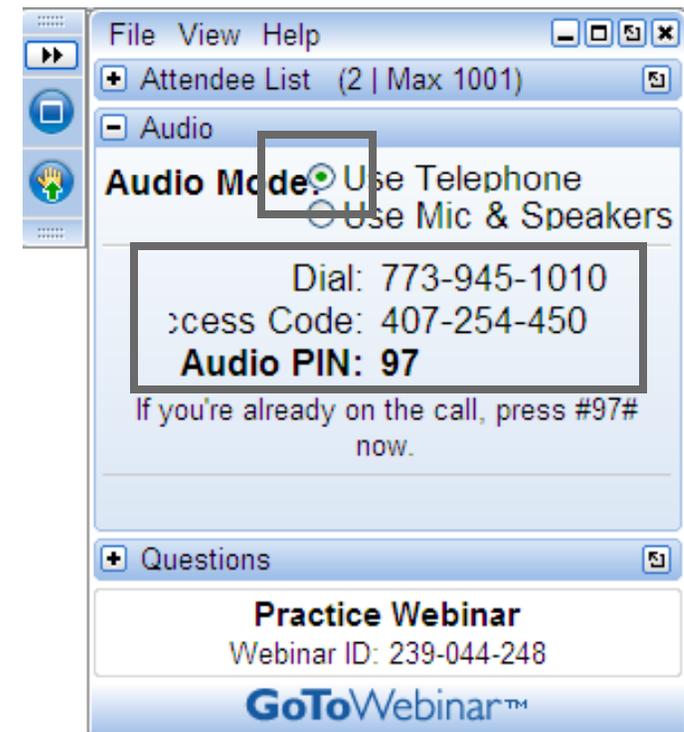
Expand/collapse →



# Audio – Telephone



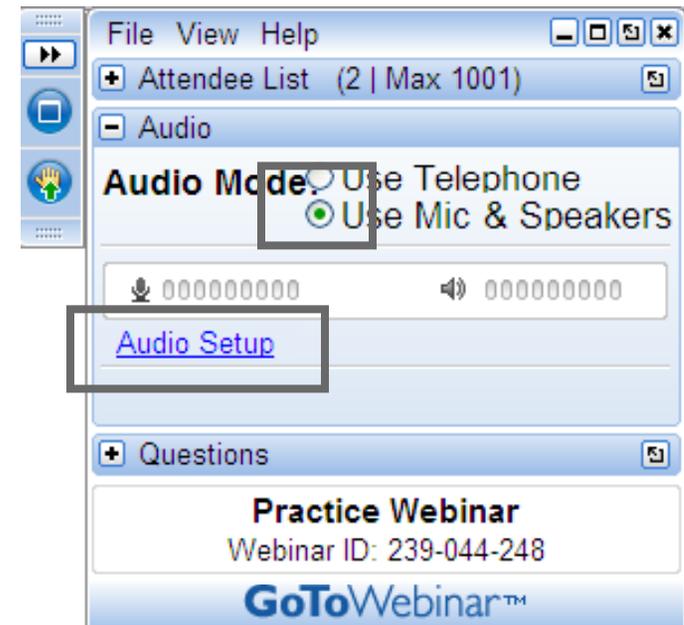
- **Using your telephone**
  - Select “use telephone” button
  - Dial-in to the number and add code
  - Add audio pin



# Audio – Computer Speakers



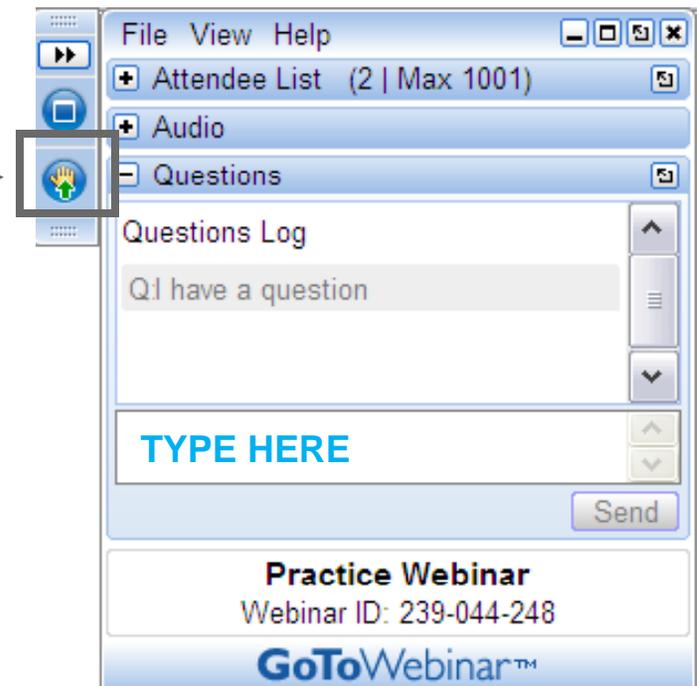
- **Using your computer speakers**
  - Select the “Use mic & speakers” button
  - Unmute your desktop
  - Click on Audio Setup to ensure your speakers are working



# Asking questions



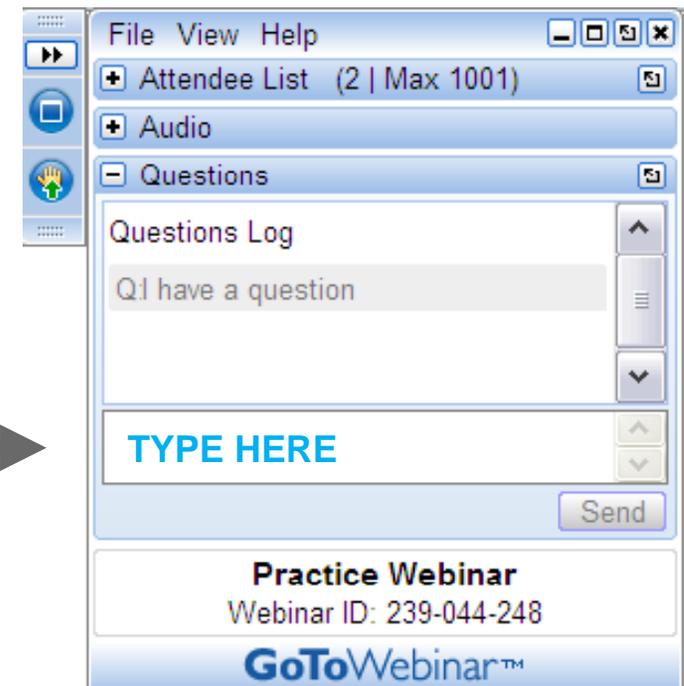
Raise your hand  
to ask a question.



# Asking questions



Or type your question and click, "Send".



# Agenda

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- **Brief Review of Version 2.5 and Version 3**
- **Impacts of Revision 02**
- **Version 3 Training Requirements**
- **EPA Support Plan**



# Overview of Version 2.5 and Version 3

# Major Changes from v2 to v3



- **Variable vs. Fixed HERS Index Threshold**

A custom threshold called the ENERGY STAR HERS Index Target is calculated for each home following the Performance Path.

- **Size Adjustment Factor**

Homes of all sizes may be labeled. However, homes larger than a benchmark size for a specified number of bedrooms (called the 'Benchmark Home Size') must apply a Size Adjustment Factor. This will result in reduced ENERGY STAR HERS Index Targets and increased requirements for larger homes. **Benchmark Home Size**

Bedrooms	1	2	3	4	5	6	7	8
CFA	1,000	1,600	2,200	2,800	3,400	4,000	4,600	5,200

- **New inspection checklists**

The current Thermal Bypass Checklist has been expanded into the Thermal Enclosure Checklist (TEC). New HVAC Quality Installation and Water Management Checklists have been added.

# What is v2.5?



- **v3 guidelines with allowances for transition**

v2.5 applies to:

- Single-family homes that are permitted before April 1, 2011 and completed between July 1, 2011 and Dec. 31, 2011; and
- All homes that are both permitted and completed between April 1, 2011 and December 31, 2011.

Homes that can be qualified under v2 can, at the builder's discretion, be qualified under v2.5.

- **v2.5 will help partners succeed with v3**

By completing all mandatory checklists, but providing an allowance for deficiencies during this transitional period, v2.5 allows partners to identify what parts of the full v3 guidelines require further preparation and assistance.

# Qualifying homes under v2.5 & v3



1. Check eligibility.
2. Check Benchmark Home Size.
3. Select Version 3 energy efficiency measures.

## Prescriptive Path

1. Build the home using the ENERGY STAR Reference Design.
2. Complete the inspection checklists.

## Performance Path

1. Model the home and find the ENERGY STAR HERS Index Target.
2. Select upgrades that meet the mandatory requirements and achieve a HERS Index  $\leq$  ENERGY STAR HERS Index Target .
3. Complete the inspection checklists.

# Transition to v3



	ENERGY STAR for Homes Guidelines		
	Version 2.0	Version 2.5	Version 3.0
Performance Path	Fixed HERS Index	Variable HERS Index	
Prescriptive Path	Builder Option Package (BOP)	ENERGY STAR Reference Design	
House Size	No impact on requirements	Size Adjustment Factor	
Duct Leakage to Outside	<ul style="list-style-type: none"> <li>• <math>\leq 4</math> CFM<sub>25</sub> per 100 ft<sup>2</sup> CFA for Prescriptive Path</li> <li>• <math>\leq 6</math> CFM<sub>25</sub> per 100 ft<sup>2</sup> CFA for Performance Path</li> </ul>		$\leq 4$ CFM <sub>25</sub> per 100 ft <sup>2</sup> CFA for both Prescriptive and Performance Paths
Total Duct Leakage	No maximum leakage		$\leq 6$ CFM <sub>25</sub> per 100 ft <sup>2</sup> CFA

# Transition to v3



ENERGY STAR for Homes Guidelines			
	Version 2.0	Version 2.5	Version 3.0
<b>ENERGY STAR Labeled Products – Prescriptive Path</b>	$\geq 5$ ENERGY STAR qualified products	<ul style="list-style-type: none"><li>• Where refrigerators, dishwashers, ceiling fans, and exhaust fans are installed, products shall be ENERGY STAR qualified.</li><li>• ENERGY STAR qualified CFLs or pin-based lighting in 80% of fixtures in RESNET-defined Qualifying Light Fixture Locations shall be installed. (Alternate: ENERGY STAR Advanced Lighting Package)</li></ul>	

# Transition to v3



ENERGY STAR for Homes Guidelines			
	Version 2.0	Version 2.5	Version 3.0
<b>ENERGY STAR Labeled Products – Performance Path</b>	$\geq 1$ ENERGY STAR qualified product category		<ul style="list-style-type: none"><li>• No requirements, though the Expanded ENERGY STAR Reference Design Definition is configured with an ENERGY STAR qualified refrigerator and dishwasher, qualified ceiling and exhaust fans, and fluorescent lighting in 80% of lighting fixtures in RESNET-defined Qualifying Light Fixture Locations.</li><li>• Therefore, the ENERGY STAR HERS Index Target must be met by either including efficient appliances and lighting or by offsetting their performance with other features.</li></ul>

# Transition to v3



ENERGY STAR for Homes Guidelines			
	Version 2.0	Version 2.5	Version 3.0
<b>HERS Scoring Limitations</b>	Up to 20% of screw-in light bulb sockets may use CFLs to achieve HERS Index.	There is no cap on use of CFLs to achieve ENERGY STAR HERS Index Target.	
	On-site power may not be used to achieve HERS Index.	On-site power may be used if the home is larger than the Benchmark Home to make up for the incremental reduction in the ENERGY STAR HERS Index Target caused by the Size Adjustment Factor.	

# v3 and advanced codes

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- **Initial v3 implementation in states with advanced codes**
  - EPA is evaluating regional modifications to Version 3 for states with advanced energy codes, including California, Florida, Hawaii, and the Pacific Northwest.
- **Advanced code adoption after v3 implementation**
  - As states that initially are subject to the national Version 3 requirements adopt more rigorous codes, EPA will provide modified guidelines.
  - Until such time, use the national Expanded ENERGY STAR Reference Design Definition to qualify homes.

# Costs and Savings with v3

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- **Version 3 is designed to be at least 15% better than the 2009 IECC.**
  - Typical savings are expected to be even higher due to the benefits of the inspection checklists.
  - Illustrative examples of incremental costs and savings are available on EPA's Web site at [www.energystar.gov/newhomesguidelines](http://www.energystar.gov/newhomesguidelines)
  - EPA believes that the program is still cost-effective from a utility standpoint, but as with any utility cost effectiveness test, is highly dependent on the particulars of the utility.



# Revision 02 Update

# Overview of the Revision Process

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- **Consistent revision process and versioning being implemented.**
  - Purpose of revision process is to be responsive to partner questions, to disseminate and enforce policy changes in a consistent manner, and to adapt program as needed for success.
  - Anticipated revisions once per quarter in 2011, slowing to once every 6 months in 2012 and beyond.
  - Majority of the changes in Revision 02 are from specific requests for clarifications from the Training Provider sessions.

# Release of Revision 02

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- **Revision 02 will be released in the next week, including:**
  - Revision 02 Version Tracking Document
  - ENERGY STAR v2.5 & 3 (Revision 02) National Program Requirements
  - ENERGY STAR v3 (Revision 02) County-Level Reference Designs
  - ENERGY STAR Inspection Checklists
  - ENERGY STAR v3 (Revision 02) HERS Index Target Procedure
- **Supporting resources available in March:**
  - Thermal Enclosure System Rater Checklist Guidebook
  - HVAC Quality Installation Rater Checklist Guidebook
  - Water Management System Builder Checklist Guidebook
  - Rater Training Slide Deck
  - ENERGY STAR Version 3 Trainer Comment Responses
  - Version 3 Rater Training Tests

# Highlights of Revision 02

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- **Significant feedback was received from training providers and other partners since release of Revision 01.**
  - A few unexpected barriers were identified and the intent of many items needed to be clarified.
  - EPA encourages partners to read the version tracking document and the revised program documents upon release for details.
- **Major Changes**
  - Excludes most basements from Size Adjustment Factor.
  - Extends timeline: v2.5 mandatory for most homes permitted after April 1, 2011 instead of January 1, 2011.
  - Better aligns exceptions to the window performance and insulation requirements with the exceptions included in the 2009 IECC.
  - Better explains the process for using the equivalent U-factor and UA alternative compliance paths.

# Highlights of Revision 02

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- **Thermal Enclosure System Changes**

- Designates minimum R-values for attic edges. Requirements can be met by using any available strategy, such as a raised-heel truss, alternate framing that provides added space, and/or high-density insulation.
- Exempts up to 10% of the total exterior wall surface area from the thermal bridging requirements to accommodate masonry fireplaces or similar architectural features.
- Requires slab insulation to be aligned with thermal boundary of walls in CZ 4 and higher.
- Allows 16" instead of 24" o.c. spacing for 2x6 walls in Climate Zones 1 through 4.

# Highlights of Revision 02



- **HVAC System Contractor Checklist Changes:**
  - Requires ACCA Manual J design temperatures to be used unless otherwise required by code.
  - Better defines the number of occupants required to be used in sizing calculations.
  - Allows 'Smart Cyclor' to be used in place of ECM/ICM fan for supply-side ventilation systems.
  - For home plans built in multiple orientations, allows worst-case orientation to be used to select equipment size in some cases:

“If the loads are calculated for multiple orientations and the loads across all orientations vary by  $\leq 25\%$ , then the largest load shall be permitted to be used for equipment selection for all orientations, subject to the over-sizing limits of ACCA Manual S. Otherwise, the contractor shall group the load for each orientation into a set with  $\leq 25\%$  variation and equipment selection shall be completed for each set of loads.

# Highlights of Revision 02



- **HVAC System Rater Checklist Changes:**
  - When HVAC condenser is installed after time of inspection, provides additional options to verify HVAC manufacturer and serial # using photographs and provides exemption for testing thermostat controls.
  - Requires rater to verify that proper number of occupants, rather than bedrooms, has been used in HVAC sizing calculation.
  - Removes inadvertent exemption on total duct leakage testing for homes with ducts in conditioned space.
  - Adds combustion safety testing for unvented combustion appliances.
  - Clarifies that duct leakage testing must occur after installation of air handler and grilles.
  - Allows rater verification of net-free area for bedroom pressure balancing to be done without measuring airflow from registers.
  - Removes net exhaust and net supply flow restrictions in alignment with anticipated revisions to ASHRAE 62.2-2010.
  - Provides airflow test exemptions for kitchen exhaust fans that are integrated with microwaves.
  - Allows both RESNET and BPI combustion safety test protocols to be used.
  - Clarifies and expands options for combustion safety testing of fireplaces.

# Highlights of Revision 02

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- **Water Management System Checklist Changes**
  - Relaxes requirements for gutters and downspouts; now only required for homes that don't have a slab-on-grade foundation and do have expansive or collapsible soils.

# Implementation timeline



Permit Date	Building Completion Date				
	7/1/2010	4/1/2011	7/1/2011	1/1/2012	7/1/2012
Before 4/1/2011	V2 Single Family Homes		V2.5	V3	
	V2 Condos and Apts in Multi-Family Buildings			V3	
Between 4/1/2011 and 12/31/2011	V2.5 All Homes			V3	
On or After 1/1/2012				V3 All Homes	

<b>Version 2</b>	Version 2: 2006 Guidelines
<b>Version 2.5</b>	Version 2.5: Version 3 ENERGY STAR Reference Design with Air Barriers and Air Sealing sections of Thermal Enclosure Checklist. Other checklists completed but not enforced
<b>Version 3</b>	Version 3: Version 3 ENERGY STAR Reference Design with all checklists enforced



# **v3 Training Requirements and Program Preparation**

# Version 3 training requirements

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- **EPA is establishing training requirements for:**
  - Builders – online training
  - Raters – training via RESNET training accredited providers
  - HVAC contractors – training/credentialing through recognized industry groups

# Version 3 training requirements

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- **Builder training**

- The ENERGY STAR Orientation Training for builders is a free, web-based training available through the ENERGY STAR website. It can be completed in under one hour and includes a brief quiz on the content.
- This training includes:
  - Section 1: Partnering with ENERGY STAR
  - Section 2: ENERGY STAR Resources for Builders
  - Section 3: Version 3 and Beyond
  - Section 4: Other Important Resources
- Builders who joined prior to 2011 must complete their orientation by January 1, 2012 to continue to hold active ENERGY STAR partnerships.
- New builders will need to take the orientation to join ENERGY STAR for the first time.

# Version 3 training requirements

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- **Rater training**

- ENERGY STAR Version 3 training for raters will be available through RESNET-accredited Training Providers who have attended a train-the-trainer session.
- Raters must complete the 2+ day ENERGY STAR Version 3 Training by January 1, 2012 to maintain active ENERGY STAR partnerships and must complete exam.

New raters who join beginning in 2012 will need to take this training to join ENERGY STAR for the first time.

- All rater partners must also be certified and working under accredited Providerships.
- This training will be available starting mid-March, 2011.

# Version 3 training requirements



- **HVAC contractor training/credentialing**
  - EPA's goal is to have qualified/credentialed contractors installing HVAC systems in homes qualified under Version 3.
  - Credentialing will be offered by EPA-recognized Quality Installation Training & Oversight Organizations (aka 'H-QUITOs').
    - See ENERGY STAR web site for more on H-QUITO roles & responsibilities
    - H-QUITO application pending for ACCA
  - To obtain credentials, contractors must demonstrate through an application to H-QUITO that they have the knowledge, skills, and company policies to deliver QI services in qualified homes.
    - H-QUITO may have supplemental requirements as well
  - A pre-requisite of credentialing will be ENERGY STAR v3 Orientation Training
    - Offered directly by the H-QUITO (not EPA)
    - ACCA plans to roll out on-line training this month
  - HVAC contractors must be credentialed before they can install HVAC systems in v3 homes.
  - Lists of credentialed contractors will be available from H-QUITOs via the ENERGY STAR website.
  - Raters will also sign off on the inspection checklists that they have verified HVAC contractors' credential status.

# Version 3 training requirements

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- **HVAC contractor training/credentialing (cont'd)**
  - **The ENERGY STAR v3 training covers**
    - What ENERGY STAR for Homes Version 3 Guidelines are
    - What the program requires of HVAC contractors
    - How HVAC contractors can receive the credentials they need to work on ENERGY STAR qualified homes.
  - **The ENERGY STAR v3 training does NOT cover**
    - Technical training on how to do HVAC quality installation.
    - Contractors with gaps in this area will need to receive training before submitting their application for credentialing.

# Preparation and training

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- **How to support your builders and their trade allies for the transition to the new Version 3 guidelines:**

- Deliver individual mentoring or group training on Version 3 requirements
- Facilitate local training events through industry-recognized trainers
- Direct partners and allies to ENERGY STAR training materials to use on their own

HVAC contractors, architects, insulators, and roofing and foundation contractors may need additional training to see the value in these enhanced practices and understand how to do them correctly. As a program sponsor, consider organizing, sponsoring, or hosting additional training for these important allies.

# Training timeline



# Early v3 adoption

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- **No homes may be qualified under Version 3 until January 1, 2012 except where a utility or state sponsor is mandating or incentivizing early adoption of Version 3 in their area.**
  - In these cases, EPA will allow the labeling of ENERGY STAR Version 3 homes prior to January 1, 2012 on a pilot program basis, provided that the sponsor meets certain requirements.
  - For more information, visit:  
<http://www.energystar.gov/newhomessponsors>
  - Implementing a pilot program? Notify EPA at:  
[www.surveymonkey.com/s/v3pilotnotification](http://www.surveymonkey.com/s/v3pilotnotification)



# EPA Support Plan

# Partner resources



## Main new homes partner page

[www.energystar.gov/newhomespartners](http://www.energystar.gov/newhomespartners)

### Benefits of Working with ENERGY STAR



Working with ENERGY STAR can increase revenue, enhance customer satisfaction, and provide national recognition as an industry leader.

- » Builders and Developers
- » Home Energy Raters
- » Utilities , Local Governments , Builder Associations
- » Architects
- » HVAC Contractors
- » Lenders , Appraisers , and Real Estate Agents

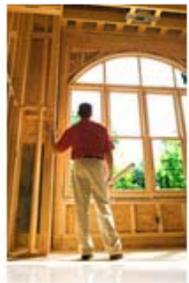
### Features of ENERGY STAR Qualified Homes



ENERGY STAR qualified homes can include a variety of "tried-and-true" energy-efficient features.

- » [Learn More about the Features of ENERGY STAR Qualified Homes](#)
- » [ENERGY STAR & Green Building](#)
- » [Take a Tour "Behind the Walls"](#)

### Program Resources



Resources for program participants and stakeholders.

- » [Updated ENERGY STAR for New Homes Program Guidelines](#)
- » [Marketing Resources](#)
- » [Educational Resources and Free Webinars](#)
- » [Program Updates](#)

### Partnership Information



Information about ENERGY STAR Partnership.

- » [Join ENERGY STAR](#)
- » [My ENERGY STAR Account](#)
- » [Partner Locator](#)
- » [ENERGY STAR Awards](#)

# Partner Resources



## New HVAC page [www.energystar.gov/newhomesHVAC](http://www.energystar.gov/newhomesHVAC)

### How to Work on ENERGY STAR Qualified Homes

Every year, [thousands of builders](#) across the United States construct ENERGY STAR qualified homes. With the ENERGY STAR for Homes Version 3 guidelines that become mandatory on January 1, 2012, EPA will be requiring that the HVAC systems in all homes that earn the ENERGY STAR label be installed according to industry-accepted Quality Installation (QI) guidelines established in [ANSI/ACCA Standard 5 QI](#) [EXIT ↗](#). This standard establishes industry-accepted best practices for proper installation of HVAC systems for optimal performance – providing homeowners with comfort, efficiency, and savings. The four main requirements of an HVAC QI are:

- Proper equipment sizing and component matching;
- Correct refrigerant charge;
- Proper airflow to match refrigerant capacity; and
- Sealing ducts to minimize leaks.

To document that these steps are properly completed, the HVAC contractor will complete a detailed inspection checklist based on the QI standard. Homes that earn the ENERGY STAR label under Version 3 must meet all of the requirements of this checklist, and the form must be signed by a qualified, credentialed HVAC contractor. In addition to the HVAC contractor checklist, the Home Energy Rater will have an HVAC system checklist intended to verify equipment and confirm proper installation.

#### **What defines a qualified<sup>1</sup>, credentialed HVAC Contractor?**

To help ensure that HVAC contractors installing systems in ENERGY STAR qualified homes are properly trained and qualified to perform HVAC QI services, EPA is requiring that contractors:

1. Attend an awareness/orientation training class on the ENERGY STAR HVAC QI checklist and requirements, as offered by an EPA-recognized third-party training organization;
2. Submit a credentialing application to an EPA-recognized third-party training organization that demonstrates that they possess the knowledge

# Partner Resources

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**New Sponsor page**

[www.energystar.gov/newhomessponsors](http://www.energystar.gov/newhomessponsors)

**Coming Soon!**

# Partner Resources



## New guidelines page

[www.energystar.gov/newhomesguidelines](http://www.energystar.gov/newhomesguidelines)

### ENERGY STAR for New Homes Program Guidelines

#### Which Version of the Guidelines Should I Use?

ENERGY STAR for New Homes helps homebuyers easily identify homes that are significantly more energy efficient than standard construction in the marketplace. As code requirements have become more rigorous and builder practices have become more efficient, EPA has periodically modified the guidelines to ensure that qualified homes represent a meaningful improvement over non-labeled homes.

The ENERGY STAR for Homes Version 3 guidelines are currently being phased in. You can learn more about the transition and determine which version to use for a particular home by visiting the [Transition Timeline](#).



EPA has developed an alternative set of guidelines for [manufactured homes](#) built to the HUD code.

# Partner Resources



## Version 3 page

### Should I use the Version 3 guidelines?

- All homes completed starting January 1, 2012 must be qualified under v3.
- No homes may be qualified under v3 prior to January 1, 2012, except as part of a [sponsored v3 pilot program](#).

For more information about the transition from Version 2 to Version 3, including the transitional Version 2.5 guidelines, see the [Transition Timeline](#).

### Is my home eligible to earn the ENERGY STAR?

To earn the ENERGY STAR under the Version 2.5 and 3 Guidelines, homes must be one of the following:

- Single family homes; OR
- Units in multifamily buildings with 3 stories or less; OR
- Units in four- or five-story multi-family buildings, including mixed-use buildings, that have their own heating, cooling, and hot water systems, separate from other units.

### How to Qualify a Home

#### Select the core energy efficiency measures

There are two paths to qualify a home to earn the ENERGY STAR. The Prescriptive Path is based on a predefined package of improvements, while the Performance Path is based on a customized package of upgrades.

- [National Program Requirements](#)  (559KB) – This document defines the core energy efficiency specifications for both the Prescriptive and Performance Paths.

Homes that are larger than the Benchmark Home Size must use the Performance Path. The Benchmark Home Size is based on the number of bedrooms in the home to be built. Homes of all sizes can be qualified; however homes that are larger than their Benchmark Home Size must use the Performance Path so that a Size Adjustment Factor can be applied. They cannot use the Prescriptive Path.

# Partner resources

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- **v2.5 recording**

- A recording of the Version 2.5 Guidelines training has been posted. This includes explanations of the December 1 updates to the Size Adjustment Factor and Benchmark Home Size methodology.
- Available in the Training Requirements and Resources section at <http://www.energystar.gov/newhomesguidelines>.

- **v3 online recordings**

- Sam Rashkin presents three recorded modules that discuss the key systems that make up Version 3.
- Available in the Training Requirements and Resources section at <http://www.energystar.gov/newhomesguidelines>.

- **Live webinars**

- A new schedule of webinars for the first quarter of 2011 has been posted at [www.energystar.gov/newhomeswebinars](http://www.energystar.gov/newhomeswebinars).

# Partner resources

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- **Checklist guidebooks**

- EPA is producing field guides for the mandatory checklists that will explain the rationale behind each item and provide examples of successful and unsuccessful details. These checklists will be available for download in March 2011 at [www.energystar.gov/newhomespartners](http://www.energystar.gov/newhomespartners).

- **v3 FAQs**

- EPA is developing a list of frequently-asked questions about v3. EPA will provide this as a supplemental training resource. It will be used to provide examples and explanations of aspects of the guidelines that some partners have found confusing.

# Partner resources

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## Marketing Collateral

- **Brochures**

- EPA is in the process of updating both the consumer and builder brochures for v3. They will be available to sponsors who are running a pilot program this year. All other sponsors will be able to order them in time for v3 implementation in 2012.
- EPA is looking to offer two versions, one with a basement and one without

- **Marketing Toolkit**

- Being updated for Version 3

- **Fact Sheets**

- Being updated for Version 3

# Partner resources

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- **Updated ENERGY STAR label**
  - New label indicates which version of the guidelines that each home is qualified under.
  - ENERGY STAR will provide an updated Label Printing Tool to Providers and begin sending new label stock as the existing stock is depleted.
  - Label is not tied to v3; v2 and v2.5 homes can also use the label.
  - Every ENERGY STAR qualified home must be labeled. This applies to homes qualified under all versions of the ENERGY STAR guidelines.
- **ENERGY STAR Version 3 certificate**
  - EPA is updating the ENERGY STAR certificate to include more customized information for homeowners. The updated certificate will only be available for homes qualified under Version 3.
  - Unlike the current ENERGY STAR certificate, which is optional for homes qualified under Version 2 and 2.5, the new certificate will be required to be distributed to all homes qualified under Version 3.

# Partner resources



- **Utility Sponsor Survey**

- The email was sent on January 25. Responses are due on February 8th.
- Great opportunity to provide input to EPA and help us to ensure that your needs for 2011 are met.

- **Utility Sponsor Meeting**

- April 27-29 in at the Marriott Inner Harbor in Baltimore, Maryland.
- Opportunity to network with EPA, other program implementers, and learn strategies for a successful transition to the new guidelines.
- Please register at [www.surveymonkey.com/s/sponsorsmeetingregistration](http://www.surveymonkey.com/s/sponsorsmeetingregistration).



# Partner resources

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- **EPA collaboration**

EPA works with sponsors to provide training materials, assist in training development, and, where possible, conduct local workshops and trainings sponsored by local partners. Sponsors can contact the ENERGY STAR for Homes Team through the program email box or through direct EPA or Account Manager contacts:

- [energystarhomes@energystar.gov](mailto:energystarhomes@energystar.gov)
- **Ga-Young Choi**  
Partner Support Coordinator, U.S. EPA  
[Choi.ga-young@epa.gov](mailto:Choi.ga-young@epa.gov)
- **Chiara D'Amore**  
Account Management Team Lead, ICF International  
[cdamore@icfi.com](mailto:cdamore@icfi.com)

# Questions/Comments

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