

ENERGY STAR 2011 Qualified New Homes Comments

This is a compilation of all comments received by EPA during the second ENERGY STAR Qualified New Homes comment period ending December 16, 2009.

The following comments have been compiled from the ENERGY STAR New Homes Proposed Guidelines Comment Forms submitted by respondents. The Environmental Protection Agency is not responsible for any typographical errors or omissions.

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ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Advanced Energy

Respondent Last Name:Coulter

Respondent First Name: Jonathan

Comments: We at Advanced Energy applaud EPA for moving forward with their ENERGY STAR for New Homes program. The new construction standards are generally based on sound building science and should lead to more durable and resource-efficient homes. We also thank ENERGY STAR for allowing the public to provide comments on the proposed standards.

Overall, we believe that due in part to low perceived value in the marketplace for ENERGY STAR New Homes, the public willingness to pay for this level of upgrades will be very low. As a result, we also believe the likelihood of those involved in the field to take shortcuts or misrepresent information for the sake of money will be high. And as such, much focus and energy will be spent on figuring out the simplest method of "passing" (wading through the mandatory requirements, modeling, and the checklists) and, once on site, completing forms, rather than physically installing components correctly.

Below are some overarching concerns followed by more specific comments. We believe the proposed 2011 specifications will create:

1. a substantial gap between the standards and technical competency
2. significant liability issues
3. loss of simple base program with options for upgrades to additional "badges"
4. increase product, testing and administrative costs without increase public demand/value
5. public skepticism due to some inconsistent language between numbered standards and footnotes

Specific comments on the Thermal Enclosure System Rater Checklist include:

- for 2.3, propose to change footnote 4 from R-6 requirement to R-5
- for 3, to improve durability, change "Climate Zones 4-8 only" to read all climate zones
- for 5.4, propose to change footnote 17 to be based on fire rated materials compliant with NFPA 90 A & B

Specific comments on the HVAC System Quality Installation Contractor Checklist include:

- change 3.14, to be required for houses built in the 2009 IECC Table 402.1.1 Warm-Humid region of the country and
- delete requirement 3.15
- focus more on correct air flow first and correct charge second or third after duct leakage. Therefore, switch 9 and 10 with 6 and 7.

Specific comments on the HVAC System Quality Installation Rater Checklist include:

- for 4.3, propose to base products on meeting NFPA 90 A & B
- for 8, range of error with measurement devices high
- for 9.1, footnote 22 should be listed with this standard, and has inconsistent language about ventless combustion appliances being allowed in the home's pressure boundary
- for 9.3, concerned that this requirement will shift location of components to unconditioned attics and unconditioned crawl spaces where air quality is less than desirable
- for 10.3, please provide clarification on what is meant by accessible

Specific comments on the Water Management System Builder Checklist include:

- for 1.2, delete the requirement to seal seams and add other approved approach to fastening and sealing to walls

- for 3.3, footnote 8 comment of lumber "should" not exceed is inconsistent with standard

Specifically, comments on the Water Management System Rater Checklist:

- for 2.3, please clarify what a vapor barrier is



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Specifically for Exhibit 2: Expanded ENERGY STAR Reference Design Definition:

- Radiant barrier in any climate is not cost effective when all the other requirements are done correctly. This component requirement also does not show up on any checklist

Exhibit 1 Savings & Cost Estimate Summary is lacking costs associated with testing and administrative fees. Please provide updated information for more complete consideration of the proposed program requirements.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Alpine Energy Solutions

Respondent Last Name: Schmuck

Respondent First Name: Allan

Comments:I live in Wisconsin and have been a part of the Wisconsin Energy Star Homes program for several years. A lot of contractors like the program here in Wisconsin even with the higher standards we have. I can understand that the EPA needs to increase the standards for the ENERGY STAR stamp. However some of the items and checklist you are suggesting are overboard. I agree with some of the changes that are proposed. I like the requirement for ENERGY STAR rated fans and appliances. I think lowering the HERS score would be a good start and more ENERGY STAR lighting. I also think the heating contractor should test the flow of the supply and return ducts. They should be held more accountable. Some of what you are proposing is way overboard. If all these changes go through, the added cost to the builders will force them to drop out of the program and go back to their old ways. Is this what we really want. The home owners will suffer from the effects.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:American Gas Association

Respondent Last Name:Williams

Respondent First Name: Ted

Comments:

Note that the respondent submitted nine separate comment forms, which have been concatenated into a single comment form with a line separating the content from each original form.

AGA views EPA's lack of positive response to AGA comments in its July 10, 2010 comment letter and prior comments on this topic as a serious deficiency in the EPA process for establishment of the 2011 ENERGY STAR HOMES 2011 Guidelines. AGA stands on its July 10, 2010 comments and points to specific issues in the EPA "Response to ENERGY STAR 2011 Qualified New Homes Comments" underscoring the need for more formal treatment of these comments:

EPA comments that it has "solicited comments from all interested parties through its website" (Comment #44). In fact, a review of the comments in the "EPA Responses" and the "ENERGY STAR 2011 Qualified New Homes Comments" demonstrates that the stakeholder responding to the EPA website solicitation represents a strong bias from existing ENERGY STAR HOMES program participants, clients, and other parties. EPA's approach cannot be inferred to have "solicited" review and comment from the broader range of potentially affected parties. These narrow approach for soliciting public review is inherently biased and might have been addressed through more a more formal process, including publication of the review and comment through the Federal Register.

EPA justifies use of its current informal process for review and comment on the draft 2001 Guidelines based on the status of ENERGY STAR HOMES as a "voluntary program." AGA believes that ENERGY STAR HOMES goes beyond the status of a voluntary program, as AGA commented further, and points to climate legislation passed by the U. S. House of Representatives and being considered by the U. S. Senate that would consider promulgation of ENERGY STAR buildings criteria as the basis for federally-promulgated national building energy codes. As of this time, the justification of ENERGY STAR HOMES as a "voluntary program" not requiring formal review and comment consistent with the Administrative Procedures Act (APA) is an outmoded concept of the program and its implications.

EPA fails to provide attribution of commenters throughout the "EPA Responses" document and for key comments of AGA (Comment #44, #45, #68, #168, and #179). This deficiency in EPA's informal approach provides practical opportunities for commenters to identify correlated issues and potentially resolve conflicting viewpoints, opportunities that would be afforded by a typical APA compliant review.

EPA provides no response within its "Policy Decision" (Comment #68) on the key technical comment of AGA on use of source energy and carbon dioxide equivalent (CO₂e) emissions as a substitute to HERS performance ratings and in meeting EPA's "primary goal ... to maximize carbon reductions" (Comment #73, "EPA's Response"), AGA is providing additional information on the use of source and full-fuel-cycle energy use and emissions in a separate comment.

For these comments on the current solicitation, EPA does not provide clear information on where to file



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comments, nor does it provide information that comments received will be acknowledged or receipt verified. This is a failing of the informal process that EPA has implemented.

AGA is exploring other means of addressing its concerns on the EPA procedure and remedies available to AGA.

If the presumption that EPA's procedure is appropriate under its contention that ENERGY STAR HOMES are only "voluntary program" guidelines, AGA believes EPA has violated its "information quality guidelines" as outlined in its document, "Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency," EPA/260R-02-008, October 2002. AGA will pursue submitting Requests for Correction or other actions should issues remain in the final 2011 Guidelines. The following are some specific examples of information quality conflicts.

EPA provides no technically supporting information or references for its actions on Comment #156, ("EPA's Response"), Comment #163, ("EPA's Response"), Comment #164, Comment #166, Comment #167 ("EPA's Response"), Comment #168, or Comment #179 ("EPA's Response"). As a result, even rudimentary evaluation of EPA's actions for "objectivity, utility, and integrity," as required for adherence to its information quality guidelines cannot be evaluated. In fact, the EPA responses to these comments are unsupported.

Public policy needs, requirements, or scope for EPA's actions are not substantiated in EPA's response to Comment #5 ("EPA's Response"), Comment #12 ("EPA's Response"), or Comment #73 ("EPA's Response").

EPA's acceptance of outside technical opinions for Policy Decisions appear without evidence of independent technical review or justification by EPA (Comment #175). EPA has provided no verification or other independent action on comments of the cited "building science experts" used to justify its actions on combustion equipment and venting systems.

EPA applies inconsistent use of ENERGY STAR appliance requirements wherein it accepts the ENERGY STAR appliance furnace efficiency requirements for furnaces in ENERGY STAR HOMES (Comment #14), but rejects similar consistent use of ENERGY STAR water heater requirements (Comment #179), and does so without providing technical support of its contention on "incremental cost" being "too great" to require consistent treatment...

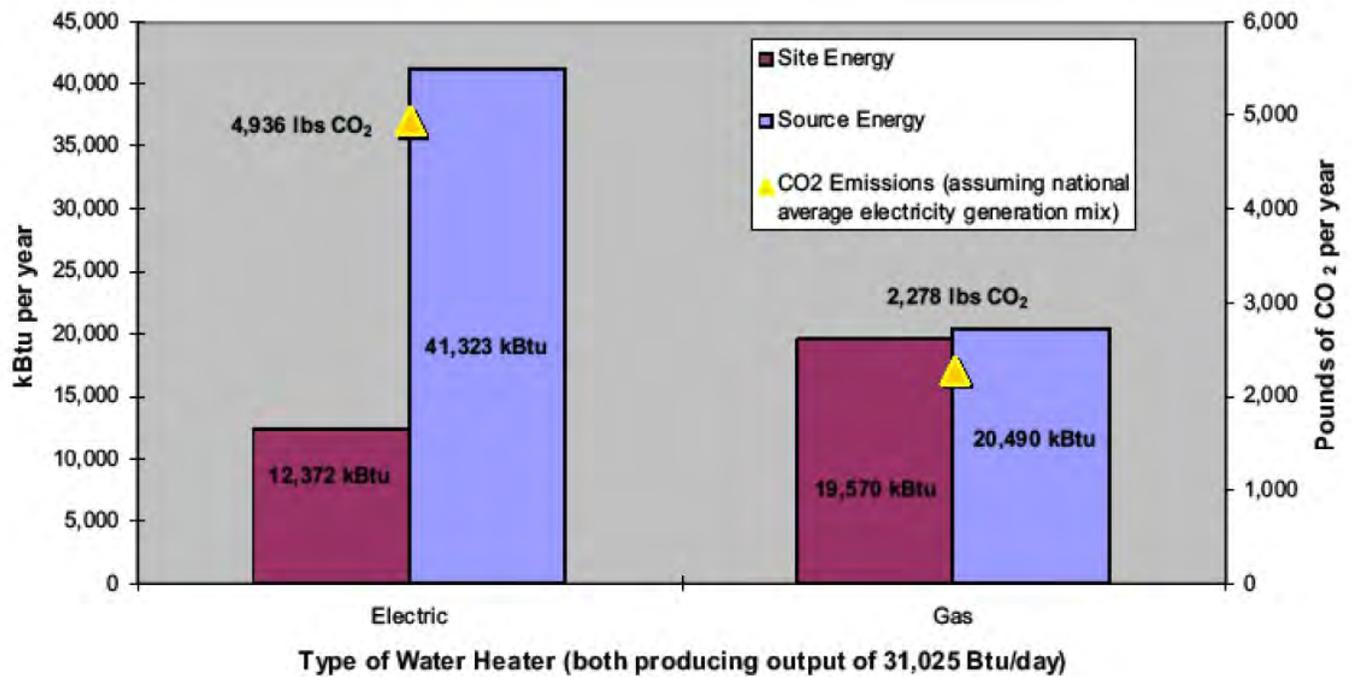
EPA's response to AGA's comment on using ENERGY STAR appliance criteria for water heating "incremental costs" as being "too high" (Comment #179, "EPA's Response") is vague, unsubstantiated, and is unresponsive to the use of substitute storage water heating technologies including natural gas storage water heaters meeting the ENERGY STAR criteria for houses on natural gas mains and similar propane gas storage water heaters for houses off natural gas mains. Clearly, these substitutes are not prohibitively costly on an "incremental cost" basis and produce substantial CO₂e reduction opportunities fitting with EPA's "primary goal ... to maximize carbon reductions" (Comment #73, "EPA's Response") as was demonstrated in AGA's comments on the previous draft (slide attached).



Example: Electric and Gas Water Heaters Site vs. Source Energy Comparison



Comparison of Site Energy, Source Energy, and CO₂ Emissions for Comparable Electric and Gas Water Heaters Operating at Minimum Federal Efficiency Levels





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AGA supports the elimination of ban of “ventless combustion” appliances and CO alarm requirements, but AGA disputes the rationale of EPA for this action

EPA has provided no evidence that existing design certification requirements are insufficient to protect occupant health or safety

EPA has provided no evidence or technical information on the interaction of unvented appliance emissions and required ventilation systems, and specifically any information on the effectiveness of these systems to address combustion products from unvented combustion appliances.

Properly installed combustion appliances have never been shown to contributed indoor CO concentrations sufficient to activate CO alarms, so tradeoffs between CO alarm requirements and combustion appliance requirements are unsubstantiated.

EPA has not provided substantiation for banning air handlers and ductwork from garages (Comment #167). Specifically, EPA is not addressing requirements of consensus standards that these systems be made “substantially air-tight” and its suggestion that these requirements are insufficient. Contaminant loads are not characterized, and transport efficiency has not been analyzed or documented. EPA is now adding rationale that these systems are “susceptible to damage and disruption,” breaking the integrity of the air-tight installation, but no incident frequencies or severities of this failure mechanism is provided.

EPA's prohibition of atmospherically vented combustion appliances in favor of “mechanically drafted or direct-vented” appliances for space heating and water heating (Comment #168 and #175):is unwarranted and unjustified. EPA provides no evidence that atmospherically vented combustion appliances, installed properly and in accordance with model gas installation codes, pose any issues with respect to occupant health or safety. EPA does not provide citation of “building science expert recommendations” that such requirements are “essential to improve both efficiency and combustion safety, and raises a number of concerns:

- 1.) Who are these experts, and what studies involving proper installation of atmospheric equipment are they providing EPA?
- 2.) What “improvements” to efficiency are proposed, especially since many types of direct vent appliances are not greater efficiency?
- 3.) What “improvements” in combustion safety has EPA documented?
- 4.) Why is this prohibition “essential” to improvement and over what baselines?
- 5.) How are installation requirements, including combustion air requirements under the National Fuel Gas Code (NFGC), Section 9.3 insufficient for safe operation of these appliances?
- 6.) How are restrictions on ventilation systems under NFGC, Section 9.3.1.5 not sufficient to mitigate depressurization concerns from exhaust systems?



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7.) How is NFGC, Section 9.3.2 covering indoor combustion air and building tightness insufficient to protect against venting system failure.

EPA's ban does not address even these basic issues covered by mandatory installation codes covering gas-fired equipment.

In addition, EPA's definition for direct vent appliances presumes "sealed combustion," but ANSI Z21.47, the design certification for direct vent furnaces has an allowable leakage rate to the indoor environment and is, therefore, not "sealed combustion" in terms of designed and field installed sealed combustion systems.

Also, EPA's terminology on appliance types and venting is confusing and inconsistent with the current categorization systems for appliances (Categories I through IV) and needs to be restated in terms of proper categorization..

AGA is very disappointed that EPA has not acknowledged AGA's comment on use of source energy, a major technical argument for performance rating of houses, submitted in AGA's July comments, nor has it provided a direct response to a generally attributed comment on source energy indicated in Comment #68 "Comment Summary," but provided with no mention or discussion in "EPA's Response" to that comment. The fact that the original comment cites a National Academy of Sciences recommendation on using source energy (terms "extended site energy" and "full-fuel-cycle energy") for appliance efficiency should have been sufficient for EPA to give this general comment due consideration. This failure of EPA is a clear omission of the EPA process of a sound technical comment.

A comment by the National Propane Gas Association advocating use of full-fuel-cycle energy efficiency analysis received a misleading response from EPA that it "is using a source-based metric" (Comment #45, "EPA's Response"). EPA is only using source energy-related calculations to tally up estimated carbon savings after the fact, not as basis for performance rating and carbon footprint consideration of alternatives. As a result of this use of source energy-related calculations lead to EPA's failure to meet its "primary goal ... to maximize carbon reductions (Comment #73, "EPA's Response"):

AGA continues to advocate EPA's use of source energy related criteria (defined in terms of EPA's "source energy," of the National Academy of Sciences study "extended site energy" or "full-fuel-cycle energy") efficiency for building performance rating and related air pollutant emissions for regulated pollutants and carbon dioxide equivalents (CO₂e). These metrics should be used instead of HERS based ratings. EPA endorsement of source energy for ratings of buildings is documented in the recent attached letter. A failure of EPA to implement source energy-related measures within ENERGY STAR HOME performance rating would set the stage for a clear inconsistency in ENERGY STAR buildings programs.

An analysis of a 2,200 square foot home in St. Louis, MO using the 2011 proposed National Program Requirements for a Reference Design Home and the disparity between HERS performance rating and source energy and emission contributions is attached. Both homes are identical, except for the specification of space heating and water heating systems, one house being electric heating and water heating and the other being natural gas. Electric and natural gas systems meet the Reference Design minimum requirements. While the



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performance path of the proposed requirements allow tradeoff of mechanical and envelope energy efficiency measures, tradeoffs are not used here. Source energy conversions and emission factors are shown on the analysis.

While the electric and natural gas homes receive roughly equivalent HERS ratings in this location for the Reference Design Home requirements (HERS rating 71 and 67, respectively, or a 6% difference), the natural gas home achieves approximately a 14% reduction in source energy consumption and a 28% reduction in CO₂ emissions using the locally applicable emission factors.. Clearly, the Design Reference Home (and subsequent available tradeoffs in the performance path) is more efficient using natural gas. In addition, it is likely that equivalent energy efficiency using natural gas can be maintained and improved more cost effectively using natural gas space heating and water heating.

This simple analysis illustrates why EPA needs to implement source energy related criteria in the ENERGY STAR HOMES program if it is to achieve EPA's "primary goal ... to maximize carbon reductions (Comment #73, "EPA's Response"):



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December 15, 2009

Darren B. Meyers, PE, CEM, GBE
Technical Director - Energy Programs
Architectural & Engineering Services
International Code Council, Inc.
4051 W. Flossmoor Rd.,
Country Club Hills, IL 60478

Dear Mr. Meyers:

As the Sustainable Building Technology Committee finalizes its recommendations for the International Green Construction Code (IgCC), EPA urges you to make source energy the basis for energy compliance, as the Committee recommended in its first version released in August of this year.

The use of source energy is the most equitable approach to assessing and comparing the energy efficiency of buildings. The use of site energy provides an incentive to use electricity; in contrast, use of source energy will not provide an incentive for any particular type of fuel, but will provide the right signals to the marketplace to encourage real improvements in energy efficiency and consequent reductions in carbon emissions.

All buildings require heat and electricity to operate. These are both secondary forms of energy, which were derived from an original fuel source. The site energy at any specific building may be delivered as either primary energy (e.g. fuel oil or natural gas) or secondary energy (e.g. heat or electricity). A unit of primary and a unit of secondary energy consumed at the site are not directly comparable because one represents a raw fuel while the other represents a converted fuel. Therefore, the only way to assess the relative efficiencies of buildings with varying proportions of primary and secondary energy consumption is to convert these two types of energy into equivalent units of raw fuel consumed to generate that one unit of energy consumed on-site. Using source energy achieves this equivalency.

For this reason, EPA uses source energy in calculating the ENERGY STAR performance rating for buildings, designed to improve building efficiency and reduce carbon emissions nationally. In order for it to be effective, it is important that the proposed IgCC be based on source energy.



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Thank you for your consideration of this important issue. I would appreciate your sending this letter to the entire Sustainable Building Technology Committee. If you have any questions, please contact Cindy Jacobs of EPA at (202) 343-9045.

Sincerely,

Cindy B Jacobs
for Jean Lupinacci
Chief, ENERGY STAR Commercial and Industrial Buildings Branch
Climate Protection Partnerships Division
Office of Air and Radiation
U.S. Environmental Protection Agency



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ENERGY STAR for Homes 2011 Proposed Performance Package: Gas vs. Electric

3.16

1.1

Source Electricity Factor :

Source Gas Factor:

St. Louis Climate Zone 4

2011 Proposed National Program Requirements for ENERGY STAR Qualified New Homes: Performance Path Reference Design Home Gas vs. Electric for EPA Model Home (Ranch, 2200 sq ft, unconditioned basement)- St. Louis (CZ 4) Energy Consumption presented in MM BTUs Source Energy			
Performance Path Reference Design	Qualified Electric Home	Qualified Gas Home	% Source Energy Savings Gas vs. Electric
Water Heating	35.28	19.25	45.43%
Space Heating	49.19	40.35	17.96%
Space Cooling	17.67	20.48	-15.88%
Plug Loads, Appliances, Lighting	58.20	58.20	0.00%
Whole Home	160.33	138.28	13.75%
HERS 2006 Rating	71	67	5.63%

CO2 factors for electricity are from eGRID 2007, using year 2005 factors in SERC Midwest region (St Louis) and a national factor for natural gas from AGA Report using ANL GREET model version 1.8c and EPA (CO2 lbs/Mwh SERC Midwest = 1830.51; FYI- national average 1329.35; NG = 118.29 lbs/mmbtu). We're taking emissions back to point of combustion.

Notes-

2011 Proposed National Program Requirements for ENERGY STAR Qualified New Homes: Performance Path Reference Design Home Gas vs. Electric for EPA Model Home (Ranch, 2200 sq ft, unconditioned basement)- St. Louis (CZ 4) CO2 Emissions presented in lbs			
Performance Path Reference Design	Qualified Electric Home	Qualified Gas Home	% CO2 Emission Savings Gas vs. Electric
Water Heating	6,409	2,070	67.70%
Space Heating	8,935	4,628	48.21%
Space Cooling	3,210	3,720	-15.88%
Plug Loads, Appliances, Lighting	10,573	10,573	0.00%
Whole Home	29,126	20,990	27.93%
HERS 2006 Rating	71	67	5.63%



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:American Public Gas Association

Respondent Last Name:Beauregard

Respondent First Name: Robert

Comments:APGA is the national association for publicly-owned natural gas distribution systems. There are approximately 1,000 public gas systems in 36 states and over 720 of these systems are APGA members. Publicly-owned gas systems are not-for-profit, retail distribution entities owned by, and accountable to, the citizens they serve. They include municipal gas distribution systems, public utility districts, county districts, and other public agencies that have natural gas distribution facilities.

I appreciate the opportunity to make these comments. They address both substantive and procedural issues. They focus on inconsistent EPA efficiency/emissions policy, unsupported banning of appliances and non-compliance with the Administrative Procedures Act.

Inconsistent Efficiency/Emissions Policy

APGA applauded the EPA Energy Star Commercial Buildings program when it realized and implemented the benefits of source energy and single reference building as its basis. This demonstrated the real environmental impacts of full cycle emissions and efficiency losses. APGA had hoped the same preferred result would be adopted in the Energy Star Homes program. To do otherwise, would create inconsistent environmental policy having no basis in fact.

APGA was surprised and dismayed when the EPA Energy Star Homes program ignored the Commercial findings and proposed guidelines that measure efficiency on a site basis.

EPA's stated reason for its approach on commercial buildings is as follows:

"EPA has determined that source energy is the most equitable unit of evaluation. Source energy represents the total amount of raw fuel that is required to operate the building. It incorporates all transmission, delivery, and production losses, thereby enabling a complete assessment of energy efficiency in a building." 1

Just yesterday, December 15, 2009, Jean Lupinacci, Chief of the EPA Energy Star Commercial and Industrial Buildings Branch, urged the International Code Council to adopt source energy for its new International Green Construction Code.² The letter stated in part, "The use of source energy is the most equitable approach to assessing and comparing the energy efficiency of buildings. The use of site energy provides an incentive to use electricity; in contrast, use of source energy will not provide an incentive for any particular type of fuel, but will provide the right signals to the marketplace to encourage real improvements in energy efficiency and consequent reductions in carbon emissions."

There is no scientific-based argument favoring a different treatment for homes if EPA's goal is to reduce greenhouse gas emissions. To argue, as some do, that source energy efficiency ratings are "too difficult to implement" is not defensible when your goal is to reduce greenhouse gas emissions.

1. "Understanding Source and Site Energy: EPA ENERGY STAR," April 9, 2008.
http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_benchmark_comm_bldgs

2. Lupinacci letter to ICC; December 15, 2009.
<http://www.apga.org/files/public/EPA%20Source%20Energy%20Letter%20Final%20for%20IgCC.pdf>



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The use of natural gas in high efficiency residential applications is key to any attempt to lower U.S. greenhouse gas emissions. In a recent study funded in part by APGA and the APGA Research Foundation, it was shown that increased direct use of natural gas in residential and commercial applications can increase the productivity of available energy supplies, reduce overall energy cost, and reduce related CO₂ emissions in all scenarios considered.³

APGA supports the U. S. Environmental Protection Agency's (EPA) ENERGY STAR HOMES program. ENERGY STAR HOMES provides an important opportunity to reduce environmental impacts of new homes through more energy efficient building designs and practices. EPA's success is likely as long as the program maintains focus on requirements and measures of efficiency that relate specifically to energy efficiency and resulting environmental impacts, particularly to emissions of atmospheric carbon.

Source v. Site energy efficiency has been debated for thirty (30) years. Now that lowering greenhouse gas emissions is the national focus, the debate is over. Above, APGA cited EPA's own words for why it chose "Source energy" and efficiency for its Energy Star Commercial Buildings program. The same logic applies to appliances and equipment. Nothing in the record of this docket contradicts this logic. In fact, carbon footprint calculations cannot be made without measurements that go beyond the EF rating, which includes only energy consumed at the site, and toward source energy measurement.

To properly evaluate the energy and environmental impacts of building energy use, conversion factors are required to account not only for site energy use but also for source (full fuel cycle) energy consumption and related emissions. The importance of site versus source efficiency is seen when comparing national energy use for natural gas and electricity in the residential and commercial sectors.

According to the Energy Information Administration (EIA), buildings consume nearly 40 percent of the primary energy resources and 74 percent of the electricity generated each year in the United States. Site use of natural gas and electricity in buildings in 2008 totaled 8.28 and 9.37 quadrillion Btu's (Quads) respectively – a sum of 17.65 Quads. However, losses associated with electricity production and delivery exceeded 20 quads of energy – an amount greater than the total site energy demand.

One can argue with exact source energy multipliers, but all are within percentage points of each other, the important element is that source energy consumption accounts for the primary fuel consumption and the associated emissions. Typical electric generation is only 33% efficient, meaning only 1 Btu of energy is delivered for every 3 Btus consumed at the generation point. The generation efficiency is by far the largest component of the electric multiplier, so getting bogged down the marginal influence of secondary emissions is a second order of importance.

If EPA's goal is to reduce the nation's primary energy consumption in buildings and its associated emissions, the only appropriate measurement is source or full fuel cycle energy. Given the importance of including GHG emissions in optimizing building design, using source energy is a logical bridge as it's closely aligned with GHG emissions. It is not possible to optimize a building's design for both site energy and GHG emission reductions the vast majority of the time. This divergence will create major divides where reducing site energy will often be at odds with reducing CO₂ emissions.

The decision whether to use source or site energy is neither semantic nor trivial, it is fundamental to the EPA's mission and must be addressed to ensure buildings are constructed to reduce primary energy consumption and CO₂ emissions.

3. "Validation of Direct Natural Gas Use to Reduce CO₂ Emissions," June 26, 2009.
<http://www.apga.org/files/GTI-09-0007%2020760%202009-06-26%20Final%20Report.pdf>



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It is important to note that there can be strong regional differences in source energy efficiency, driven by differences in the electric power generation mix. For example, the proportion of energy loss is higher in coal power-dominated regions and lower in regions that are more reliant on renewable sources such as hydropower. There is the opportunity to use national multipliers, which blend these differences together, or regional and local multipliers which account for these differences.

GTI's Source Energy Emission Factors for Building Energy Consumption Report 4 highlights these opportunities and offers dozens of sources for source energy multipliers, including NREL and the EPA. These sources and tools provide robust means for addressing issues of granularity in calculating local CO₂ contributions of new buildings for relative contributions of building design and equipment options. These findings are consistent with recommendations of the recent National Research Council, National Academy of Sciences findings on source versus site analysis of energy efficiency calling for efficiency measures based on source energy in the near term and life cycle emissions over the longer term. 5

Use of source energy metrics is further reinforced by recommendations of a second National Research Council study, "Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use. 6 This study discusses the importance of accounting of emissions traditional "criteria" air pollutants (i.e., in addition to CO₂) over the full fuel cycle, including particulate matter, sulfur dioxide, and oxides of nitrogen. From this study, one can understand that the proper role of a "green" building code is to minimize environmental harm beyond climate change since these emissions are associated with direct impacts on human health and welfare.

The National Resources Defense Council has publically stated its support for the National Academy recommendation "source" energy as currently defined by the U. S. Environmental Protection Agency for use in the EnergyStar™ program. 7

Finally, the ASHRAE Presidential Ad Hoc Committee recently recommended using source energy as the basis for all ratings moving forward. 8

4. <http://www.aga.org/NR/rdonlyres/F17F15FC-FC7D-4469-B8E2-14F26FFAC440/0/0008ENERGYEMISSIONFACTORSRESCONSUMPTION.pdf>

5. "Review of Site (Point-of-Use) and Full-Fuel-Cycle Measurement Approaches to DOE/EERE Building Appliance Energy-Efficiency Standards," Committee on Point-of-Use and Full-Fuel-Cycle Measurement Approaches to Energy Efficiency Standards, National Research Council, 2009. Standards Institute (ANSI) recognized Z21 series of standards, which include air emissions for the combustion products carbon monoxide and nitrogen dioxide.

6. "Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use," Committee on Health, Environmental, and Other External Costs and Benefits of Energy Production and Consumption; National Research Council, 2009.

7. Joint Statement of AGA and NRDC; September 9, 2009.
<http://www.aga.org/NR/rdonlyres/B0D35A27-0470-4969-BB4F-B0D6DCCFBA03/0/0909NRDC.PDF>

8. http://www.ashrae.org/doclib/20080714_abelreport_july2008.pdf (page 2, Key Recommendation # 9)



ENERGY STAR New Homes Proposed Guidelines Comment Form

EPA is also on record recognizing the importance of source efficiency and its relationship to atmospheric carbon contribution. At a February 2008, meeting of the National Academy Sciences project, Ms. Kathleen Hogan, Director, Climate Protection Partnership Division, EPA, presented a slide comparing site energy versus source energy measurement for storage water heater efficiency. 9 The slide shows, both energy consumption and carbon dioxide contributions are very high for electric resistance storage water heaters, contradicting the inference that a high EF rating for these products corresponds to overall efficiency. In view of the inherent limitations of electric resistance as a means of efficiently heating water, this technology does not belong in an ENERGY STAR Qualified Home.

APGA believes consumers should receive the best information possible regarding energy consumption and carbon emissions so that they can make wise energy decisions. EPA's to-date conclusion in favor of site-based efficiency for the Energy Star Homes program is inimical to wise energy decisions.

Unsupported Banning of Appliances

The prohibition of "ventless combustion appliances" under the "Indoor Air Quality Checklist" has not been justified by EPA and represents a serious interference in the installation of appropriately design certified gas appliances. Gas-fired "unvented" and "vent-free" appliances are design certified under the American National Standards Institute (ANSI) recognized Z21 series of standards, which include air emissions for the combustion products carbon monoxide and nitrogen dioxide.

EPA provides no discussion of the adequacies or inadequacies of these design standards in its banning of these products, which have source efficiencies approaching 90%, under the Guidelines. EPA provides no rationale in the form of data or other evidence that these appliances, as currently or installed, represent issues of unacceptable indoor air quality.

APGA avers this issue must be resolved before the Energy Star Home program Guidelines are issued by EPA.

Procedural Issue

APGA asserts that EPA's approach for review and comment on draft guidelines is contrary to law. The new Guidelines proposed by EPA should be promulgated as a rule in accordance with the notice and comment procedures of the Administrative Procedures Act ("APA").

The proposed program guidelines are by their very nature "legislative rules" that are required to be promulgated through the notice and comment procedures of APA § 553. Legislative rules have the force and effect of law.¹⁰

The proposed 2011 program requirements would establish binding requirements on home builders that would seek to obtain the ENERGY STAR HOMES designation. The agency's language is telling. "To qualify as ENERGY STAR, a home shall meet the minimum requirements specified below, be verified and field-tested . . . ,and meet all applicable codes." (emphasis added). The language of the proposal speaks in mandatory terms.¹¹

9. "ENERGY STAR and Measuring Energy Efficiency," Kathleen Hogan, Director, Climate Protection Partnerships Division, U. S. EPA, National Academy of Sciences, February 2008; www.apga.org/ESHogan

10. See *Appalachian Power Co. v. EPA*, 208 F.3d 1015, 1020 (D.C. Cir. 2000).



ENERGY STAR New Homes Proposed Guidelines Comment Form

11. See *State of South Dakota v. Ubbelohde*, 330 F.3d 1014, 1028 (8th Cir. 2003) (holding that a manual was a regulation that was required to be promulgated under the notice and comment procedures of the APA because, among other things, the “Manual speaks in mandatory terms.”).

APGA urges EPA to provide notice of the proposed 2011 ENERGY STAR Qualified Homes program requirements in the Federal Register and an opportunity for public comments on such requirements prior to making a final decision.

EPA's own Comment Summary, Response and Policy Decision document in this docket confirms, in item number 48, the mandatory nature of some of the so-called proposed guidelines.¹²

Finally, both the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007 contain provisions mandating that federal agencies increase efficiency through procurement of Energy Star rated products and leased office space.¹³ These significant rights and obligations imposed on federal agencies and others remove any doubt that the Energy Star program is voluntary or that its requirements are merely guidelines or interpretive.

12. See Item 48 in EPA Responses to ENERGY STAR 2011 Qualified New Homes Comments

13. See Energy Policy Act of 2005 § 104, Pub. L. No. 109-58, 119 Stat. 609 (Aug. 8, 2005) codified at 42 U.S.C. § 8259b (requiring federal agencies to procure Energy Star products); and Energy Independence and Security Act of 2007 § 435, Pub. L. No. 110-140 (Dec. 19, 2007) (requiring federal agencies to lease space in Energy Star labeled buildings).



ENERGY STAR New Homes Proposed Guidelines Comment Form



December 15, 2009

Darren B. Meyers, PE, CEM, GBE
Technical Director - Energy Programs
Architectural & Engineering Services
International Code Council, Inc.
4051 W. Flossmoor Rd.,
Country Club Hills, IL 60478

Dear Mr. Meyers:

As the Sustainable Building Technology Committee finalizes its recommendations for the International Green Construction Code (IgCC), EPA urges you to make source energy the basis for energy compliance, as the Committee recommended in its first version released in August of this year.

The use of source energy is the most equitable approach to assessing and comparing the energy efficiency of buildings. The use of site energy provides an incentive to use electricity; in contrast, use of source energy will not provide an incentive for any particular type of fuel, but will provide the right signals to the marketplace to encourage real improvements in energy efficiency and consequent reductions in carbon emissions.

All buildings require heat and electricity to operate. These are both secondary forms of energy, which were derived from an original fuel source. The site energy at any specific building may be delivered as either primary energy (e.g. fuel oil or natural gas) or secondary energy (e.g. heat or electricity). A unit of primary and a unit of secondary energy consumed at the site are not directly comparable because one represents a raw fuel while the other represents a converted fuel. Therefore, the only way to assess the relative efficiencies of buildings with varying proportions of primary and secondary energy consumption is to convert these two types of energy into equivalent units of raw fuel consumed to generate that one unit of energy consumed on-site. Using source energy achieves this equivalency.

For this reason, EPA uses source energy in calculating the ENERGY STAR performance rating for buildings, designed to improve building efficiency and reduce carbon emissions nationally. In order for it to be effective, it is important that the proposed IgCC be based on source energy.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Thank you for your consideration of this important issue. I would appreciate your sending this letter to the entire Sustainable Building Technology Committee. If you have any questions, please contact Cindy Jacobs of EPA at (202) 343-9045.

Sincerely,

A handwritten signature in black ink that reads 'Cindy B. Jacobs'.

for

Jean Lupinacci
Chief, ENERGY STAR Commercial and Industrial Buildings Branch
Climate Protection Partnerships Division
Office of Air and Radiation
U.S. Environmental Protection Agency



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Architectural Energy Corporation

Respondent Last Name:Salcido

Respondent First Name: Robert

Comments:

General comments:

On the implementation guidelines, will the new EPA labels be made available to the software providers early enough to make sure that any format or context changes can be implemented prior to January 1, 2011?

“EPA has clarified that Raters shall not alter the configuration of the ENERGY STAR Reference Design unless directed to do so by EPA” Will this mean that Raters will modify the home within the software or outside the software? If the former case, will the software need to allow the Rater access to the reference home design? Details of how this works will be required.

Raters will be allowed to manually configure the ENERGY STAR Reference Design until the software providers can release the product that will automatically generate the reference design. How long will software providers have to release the software with new state code reference designs? This could pose a problem if many states adopt new codes. To allow the Raters to manually modify the reference design is a very bad idea all around. This could be a disaster waiting to happen.

In multi-family units, duct leakage to outside cannot be measured in any practical sense. The typical testing protocol will only tell how much duct leakage there is outside the individual unit – but that air may go elsewhere in the multifamily building, or to the outdoors. It may make more sense to apply only the total duct leakage measurement to multifamily units.

Will ENERGY STAR require customized Reference Designs for locales smaller than the state level? There are numerous “home rule” states where local jurisdictions have very aggressive building codes.

The Thermal Enclosure System checklist needs room for two Rater Inspection dates, given that both a predrywall and a final visit are part of the form.

It appears that the Rater will need to do more than verify that the HVAC Contractor checklist is filled out; there are “yes-no” answers in that checklist where “no” means that the home fails to meet ENERGY STAR. The rater needs to evaluate the checklist answers to confirm compliance with ENERGY STAR.

Regarding the National Program Requirements:

For the performance path, the insulation of the envelope must meet or exceed the requirements of the 2009 IECC. Does each component need to meet the requirements or does the total envelope need to meet the overall UA value? It needs to be on a whole envelope so there can be trade-offs allowed.

Under Heating Systems, does the Ground Source HP COP incorporate the ground loop impact on overall efficiency, or is this strictly the equipment efficiency?



ENERGY STAR New Homes Proposed Guidelines Comment Form

In Exhibit 1 for the window area, it mentions footnote 14 for the U-value and SHGC adjustment. This needs to be footnote 15. The footnote mentions that this is for the prescriptive path only, is this true or does it apply to all?

Regarding the HERS Index Target Procedure:

The following comments are from Exhibit 2, the Expanded ENERGY STAR Reference Design Definition.

Can the Exhibit 2 table on page 2 be made larger, it is hard to read?

Under Foundations, it is unclear whether slab R-value refers to slab-edge insulation or under-slab insulation. Referring to the IECC 2009 table from whence this came, the insulation is only required for heated slabs (presumably in-slab radiant heat). This would benefit from clarification.

Also under Foundations, there are two basement entries: "Basement Wall U-Factor", and "Masonry Basement Wall R-Value". Is the first intended for framed-out basements, or basements with poured concrete walls, while the latter is restricted to block walls? Clarification is needed. Keep in mind the typical Rater does not have a copy of the 2009 IECC lying around, nor the time & inclination to pore through it!

Under Doors, you may wish to state these whole-door values for U and SHGC, or some raters with doubts will assume the opaque part of the door is U-0.21 and the glazed portions have the other U-values and SHGC.

With regard to the Reference Home attic: Have you considered the following? When the Rated home has the increasingly common sealed attic that is inside the thermal envelope, then the Reference Home will have a smaller envelope area than the Rated home. The Reference will not include the gable ends or the extra area from the sloped roof.

Under both Heating and Cooling Systems, the loads "may be calculated" by a variety of good procedures, but the easy way out will always be the "same as Rated Home" option listed. That last option means that an oversized A/C system will be incorporated into the Reference Home when the HVAC contractor uses an all-too-common badly-executed sizing for the Rated home.

FYI – REM/Rate already incorporates 10 lbs/sqft CFA of internal mass, and it has a screen for adding additional internal mass for walls, floors, etc. As currently written, the entry under "Internal Mass" will likely lead to Raters entering an additional 8 lbs/sqft CFA.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Area Heating and Cooling, Inc.

Respondent Last Name:Deloria

Respondent First Name: Michael

Comments:I'm not a big fan of the ducting location being confined to a crawlspace on a single level. We as a company have been making a change to put the ducting in the attic and locating the supply vents on the interior walls and have had a success with next to no companies or call backs. Each house has it's own challenges and should be designed as an individual, based on wants and needs of the builder or homeowner, not a program spec.

Bringing the systems inside has been a push we made in 2009, and even for those builders and owners who want it, have posed many hurdles. Enforcing all the equipment inside at this point (mainly from the financial burden will be discouraging for many builders at this point. I do agree that equipment and ducting inside of the conditioned space is the best location, but is still a little prohibitive yet.

The checklists do add some additional time and responsibility to both the Builder and Verifier which if done correctly (not making it too time consuming) is good for the homeowner. It will add additional credibility to both the builder and verifying company.

Sealing the sheetrock during the hanging process is a good idea. I work with 1 builder that has already made that change and they have seen a reduction of around 1-1.3 air changes.

All in all most of the proposed changes are heading in the right direction. It is all a matter of training, education, and keeping costs reasonable in todays market.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: AspenAir Inside

Respondent Last Name: Gunion

Respondent First Name: Michael

Comments: My comment is about the current exclusion of a critical element of home energy efficiency, found in approx 80 million homes with forced air systems. I am suggesting that use of particular in-duct air filtration technologies have been proven to save residential customers 30% or more off of their HVAC energy bill. Usually a higher efficiency filter restricts airflow, and must be changed frequently or risk even higher energy costs or equipment damage. This has traditionally been known as “the energy penalty” for using high-E filtration. That is no longer a true statement. Filtration products are now on the market which not only clean the air to a high degree but also result in lower energy bills, less frequent changes, even when compared to traditional 1” throwaway filters, usually the shoddiest performers in the filtration category.

Doing the math:

Approx 45% of a home energy bill are HVAC energy costs. Air filtration products can save 30% or more of that 45% or 13.5% of the total energy spend. Consider that 13.5% across 80 million homes and that number of potential savings is staggering. High Efficiency filtration also protects the coil from becoming as dirty so improves heat transfer and therefore makes the overall system more efficient.

Conclusion: The category of HVAC integrated filtration should be created for Energy Star consideration before this current Home Energy Star 2011 planning is completed. Currently there is a category for portable air cleaners but not HVAC integrated systems. That is incongruent with solving the problem. It is comparable to having a category for Christmas lights but not having one for traditional lights.

Pls feel free to contact me to discuss.
Mike Gunion 925 271 5520 ext 801



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Bob Ward Companies

Respondent Last Name:Gregory

Respondent First Name: Joe

Comments:The requirement to not have a vapor barrier installed on below grade walls will eliminate the use of 2" foam insulation since the foam board is in itself a vapor barrier. This goes against what the building science has been preaching. What about unvented crawl spaces? These essentially become a basement area.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Bullis, Allan

Respondent Last Name:Bullis

Respondent First Name: Allan

Comments:I have been an energy auditor and insulation contractor for 19 years, and can not understand the need for a sheet good material on the back side of stud wall sections open to unconditioned space when using dense pack cellulose. I agree 100% when using fiberglass. With cellulose however, it is typically installed between finish drywall and a filter fabric installed on the un-conditioned side of the stud wall.

Please include an exception for dense pack cellulose. This will save money, and on my projects I let the material pillow out so the studs are mostly covered with cellulose, and allows for greater depth of insulation.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:C&M Properties and Construction Inc

Respondent Last Name:Filipczak

Respondent First Name: Cody

Comments:Hi, I started certifying all of the houses I build about 1 year ago. We have certified 14 so far this year, and had planned to double that amount in the next year. From what I understand about the proposed changes, this will no longer be feasible. We build some higher end customs, but most of them are starter houses. There is just no way we can justify the added cost and time that will be required. We are already constantly trying to improve our efficiency on every property, but a lot of the proposed changes just don't work out financially.

They said at a recent conference in Eau Claire, Wisconsin that 20% of new homes built are Energy Star Certified. My question is, why don't you go after the other 80% of the houses built instead of punishing the builders that are in the 20%.

I believe these changes will drop the 20% considerably. I already pay for all of the certification costs myself, because when given the option, I have never had a customer think the certification was worth the cost.

We recently had one of our houses rank in the top 5% for efficiency of all houses built in state of Wisconsin. So we build very energy efficient houses, and will continue to do so. I just hope that you guys will scale back the changes, so we can continue to certify them.

Thank you

Cody Filipczak

C&M Homes



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Cagle Construction LLC

Respondent Last Name:Cagle

Respondent First Name: Larry

Comments:Indoor airPLUS Verification Checklist- Section 5.6, Exhaust fan installed in garage vented to outdoors:

My concern about this requirement is that through my informal research, I could not find a delay timer on the market that turns the exhaust on for a period of one hour after the garage door goes down in the closed position. This means that I will have improvise a system (limit switches, timers, etc.) to accomplish this function. Moreover, this implies that these "home made control systems" will be prone to failure after installation.

Although some manufacturer will eventually make an "off-the-shelf" control system for the exhaust fan, I think requirement places a hardship on the builder and home owner until these controls are available on the market.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Caribou Construction, Inc.

Respondent Last Name:Cooke

Respondent First Name: Carole

Comments:Our Inspector has told our electrical subs to use foam insulation around & inside all the electric outlet boxes. Is this a good idea to seal every bit of outside air out? There are those of the opinion that the house needs to breathe.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Consortium for Energy Efficiency

Respondent Last Name: Hoffman

Respondent First Name: Marc

Comments:

December 16, 2009

Sam Rashkin
National Director
ENERGY STAR for Homes Program
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Mail Code 6202J
Washington, DC 20460

Dear Sam:

On behalf of the Consortium for Energy Efficiency, I am submitting the following comments regarding Draft 2 of the proposed revisions to the ENERGY STAR for Homes Program. These comments are informed by discussions in the CEE Whole House Committee (Committee). Thank you for the opportunity to provide comment.

CEE is a nonprofit organization that works with its energy efficiency program administrator members in the United States and Canada to promote energy efficient products, technologies, and services. These CEE comments are intended to address the items in the proposed specification of national import that affect all voluntary program administrators. The organizations listed at the end of this letter have chosen to indicate their strong individual support for these comments, though individual CEE members may elect to submit separate comments on matters specific to their own market circumstances (e.g., costs, codes), climates, and new homes program goals and activity.

Balancing Energy Savings and Implementation Costs

CEE is pleased to see that the second draft includes several changes that address issues raised in our July 10 comments, including removing the hot water distribution system requirements, aligning with the ANSI/ACCA 5 2007 Quality Installation Specification, and phasing in the HVAC checklist requirements (which has been extended to all checklists except for two specific items). Despite these changes, Committee members have noted that the energy savings associated with the proposed revisions may not achieve the balance between energy savings and implementation costs that many program sponsors require to justify their programs.

The ENERGY STAR Qualified Homes 2011 Savings & Cost Estimate Summary analysis prepared in support of the Draft 2 revised program requirements shows a positive cash flow to consumers who purchase an ENERGY STAR labeled home. However, program sponsors use very different calculations than are presented in the EPA analysis, which compares monthly utility savings to the monthly mortgage cost increase from upgrading to the new ENERGY STAR measures. Program sponsors typically must show a return on their investment over a shorter time period than 30 years (EPA's assumption for calculating monthly mortgage cost) must also include program administration costs in their calculations. In addition, energy prices, construction



ENERGY STAR New Homes Proposed Guidelines Comment Form

costs, and building codes can vary substantially from locality to locality. Program sponsors will be particularly challenged to demonstrate the proper balance between savings and costs in locations with lower monthly utility savings or higher costs for the upgrades to meet the new ENERGY STAR requirements.

In addition to general issue of balancing energy savings and costs, CEE asks EPA to consider the following items:

Though the verifications for the checklist requirements are intended to be accomplished in two visits, Committee members question whether this will be possible in all circumstances. The greater the number of visits needed, the higher costs will be to builders and to program sponsors.

The water managed construction checklists present particular challenges to program sponsors due to the difficulties in demonstrating the energy savings associated with them. To reduce the impact on builders of the costs for rater verification of these measures and program sponsors for associated training, CEE asked in its July 10 comments and requests again that all requirements be verified by the builder rather than the rater.

The removal of low-flow showerheads as a mandatory requirement eliminates a low cost method of achieving energy savings under the new homes specification, as CEE members report these to be a cost effective energy savings measure.

As the new program requirements are finalized, CEE requests further careful consideration of how the goals for the program can be met while maximizing energy savings and minimizing the costs of implementation.

Quality Assurance

In its July 10 comments, CEE noted that measuring, verifying, and evaluating energy savings are of great interest to energy efficiency program sponsors, which are accountable for their use of ratepayer funds. We requested additional information regarding how quality assurance (QA) would be addressed in the new program requirements. CEE is therefore pleased to see that EPA plans to coordinate with standard setting organizations (e.g., RESNET) to: 1) integrate the new mandatory checklists into standards governing ratings conducted under the ENERGY STAR for Homes Program and 2) revise the QA guidelines and requirements for Home Energy Raters.

EPA has also indicated that it will be developing new QA requirements for sponsoring energy efficiency programs. These requirements—particularly when coupled with the other new program requirements—could be very significant in program sponsors' determination of whether it will be feasible for them to administer an ENERGY STAR for Homes program under Version 3, as they may affect cost effectiveness and/or go beyond the QA procedures currently accepted in a sponsor's individual market. CEE therefore requests information on the rationale, timing, scope/applicability, planned development and vetting process, and implementation of these requirements as soon as possible. The timing of this information is critical because uncertainty regarding the requirements may have the undesired effect of delaying program sponsors' outreach and training on the Version 3 specification, due to the fact that they may not be able to commit program resources until their full obligations are defined.

Training

CEE views training builders and raters on the new ENERGY STAR specification requirements as critical to program success. We therefore applaud EPA's decision to prepare detailed guidebooks, training curricula, and other materials for the required inspections (much like those prepared in support of the Thermal Bypass Inspection Checklist when it was added to the program requirements). These will be of great value to program sponsors for the trainings they administer. To further assist CEE members in planning their training efforts, CEE requests additional details on the materials' content and projected timeline for development, as well as details on any financial support that may be available for program sponsors that administer trainings locally.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Additional information would be particularly helpful regarding the in-depth trainings that will be available for nationwide implementation, which were announced in EPA's response to comments on Draft 1.

Other Comments

In its discussion, the Committee noted these other matters for your consideration:

Flexibility: Given that there are so many new technical requirements in the specification, CEE feels it would be helpful to stakeholders if the process and criteria for seeking consideration of flexibility or alternate means of compliance with the specific requirements (e.g., thermal bridging) in the checklists were clearly stated in the final specification. We would also like to understand how any decisions to allow flexibility or alternate compliance would be communicated to program stakeholders and whether there would be an opportunity for stakeholder comment on issues of major import.

Heat pumps: Members would like to understand the rationale for the heat pump efficiency requirements and whether EPA has assessed the market availability of these higher efficiency products to meet the demand generated by the new requirement so that this won't be a barrier to meeting it.

ENERGY STAR lighting and appliances: CEE understands the rationale for removing the mandatory inclusion of ENERGY STAR lighting and appliances in all homes. While this proposal removes an opportunity to further promote the ENERGY STAR brand, CEE does not have strong objections to the proposal given that the measures continue to be included in the prescriptive path and reference design.

HERS Index: CEE thanks ENERGY STAR for its efforts to explain the relationship of the proposed ENERGY STAR for Homes Program to the HERS Index. Based on the information provided to date, the Committee has concluded that the proposed approach of departing from a fixed HERS Index may present challenges in marketing qualified homes to consumers and in comparing results of the two compliance paths for a particular home. We would like further elaboration on how these challenges may be overcome in program implementation.

Consistency with other green labels: Increasingly, the stakeholders who participate in the ENERGY STAR for Homes Program are being presented with multiple choices for participating in labeling programs that recognize energy efficiency and other green building attributes (e.g., LEED). In some cases, there are inconsistencies in the various program requirements and definitions. For example, the calculations of conditioned floor area are different in the ENERGY STAR and LEED programs. To reduce confusion in the market and streamline program administration, program sponsors have an interest in increasing harmonization between these programs and ENERGY STAR as long as it can be accomplished without sacrificing the objectives of the ENERGY STAR for Homes program. CEE encourages EPA to work together with the administrators of other green labeling programs to assess opportunities for increased harmonization and that the administrators then share their recommendations with the stakeholders of these programs so that they can provide their feedback.

CEE appreciates the time you have spent with the Committee to explain the proposed requirements and answer questions. We look forward to continuing to work with you and your team to finalize and implement the new program requirements and to achieve the ENERGY STAR for Homes program goals. If you have any questions about these comments, please contact Margie Lynch, Program Manager, at 617-337-9277 or MLynch@cee1.org.

Sincerely,

Marc Hoffman
Executive Director

Supporting Organizations
Avista Utilities
Cape Light Compact



ENERGY STAR New Homes Proposed Guidelines Comment Form

Commonwealth Edison
Efficiency Vermont
Energy Trust of Oregon
Northwest Energy Efficiency Alliance
NV Energy
Progress Energy Florida
Questar Gas
Southern California Edison
Wisconsin Focus on Energy
Xcel Energy



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Cox Builders

Respondent Last Name:Cox

Respondent First Name: Chris

Comments:Thank you for the opportunity to comment on your new Energy Star standards. I believe we have been exceeding the standards since 1995 when I was first introduced to EEBA. I don't pretend to be an expert just a concerned builder in a northern small town.

About the proposed window requirement I have always thought it a small flaw that no account seems to made of window shading or solar heat gain potential. If it is referenced somewhere I could certainly miss it as I, like most small builders, don't feel able to spend too much time in reading documentation. In designing I do often design in concert with an eye toward significantly exceeding ResCheck Energy Star qualifications and would like to see some methodology included there. I am encouraged that you are including more discussion about heat pumps and back up systems since this is common here. I would also like to see some credit given to continuous insulation deeper than 4' and under basement slabs since our ground temps are about 50 F. Even unheated basements have an effect on heating requirements.

Also it seems to me ludicrous to have a heat duct in an attic only insulated to R-8. Properly built that attic could be 10 below on a cold day or 130 in the summer and setting R-8 as a standard only encourages HVAC contractors to minimize their efforts.

Also I note a requirement for very quiet exhaust fans. Though we often install them we must always warn home owners that they may not be able to hear the fans and could let them run far too long. Perhaps an indicator light if the fan noise is below a certain threshold?

Thank you again for the opportunity to comment.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:CSG

Respondent Last Name:Harley

Respondent First Name: Bruce

Comments:

On behalf of CSG, I would like to thank EPA for the opportunity to provide feedback on the proposed 2011 ENERGY STAR homes guidelines. First, we feel that EPA has improved this draft significantly since the original proposal, in terms of content/stringency and in terms of clarity. We also appreciate the revised implementation timeline with the "trial year" for the new inspection checklist requirements.

We do have some remaining concern about the quality assurance process for the HVAC and builder checklists, and we appreciate EPA's stated intent to implement more robust QA processes into the program overall. We are wondering how these two checklists should be applied to a sampling context: specifically, do the non-rater checklists need to be completed for every home or only the inspected homes?

Many of the following comments, which are organized by document, are editorial in nature, but some are substantive. CSG would be happy to clarify or answer questions regarding any of the comments on request.

Program-wide: The calculation of floor area, which appears in the Program Requirements as the calculation for the home size adjustment factor, in the in the checklists (e.g. for duct leakage ratios, ventilation rates, etc), and in the performance method Target Procedure. Item #78 in the "EPA Responses to Comments" document states that "Conditioned basements and crawl spaces should count towards the total square footage because they impose additional space conditioning requirements". While it is true that they impose conditioning requirements, we feel that some conditioned buffer zones, especially crawlspaces and conditioned "cathedralized" attics should be explicitly excluded. EPA has not commented on "conditioned" attics, but we assume that the intent is not to include such floor area in the CFA. Conditioned attics and crawlspaces do tend to increase envelope loads, but they can also reduce overall energy use by decreasing losses/gains of ducts and equipment located therein, as an alternate strategy to direct duct sealing and air sealing of complex boundary surfaces. In some cases the inclusion of more "floor area", usually by insulating a roof, actually reduces the direct envelope loads 4as well, because of the geometry (such as behind knee walls, or in the case of sprayed foam on the roof compared with batt insulation on an attic flat). EPA should also be aware that the strict definition of floor area used for "CFA" in the RESNET standard (and in the referenced ANSI Z765 standard) is "finished" floor area, which would also actually exclude insulated "conditioned" but unfinished basements. Although we support the inclusion of finished basement spaces in EPA's floor area calculations, we want to encourage builders in cold climates to insulate and seal the basement walls; forcing them to add 30-50% to the home's floor area for completely unfinished space sends the wrong message. We hope that EPA will reconsider the floor area definition for both crawl spaces and unfinished basements.

2011 National Program Requirements:

1. Page 1, summary of "ENERGY STAR Performance Path ", introductory sentence: after the words "...equivalent in performance to the" insert "minimum requirements of". Also change name of reference to the



ENERGY STAR New Homes Proposed Guidelines Comment Form

"ENERGY STAR Reference Design" (see comment 4. below). Next sentence, change "these" to "the" ("...follow the steps below...").

2. Performance path, summary item 1: in the first sentence, change "...the maximum HERS index value that each rated home may achieve..." to "the *highest* HERS index value that *the* rated home may achieve...". In the third paragraph, change "...each Rater.." to "...the Rater..."; change "...Design and calculates..." to "...Design, calculates..."

3. Performance path, summary item 2: change "Using any RESNET-accredited..." to "Using the same RESNET-accredited...". Allowing raters to determine the HERS index target with one piece of software and then choose among other accredited software to actually rate the house invites gaming.

4. Exhibit 1, "ENERGY STAR Reference Design": Consider changing the title of this section to "ENERGY STAR Prescriptive Path (and Reference Design Summary)". This section is written throughout using language such as ">=" or "shall meet or exceed", so it reads as if it defines the prescriptive path (which it does). Although the clarity on applicability of the footnotes has been significantly improved, we feel there should be an additional note along these lines: "While minimum or maximum specifications are expressed as such for the prescriptive path, those are the values used to define the reference design for the performance path. Please refer to the detailed performance path modeling requirements for the reference home definition."

5. Exhibit 1, cold climate, heating equipment: "air source heat pump...with efficiency as follows" needs a reference to footnote 9. Also, we suggest requiring outdoor cutout thermostat to be applied to the resistance heat backup on heat pumps in CZ 4+.

6. Exhibit 1, footnote 1: we have some concern about including "manufacturers' installation instructions" and "engineering documents" in the list of conflicting requirements allowed for exception in section b. Although we certainly appreciate EPA's intent, it seems like there is potential for abuse: an engineer could specify a feature or process, or a material or component could be selected, specifically to avoid or get around one or more of EPA's requirements. Does the statement that "the conflicting requirement within these guidelines shall not be met" mean that it need not be met to qualify for ENERGY STAR? It appears to, since otherwise it need not be stated. At the same time, the following statement that "...qualification shall still be allowed if the rater has determined that no equivalent option is available ..." implies that the rater still has discretion to disallow the ENERGY STAR label if it appears that the choice is optional, whether the intent was to get around the requirement or simply inadvertent. We suggest that EPA reconsider the phrasing in this section, as well as the corresponding section in the inspection checklist document.

7. Exhibit 1, footnote 2: Instead of defining egress windows explicitly, EPA could consider making a reference to IRC 2009, Sec R310 (similar to that used in footnote 5 for the climate zone map) stating that these requirements are summarized here for convenience. Also consider stating that if the national code changes that the new requirements shall supersede this summary.

8. Exhibit 1, footnote 8: Heating equipment has been known to corrode rapidly if exposed to certain indoor air contaminants. An increasing number of manufacturers void warranty coverage for heating equipment operated in a contaminated atmosphere. Typical language in warranty statements contain the following "Combustion air must be clean and uncontaminated with chlorine or fluorine (halogenated hydrocarbons). These compounds are present in many products around the home such as water softener salts, laundry bleaches, detergents, adhesives, paints, varnishes, paint strippers, waxes, and plastics." CSG does not have a strong position on this matter, but if EPA is concerned about the issue it might consider changing the requirement to allow only direct-vented (closed or sealed-combustion) appliances.



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9. Exhibit 1, footnote 17: there is no equivalent calculation for oil-fired water heaters. It seems reasonable to exclude them from the table, because they are not common nationally. However, one result of omitting a definition for oil water heaters from the footnote would likely be to force oil-heated homes to use electric water heaters, with a likely net carbon emissions penalty.

Inspection Checklists:

1. 2nd paragraph, beginning "To be eligible...": same comment as program requirements, #6.
2. Thermal Enclosure Rater Checklist, footnote 9: "Insulated siding...provides the required R-value..." should be clarified by adding "...at its minimum thickness" after "R-value". Most insulated siding products have varying thickness profiles, and "average" thickness does not provide "average" R-value (U-factors, not R-values, must be averaged over area to provide net R-value). As an alternate, a legitimate, lab-tested whole-assembly R-value may be used, but in our experience such ratings are difficult to find amidst the product promotions.
3. Thermal Enclosure Rater Checklist, footnote 11: We believe that the offset requirement should be optional provided that the space between adjacent stud faces is filled with insulation R-value of at least the levels specified in footnote 9. Distance will vary depending on insulation material; because of the added cavity thickness will result in whole-wall R-values much higher than minimally compliant systems. Cross-strapping walls (horizontal 2x3s for example) that allows the same minimum R-value covering the studs should also be allowed.

EPA could clarify this by re-defining the double stud wall differently, for example by replacing the first sentence of footnote 11 entirely with the following: "'Double wall framing' is defined as any framing method that ensures a continuous layer of insulation covering the studs to at least the R-value required in footnote 9, such as offset double stud walls, aligned double studs with the required R-value between adjacent stud faces, or cross-framing that provides the required R-value." Note that the area of wood-to-wood contact area for cross-strapped framing is so small that the net result is essentially identical to continuous foam of the same R-value.
4. Thermal Enclosure Rater Checklist, footnote 12: At end of sentence, add "... and allows access to insulate the cavity." (Note that "standard" blind corners also use 3 studs, so this might easily be misinterpreted by trades people).
5. Thermal Enclosure Rater Checklist, footnote 13: EPA should consider changing the minimum R-3.5 for insulated headers to R-3. This would allow a wider range of isocyanurate products at 1/2" thickness, as some of these products have aged R-value per inch slightly below 7.
6. HVAC contractor checklist: change the order of 2.8 and 2.9 (SHR relates to heat gain, not heat loss).
7. HVAC contractor checklist, 6.3 and 6.5: "psi" should be "psig".
8. HVAC contractor checklist, Footnote 3: please note that in a formal RESNET interpretation (http://resnet.us/standards/mortgage/interpretations/ventilation_system.pdf) section 3.a., RESNET states that an uncontrolled HVAC air handler with passive outdoor air duct is not considered a "controlled mechanical ventilation system" even though it is recognized by ASHRAE 62.2. (which are effectively just duct leaks to the outside) to be recognized as a controlled mechanical ventilation system. Homes with these systems cannot get credit in the rating for increased air tightness, nor can the outdoor air duct be sealed during duct leakage testing. We recommend EPA include the requirement for both a mechanical damper and control (e.g. Fancycler), to consider such a scheme as a mechanical ventilation system. Without a damper and control, air



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handler return outdoor air ducts act just like a duct leak in terms of energy penalty. To consider them as ventilation, they also have the same design drawback that any envelope or duct leak has: overventilation when loads are large, and underventilation when loads are small. In addition, using the "fan on" switch to run the air handler continuously for ventilation exacts an unnecessarily large electrical penalty for the amount of ventilation air.

9. HVAC contractor checklist, Footnotes 7-9: footnote references in checklists are not aligned.
10. HVAC contractor checklist, Footnote 7: Note that this should apply to "field-installed" TXV's.
11. HVAC contractor checklist, Footnote 8: "...through and active fan." should be; "...through the air handler fan."
12. HVAC contractor checklist, Footnote 9: Please consider including the following notes: "(a) condensate line should be drained to the exterior of the foundation, (b) drainage cannot be to the plumbing waste system, (c) when drained to a shared drainage system such as a storm water management system, the condensate drain shall be equipped with backflow prevention valve. "
13. HVAC rater checklist, item 2.6. "... in insulated walls" should read: "... in insulated exterior or common walls" (interior partitions are sometimes insulated for sound purposes). We suggest making an exception when at least R-12 rigid insulation separates duct from exterior sheathing or outdoors. As an alternate, at least if the full wall R-value is present between the duct and the exterior sheathing, we feel it should be deemed to comply.
14. HVAC rater checklist, item 9.4. "Doors to garage.." should read "Doors between the house and garage...". Also, the HVAC checklist seems to be an odd place to put this requirement. Despite the logical connection to IAQ, it seems to fit much better in the thermal enclosure checklist, and is less likely to be missed by the responsible parties.
15. HVAC rater checklist, footnote 8: add "per 100 s.f." after "4 CFM25".
16. HVAC rater checklist, footnote 19: This appears to be a slight misreading of the "remote-mounted" exclusion from 62.2. The quoted definition of "habitable space" is from 62.2, but it implies that fans mounted in bathrooms, toilets, or hallways are excluded from the sound level requirement. 62.2 (2007) section 7.2.2 exception explicitly states that "...a remote-mounted fan must be mounted outside the habitable spaces, bathrooms, toilets, and hallways, and there must be at least 4 feet (1 m) of ductwork...". We believe it is EPA's intent to align with the 62.2 definition; if bathrooms were excluded, then the sound level requirement would never apply to surface-mounted bathroom fans, which seems contradictory to the intent of items 8.3 and 8.4.

A clearer way to express the exclusion would be to eliminate the entire reference to habitable spaces, and express the exclusion instead as "...HVAC and central ventilation systems". Footnote 19 could then read: "Exempted ventilation systems include ERV, HRV, and other ducted, central exhaust and/or supply ventilation systems that do not have in-situ noise ratings. "
17. HVAC rater checklist, footnote 22: We recommend that EPA reconsider the allowance of unvented combustion appliances. A 2008 University of Illinois Building Research Council study (Gordon, Francisco, Rose) "Final Report / Combustion Product Concentrations of Unvented Gas Fireplaces" monitored 30 homes with these devices under normal operating conditions. They found that despite manufacturers warnings against such use, vent-free fireplaces typically become the de facto primary heating source during operating hours; when use was frequent, the units became a significant primary heating source (in one house out of the 30 the fireplace was used as the exclusive heating system). The researchers also found that the use of



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unvented appliances "can result in excessive levels of combustion gases", principally nitrogen dioxide (NO₂) (80% exceeded the 110 ppb threshold); 20% of homes exceeded the 8-hour avg. threshold for CO; and they measured "a clear increase in moisture levels in the homes due to fireplace operation". (Report at <http://brc.arch.uiuc.edu/billrose/FinalReport.pdf>; summary presentation available at www.healthyhomestraining.org/Research/House_as_Chimney_Gordon_11-21-09.pdf). Although the hearth industry has been successful at beating back most code restrictions on the devices, the building science community has consistently questioned their safety, and this report supports that position. It seems contradictory to mandate that all combustion appliances be mechanically- or direct-vented in a voluntary program like ENERGY STAR, yet to only "recommend" against unvented appliances.

18. Water Management System Builder Checklist, Item 1.1: We feel that a continuous layer of minimum 1" extruded polystyrene insulation should explicitly qualify as a substitute for the sheeting as a capillary break. Also, if the size of the "clean aggregate" in the first bullet were increased from 0.5" to 0.75", "sheeting" would not be needed. A layer of uniform-sized, clean aggregate or stone at least 3/4" is not subject to capillary absorption. If the size was increased the "sheeting" would only be needed over the sand layer mentioned in the second bullet.

19. Water Management System Builder Checklist, Item 3.1: Despite EPA's response in the first public comment (#145), we believe that requiring cement board is a mistake in cases where there would otherwise be no interior wall sheathing behind prefabricated tub or shower units. It is true that cement board is a much better backing than "MR" paper-faced wall board, and should be required as a backing for tile-in-place units. CSG supports the exclusion of any paper-faced gypsum in these locations. But adding a layer of cement board behind a unitary fiberglass tub or shower does not help. It does not accomplish vapor control. Any vapor drive would be concentrated at openings (such as for a shower valve), which would necessarily be cut out of the cement board also, allowing just as much moisture to reach other materials behind. A moisture-proof material has no advantage over no backing material at all: non-existent backing materials are not prone to damage. Finally, addition of a sheathing material behind a flanged unitary shower or tub unit will necessitate furring the rest of all adjacent walls to match the extra thickness. This is a significant hassle, with no substantive benefit. In cases where an air barrier is required, other materials such as thermoply or sheet polyethylene may be used more economically than cement backer board.

20. Water Management System Builder Checklist, Item 3.2: This seems of limited benefit, and not defined, and is very difficult to verify. All building materials, everywhere? Perhaps "porous" building materials at the very least, should be specified.

21. Water Management System Rater Checklist, overall: CSG feels that there are too many items here that are questionable for the rater to verify effectively, and for which the liability for proper installation should remain solely with the builder. We would prefer that EPA eliminate the rater portion of the water management checklist entirely. At the very least, sections 3 and 4 (wall and roof assemblies) should either be moved to the builder checklist (along with their associated footnotes), or the number of allowed builder sign-offs should be increased from 2 to 7 to accommodate these items as essentially remaining fully the builder's responsibility.

22. Water Management System Rater Checklist, item 2.3: An exception should be made clear for closed-cell sprayed urethane foam, an approach that has been used extensively in Canada for decades, and that has been an important tool to reduce moisture loads through otherwise unchecked foundation moisture evaporation in houses with wet basements. The clearest approach would be to allow a Class II or higher vapor retarder (as defined in 2009 IRC), which would still allow some drying to inside, and would include closed-cell foam applications directly on foundation walls. (Note that the 2009 IRC does not exclude even Class I vapor retarders for below-grade walls; it simply excludes basement walls or the "below grade portion of any wall" from the vapor retarder requirements for zones 5-8 and Marine 4.)



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23. Water Management System Rater Checklist, item 3.2: This is a repeat of the builder checklist item 3.2, as such it is unnecessary and should be removed from the rater checklist. The responsibility for "all building materials" is clearly with the builder and cannot be evaluated by the rater.

HERS Index Target Procedure

1. Page 1, step 1: insert "the minimum values of" after "...would have been built using"
2. Exhibit 2, Foundations, insulation table: these U-factors are specified in IECC 2009, Table 402.1.3 as equivalents to the insulation R-values required from table 402.1.1. However, specifying U-factors for crawlspace and basement walls may be problematic for rater configuration of inputs for these walls, because software inputs are unlikely to include (or even display) the equivalent U-factors. These U-values include the full assembly but not ground conductivity or exterior air films (see IECC 2009, Table 402.1.3, footnote d). We suggest EPA include the insulation R-values and assumed assembly details for manual configuration as long as that is necessary, as well as U-factors for automated software configuration.
3. Windows: the "assumed" SHGC values for zones 4-8 are too high to reflect realistic ENERGY STAR prescriptive compliance; these values are not common in the marketplace. Commonly available windows with U-factors of 0.3-0.32 tend to have much lower SHGC's; typical values are numerically close to the U-factors in this range, and are if anything somewhat lower than the U-factors. We suggest 0.32 for the SHGC requirement in all zones 4-8.
4. Exhibit 2, Heating Systems, heating equipment capacity, and Cooling Systems, cooling equipment capacity: we suggest deleting "otherwise, same as Rated Home" because the rated home may have the incorrect equipment capacity. RESNET accredited software has the capacity to calculate and report loads (by requirement) in a way that is "substantially equivalent" to Manual J.
5. Exhibit 2, Heating Systems, heat pump efficiencies and "System Type" note: there is a very large jump in the reference heat pump efficiency between CZ6 (HSPF of 9.5) and CZ7 (equivalent HSPF of 11.3). Most homes with a heat pump CZ 6, and many in CZ5, are using ground-source heat pumps (GSHPs), and we feel that configuring the reference home with an air-source heat pump (ASHP) may give a significant "free rider" advantage to GSHP homes. Furthermore, in mixed climate zones (3-5), setting the reference heating efficiency for GSHPs at the relatively low level of an ASHP gives a large advantage to GSHP homes that will likely result in much less efficient enclosures. Just as EPA has set separate reference efficiencies for different types of gas heating systems (furnaces and boilers), we feel that heat pumps should be similarly differentiated by type in the reference home. We recommend that when the rated home has a GSHP, EPA require a ground-source heat pump in the reference configuration in all climate zones.
6. Exhibit 2, Cooling Systems, heat pump efficiencies and "System Type" note: because the cooling SEER requirement is close for all climate zones, we recommend that EPA not differentiate between ASHP's or GSHP's in the cooling section as well. (GSHP rated EER's of 14 are unrealistically low in any case). The "System Type" note could be removed, and the current "ASHP" and "GSHP" lines could be combined into one line "Heat pumps (air- or ground- source) SEER:". As an alternate, EPA could consider increasing the cooling efficiency requirement for GSHPs in warm and hot climates, based on similar logic to comment (5) above.
7. Exhibit 2, Service Water Heating: Use (gallons per day) and tank temperature correspond with current RESNET standards (and the IECC 2009 performance method), and raters are required to use RESNET-accredited software for this analysis. Accredited HERS software does not allow these values to be adjusted, so there is no need to specify them explicitly here; we recommend deleting these sections, or changing them to



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read “in accordance with RESNET standards”. Furthermore, if RESNET standards change, leaving this in the EPA reference definition would introduce a discrepancy that could be difficult to work around.

8. Exhibit 2, Service Water Heating (and footnote 9): no values are given for oil water heaters; these values are needed.

9. Exhibit 2, Lighting and Appliances: ceiling fans should be accompanied by a note indicating that it applies only where ceiling fans are included in the rated home.

10. Exhibit 2, Internal Mass: because internal mass is specified explicitly in the RESNET standards, and raters are required to use RESNET-accredited software for this analysis, there should not be any need for raters to explicitly enter the value of internal mass. We recommend that the entire section be rewritten as: “Additional mass specifically designed as a Thermal Storage Element shall be excluded from the ENERGY STAR Reference Design.” This would cause any accredited HERS software to use the correct value.

11. Exhibit 2, footnote 1: Same comment as National Program Requirements, Exhibit 1, footnote 2 (comment #7 under program requirements): we suggest referencing the IRC rather than define egress windows explicitly).

12. Exhibit 2, footnote 2: We recommend including an explicit reference to the RESNET standards for the definition of “Conditioned Floor Area”.

13. Exhibit 2, footnote 5: We suggest deleting the term “For informative purposes”; the U-factors listed should be the governing values. We suggest adding the following at the end: “Except for foundation walls, where frame cavity R-values are expressed explicitly [see comment #2 above], the ENERGY STAR reference design shall be configured using the U-factors in Exhibit 2.”

14. Exhibit 2, footnote 7: We don’t believe that this adjustment is necessary, nor that it supports EPA’s intent to provide a level of stringency consistent with a comparable set of technologies across housing types. The numerical adjustment shown here is complex for raters to implement, and will give unneeded credit to attached homes and homes with conditioned basements.

15. Exhibit 2, footnote 10: This footnote is unnecessary. The parameters for a setback thermostat are specified in the RESNET standard—it should not be necessary (or even possible) for a rater to manually configure the setpoint criteria using accredited software. Further, if the RESNET standards are amended, an unnecessary discrepancy would result.

16. Exhibit 2, footnote 11: This footnote is unnecessary. The equation for internal gain is specified in the RESNET standard—it should not be necessary (or even possible) for a rater to manually configure the internal gains criteria using accredited software. Further, if the RESNET standards are amended, an unnecessary discrepancy would result.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Degnan Design Builders, Inc.

Respondent Last Name: Degnan

Respondent First Name: Abe

Comments: I have particular concerns about the revisions to the ENERGY STAR program.

-In Wisconsin we do not have the IECC. We have the UDC, which is an excellent and progressive code. The EPA's proposed changes would require builders to match the thermal values of the 2009 IECC code. Currently builders have a choice in wall, ceiling and foundation insulation, as long as the home meets the "performance" requirements. These requirements seem to indicate that the program will be more "prescriptive" and less performance based. I want to continue to be able to use performance basis for my homes.

-The requirement for sheetrock to be sealed to the top plate - how does this work in my climate where we have poly vapor retarder on the inside of the building? It is not feasible to seal the sheetrock to the top plate because poly is there. Also, it is not practical to seal the poly to the top plate either, because the insulators are the ones who install poly, and the sealant would leave a bulge by the time inspections are completed and sheetrock is applied.

-Prohibiting building cavities from being used for return ducting is expensive and does not provide perceivable benefit. In Wisconsin where we have insulated, conditioned basement spaces the return ducts in the floor joists are very effective. My HVAC contractor installs panning to stop the return well short of the ring joist. They also seal the ends of the panning. Testing has consistently proven my HVAC contractor's performance to be excellent!

Thank you.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Eastern Heating & Cooling Council

Respondent Last Name:Janowiak

Respondent First Name: Ed

Comments:Inspection check list
heating and cooling system design

2.11

"design duct static pressure" - _____ IWC

A static pressure is not what you calculate when doing a duct design. The line here should ask for Friction Rate. That is the goal of the designer.

He first looks up the TESP from blower data, subtracts device losses, this is ASP. $ASP \times 100 / TEL = FR$



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Efficiency Vermont

Respondent Last Name:Gordon

Respondent First Name: Chris

Comments:

Dear EPA,

Thank you for the opportunity to respond to the revised ENERGY STAR v. 3 for New Homes specifications. Efficiency Vermont has had a chance to review the most recent specification and would like to provide comments on the content and scope of the newly revised standard. We appreciate EPA's thoroughness in responding to the issues raised during the first comment period and hope that you will give this round of comments and questions equal attention.

As noted in the previous submission of comments, Efficiency Vermont is an energy efficiency utility providing efficiency services to residents and businesses throughout Vermont. Services are delivered by the Vermont Energy Investment Corporation under contract to the Vermont Public Service Board, and are funded by a surcharge on all electricity bills in Vermont. Efficiency Vermont currently provides the "Vermont ENERGY STAR Homes" service at no cost to enrollees. Ensuring broad participation and cost effective program implementation are key considerations in determining how best to achieve energy savings throughout the state.

Please find below Efficiency Vermont's comments on the revised ENERGY STAR v.3 specification. Included are comments on positive changes from the previous specification, as well as fundamental challenges we foresee in implementing the new ENERGY STAR for Homes program in Vermont. Broad comments are noted first (Sections 1 – 4), followed by specific comments and questions on the proposed specification and checklists (Section 5). Please note that Efficiency Vermont also participated in the development of 2nd round comments with the Consortium for Energy Efficiency (CEE).

1. POSITIVE CHANGES FROM ENERGY STAR 2011 version 1

A) Extension of transition period through 2011 for certification of new checklists.

B) Additional efforts to maintain two rater site visits through streamlining of rater checklist requirements (though in Vermont we question whether the changes will be enough to limit our work to two site visits).

C) Aligning HVAC requirements with ANSI, ACCA, and ASHRAE protocol.

D) Proposed development of a Quality Assurance plan to ensure equitable implementation of the ENERGY STAR for New Homes standard across the country.

2. PROGRAM SPONSOR IMPLEMENTATION CHALLENGES

A) Despite reductions in the Rater checklist requirements, completing the checklists in two site visits will still be challenging. Given the workflow of building trades in Vermont, we are doubtful that all Rater checklist items can be visually inspected or tested in two site visits. Our Project Managers anticipate an average of 3 – 4 site visits



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to complete the checklists, even with the additional builder sign-offs. Each site visit can be time-intensive given Vermont's rural nature and travel distance required for site inspections. In order for delivery of the ENERGY STAR for New Homes program to remain cost effective as a base residential new construction service, Efficiency Vermont cannot afford to add more time and cost to program implementation than already exists. Checklist items that would likely require builder sign-off (or a separate site visit) are noted in Section 5, "Specific Comments and Questions on Program Requirements and Checklists". We would likely need to maximize the number of builder sign-offs on most projects, which decreases the extent to which ENERGY STAR is truly a third-party verification program.

B) Justifying increased implementation costs given Efficiency Vermont's principal mandate to implement cost-effective energy efficiency. Efficiency Vermont is primarily funded through a charge on Vermonters' electricity bills. We will need to make sure the energy savings we claim justify the extra resources spent in implementing the new standard, or we will need to pass some of the implementation costs on to participants. Passing on costs to participants could lead to a negative public impression given participants' belief that they are already paying for Efficiency Vermont services through the surcharge on their electricity bills. Even if we assume that the Rater checklists can be performed in two site visits and builders and contractors are up to speed on the new requirements, our Project Managers estimate a minimum of three extra hours per project to complete the new checklists and complete additional energy modeling required to determine the target HERS Index, plus an additional two to three hours for on-site builder education during the first year of the new service. Multiplied over several hundred projects a year this extra time could result in prohibitive cost in relation to program benefits.

C) Time required for proper training will be significant.
Builders- Training builders to the new standard will require substantial time and resources. Efficiency Vermont works with over 300 builders through the Vermont ENERGY STAR Homes service. Rather than having several large developers accounting for the majority of our projects, we work with numerous smaller scale builders and developers who will each require training. In addition to the proposed webinars and written materials offered by EPA, we foresee much of the training needing to take place on-site with each individual builder. Our Project Managers estimate this additional time requirement as two to three hours per project during the first year of the new service.

HVAC contractors and suppliers- New HVAC requirements will require extensive training for HVAC contractors and suppliers in Vermont. In our HVAC market suppliers will likely be the ones filling out and signing the design portion of the HVAC QI checklist. While we like the intent of the HVAC checklists, there is concern that adding new layers of training, installation requirements, and paperwork will lead to implementation challenges for partnering contractors and HVAC suppliers.

D) Potential for drop-off in builder participation.
Efficiency Vermont depends on a high level of market penetration to achieve our energy savings goals. We share the EPA's belief that there will be a decrease in participation once the new standard goes into effect. This is confirmed by builders who report that the increased complexity and cost to meet ENERGY STAR will deter them from participating in the program, especially in a down market. We have heard from several builders that third party inspection is more important to their customers than the label associated with it. In addition to long-term cost effectiveness of measures provided in EPA's "Savings and Cost Estimate Summary", builders would like to see evidence of increased value in homes receiving the ENERGY STAR label.

If there is a high degree of builder fallout, Efficiency Vermont is concerned that we will



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be spending more verification time on fewer projects, leading to higher per project costs and a decrease in energy savings potential. Homes meeting the new ENERGY STAR standard will undoubtedly be of high quality and efficiency; however we will need to determine the level to which current program participants anticipate staying with the program once changes go into effect. In addition to collecting trade ally comments on the new standard, Efficiency Vermont is planning to organize focus groups in the coming months to discuss the impacts of the proposed specification on the Vermont building community.

3. QUESTIONS NEEDING FURTHER CLARIFICATION

A) For items requiring builder sign-off, does the builder need to certify that the item has already been properly installed, or is it acceptable to certify that construction plans call for the item to be addressed and properly installed? If builder sign-off cannot occur until after all items are installed, then this would result in substantial delays in project close-out. For example, homes completed in the fall often are not graded until the spring. We are concerned that these delays may make it more difficult and time-consuming to close out projects months after the majority of the work has been completed.

B) Multifamily Clarifications. The specification appears to be written for single family detached homes. Guidance on how to integrate multifamily projects into the new specification would be appreciated. Specific questions and recommendations are noted below:

- When calculating multifamily Benchmark Home Size, does each unit in the rated building need to have its own Benchmark Home Size baseline as determined by the number of bedrooms in the unit? (I.E.: a 10 unit building needs 10 Benchmark Home Sizes and corresponding 10 Size Adjustment Factors.)

We would strongly favor a system allowing comparison, for example, of all bedrooms combined in a target multi-family home to a single Benchmarked Multi-Family Home Building Size. Please include clarification in the standard.

- How are common spaces in multifamily homes calculated into the Benchmark Home Size? (I.E.: Laundry rooms, common corridors, community room, etc.?)

Multifamily homes with more units typically have more common space, resulting in denser parcel development, corresponding to reduced energy consumption per family. It would seem that these building types should be rewarded through the Energy Star rating system. The following scenario does not seem equitable:

- ▶ A single 2 bedroom home gets 1,600 sf.
- ▶ Ten 2 bedroom single family homes get 16,000 sf.
- ▶ A single 10 unit building with 2 bedrooms/unit gets 12,400 sf.

This could lead to significant floor area losses for MF homes. When determining the conditioned floor area for a benchmark multifamily building, we recommend clarifying the standard such that the CFA for a 10 unit, 20 bedroom building would



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be calculated:

10 units * 400 = 4,000

20 bedrooms * 600 = 12,000

Total: 16,000 Sq ft

We would appreciate further clarification on how MF homes will be evaluated under the new specification.

C) Will financial resources be available to help program sponsors cover the extra costs of training builders and contractors in their region?

If so, how much do you anticipate making available and how will these funds be allocated (i.e. grant process or direct distribution)? What would the timeline be?

D) What is your plan for the development and implementation of the ENERGY STAR QA process and who will provide QA oversight once developed?

The increased use of builder self-certification could place at risk the integrity of ENERGY STAR as a third-party verification unless a comprehensive quality assurance procedure is developed. Efficiency Vermont anticipates performing spot checks and onsite verification of builder sign-off items on a percentage of homes. It would be helpful to better understand how EPA's planned quality assurance requirements would apply to program sponsors.

E) What is the rationale for requiring proper sizing of heating systems when only cooling sizing is required in the current standard? What degree of energy savings do you anticipate seeing?

F) How do you anticipate ENERGY STAR integrating into green building programs such as LEED for Homes and NAHB's National Green Building Standard?

G) To what extent will rater judgement be acceptable with regard to a specification "meeting the intent" of the ENERGY STAR standard.

4. General Recommendations

A) Allow flexibility for states to adopt standards more stringent than those set by EPA.

It has been mentioned on several conference calls that states could have the ability to adopt ENERGY STAR standards more stringent than those set by EPA. Efficiency Vermont would like to have the flexibility to create a fixed baseline HERS index lower than all possible target indices created through ENERGY STAR modeling procedures. We would also like the flexibility to utilize a Size Adjustment Factor more stringent than what is currently being proposed. This increased flexibility would allow us to require HERS scores that challenge Vermont builders and bring energy use in larger homes down to a level more consistent with smaller homes. We would appreciate any guidance from EPA on how these alterations to the program could be achieved.

B) Make the Water Managed Construction Checklist entirely builder-certified.

Because of the construction workflow in Vermont, the WMC construction checklist



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would likely require additional Rater site visits. This could result in prohibitive implementation costs to verify measures not directly tied to energy savings.

C) Extend comment period to allow time for more input from trade allies.

Efficiency Vermont wanted the ENERGY STAR specifications to be closer to final before sharing them directly with builders, HVAC contractors and trade associations. Now that the nearly final specifications are available, there is a comment window of less than one month during a very busy time of year, not enough time to integrate feedback from our trade allies into our comments.

D) Where applicable, align specific program requirements and definitions as closely as possible to national green building programs such as LEED for Homes and NAHB's National Green Building Standard. Consistency will benefit all programs.

Example: Ensure that protocol for calculating conditioned floor area is consistent.

5. SPECIFIC COMMENTS AND QUESTIONS ON PROGRAM REQUIREMENTS & CHECKLISTS

A) Thermal Enclosure System Rater Checklist

● The following eight TESRC items will likely be Builder sign-offs on a regular basis. This does not allow for much flexibility if other items come up that can't be rater-verified.

- 3.1- tub insulation/air barrier
- 3.2 - fireplace insulation/air barrier
- 3.13- soffit insulation/air barrier
- 4.3.5b (insulated headers)
- 4.3.5d (insulated intersection of interior/exterior walls)
- 4.6 (recessed cans)
- 5.4 (sealed drywall)
- 5.10 (SIP sealing)

Note on 3.1, 3.2, & 3.13- Usually we can see the air barrier, but not the insulation in these locations. If we don't assume insulation behind the air barrier, then each of these items becomes a builder sign off. Now that grade I insulation is part of the ES standard, it becomes a bit dicier to assume compliant insulation behind the air barrier. If, on the other hand, we insist on seeing the insulation, then it becomes a second trip to see the air barrier before finishes are installed. For cantilevered floors and double walls we will have to start insisting that one of the air barriers is left off for insulation inspection, and that becomes a small sequencing headache for the builder.

● 4.3.1- Continuous rigid insulation sheathing.

R-6 insulation is a concern in climate zone 6 because some builders might be tempted to use foil faced high-R products that will shift the vapor retarder to the outside of the building. We recommend that Zone 6 use R-10 sheathing as in higher climate zones to reduce potential for condensation.

● 4.3.5e- Studs are spaced at 16" for 2 x 4 framing and at 24" for 2 x 6 framing unless



ENERGY STAR New Homes Proposed Guidelines Comment Form

construction documents specify otherwise.

Please define “Construction Documents”

- Footnote 5- An air barrier is not required at band joists, but is recommended in Climate Zones 4 and higher.

We believe this should be required practice in Zone 6.

- If a rater believes a wall assembly taken as a whole functions as an effective air barrier, but there is not a designated air barrier on the interior wall, can the wall assembly pass the Thermal Enclosure System Rater Checklist?

Example: Could a well-constructed wall assembly consisting of dense pack cellulose, poly, and shiplap or tongue and groove finish pass?

- Could the framing/reduced thermal bridging requirements be signed off by the project's structural engineer (especially for Multifamily Homes)?

B) HVAC System Quality Installation Contractor checklist

- Section 1- Need “N/A” checkbox.
- 10.1- Are individual room airflows within the greater of +/- 20% or 25 cfm of the design/application requirements for the supply and return ducts?

Is this measured flow and if so, who is measuring? This requirement could be a significant time burden.

- Footnote 6- ...Systems that are not AHRI rated may be used, as long as a copy of OEM-provided catalog data indicating acceptable combination selection and performance data is provided.

Please confirm this change from the current ENERGY STAR standard which requires AHRI rated systems to qualify for the ENERGY STAR label. The new specification would appear to move away from 3rd party verification of system performance.

C) HVAC System Quality Installation Rater checklist

- 7.2- Air inlets > 4ft above grade in Climate Zones 4-8.

We would like to see an exception in cases where vent is protected from snow accumulation.

- 9.2- If solid-fuel burning appliances are located inside the home's pressure boundary, total net rated exhaust flow of the two largest exhaust fans (excluding summer cooling

fans) is < 15 cfm per 100 sq ft of occupiable space when at full capacity

- ▶ Please define “occupiable space” in the above requirement.



ENERGY STAR New Homes Proposed Guidelines Comment Form

► This would prohibit solid fuel burning appliances if exhaust fans exceed 300 cfm for 2000 sf home. Most dryers are 200-300 cfm. This provision would make it challenging for anyone with a woodstove to meet Energy Star (which is a lot of VT

homes). Are there any methods of accommodating depressurization issues and gaining exception from rule like provision of outside air supply to woodstoves?

- 9.3 Air-handler and return ducts not located within the garage.

Does this mean that a return duct cannot be installed to draw air from the garage or that a return duct cannot run through a garage or both?

D) Water Management System Builder Checklist

- 3.1 Cement board or equivalent moisture-resistant backing material installed behind tub and shower enclosures.

► This will require mention or call out in air barrier text of Thermal Enclosure Checklist;

► In addition to having this as a requirement for walls behind tub and shower enclosures, consider having this specification apply to walls subject to tub/shower splash

► Fire prevention code officials only recognize a few products for fire-rated party walls. These paper-faced wall boards cannot be substituted with other materials not listed for fire-rated assemblies, resulting in a problem if a tub is on a party wall. Would EPA allow paper faced product behind tub if non-paper-faced product exposed around tub area?

E) Water Management System Rater Checklist

- Items potentially difficult for Rater to verify within two standard site visits:

2.1 Patio slabs, walks, and driveways sloped > 0.25 in. per ft. away from home to edge of surface or 10 ft., whichever is less.

2.2 Final grade sloped > 0.5 in. per ft. away from home for > 10 ft. and back-fill tamped to prevent settling

3.2 Fully sealed continuous drainage plane behind exterior cladding that laps over flashing in Section 3.16

4.1 Gutters and downspouts empty to lateral piping that deposits water on sloping finish grade ≥ 5 ft. from foundation or to underground catchment system > 10 ft. from foundation

- 2.3- Interior surface of below-grade walls not finished with continuous vapor barrier.

One of our greatest successes in getting builders to do TBIC-compliant foundation insulation has been installation of a foam board product with a vapor barrier facing (the facing is rated to be left exposed; other foams are not). This checklist item could

be a problem for fire-rated and TBIC compliant assemblies.



ENERGY STAR New Homes Proposed Guidelines Comment Form

- 5.3. Building materials with visible signs of water damage or mold not installed at time of inspections.

This will be difficult to assess with house wrap, roofing paper and insulation installed. Efficiency Vermont appreciates the opportunity to comment on the revised ENERGY STAR for New Homes specification. The proposed standard will undoubtedly have a positive impact on the level of energy efficiency in homes throughout the country. Efficiency Vermont will continue to assess the cost effectiveness of implementing the new standard as a core service, keeping in mind the anticipated benefits of the program for builders and homeowners. With the new specification in hand, we now need to determine if ENERGY STAR 2011 is the most effective vehicle for achieving our energy savings goals, while maintaining a high level of builder participation. We appreciate the opportunity to share our comments and look forward to your response to the questions posed in this letter.

Sincerely,
Efficiency Vermont 2011 ENERGY STAR Working Group

Neil Curtis
Richard Faesy
Jeff Gephart
Chris Gordon
Jim Grevatt
TJ Holloway
Emily Levin
Paul Scheckel
Peter Schneider
Matt Sharpe
Li Ling Young



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Eid-Co Buildings, Inc.

Respondent Last Name:Eid

Respondent First Name: Kyle

Comments:This is regarding ID 135, on page 53 of 88, revised 11/10/2009 in the section titled Water Management System Checklist. To Clarify our original comments...

It is our intent to show that trowled mastic is not specified on any of the source documents that are ultimately used to prescribe the Permanent Wood Foundation Moisture Barrier.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Energy Strategies, Inc.

Respondent Last Name:Miller

Respondent First Name: Patrick

Comments: The revisions to the proposed guidelines after the first round of comments do not reflect many changes as suggested or proposed by the many respondents. I am very disappointed by the lack of concern by the EPA as to the detrimental effect this will have on the many, many organizations around the country providing Energy Star consulting and services. Please, please reconsider and re-review the comments and recommendations made during the first round. We are truly concerned about the effect these proposed changes will have on our businesses. Again, we feel that the ENERGY STAR new homes program (Wisconsin ENERGY STAR Homes program) will be detrimentally affected by these changes. Costs of the implementation and verification of these proposed changes on homes (builders as well as homeowners) will, without a doubt, prohibit this program from continuing in an effective manner and will undoubtedly hinder the progressive energy efficient building going on in our state.

Sincerely,
Patrick Miller, Consultant
Energy Strategies, Inc.
3414 S. 18th St.
Sheboygan, WI 53081

acspmiller@charter.net



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Energy Logic

Respondent Last Name:Schwarz

Respondent First Name: Robby

Comments:Inspection Checklists

- Thermal Enclosure System Rater Checklist
 - o 2.2 For Climate Zones 4 and higher, slab insulation shall meet or exceed 2009 IECC levels
Will there be a Slab edge exception like in the current TBC? If so can it be explained better so that there are no multiple ways of interpretation it?
 - o Air Barrier
Full Air barriers should be required inside and outside for all homes in all climates. Fibrous insulation needs the air barrier in all climates.
 - o Reduced Thermal Bridging
I believe that most production builders will choose the advanced framing option but that it is too rigorous at this time.
I think the stud spacing in 4.3.5e should be eliminated in this version.
 - o Air Sealing
R- 10 or better whole house fan cover. Should be installed from house side unless mechanically operated.
Supply and return duct boots should be sealed to drywall and subfloor
 - o Notes
“For purposes of this checklist, an air barrier is defined as any durable solid material that blocks air flow between conditioned space and unconditioned space”
 - Energy Star has allowed flexible air barriers even though it appears that they are not allowed. I would like to see flexible air barriers not allowed in the program. There are too many issues with using a vapor barrier as an air barrier that cause problems.
“Continuous rigid insulation sheathing shall be at least R-3 in Climate Zones 1 to 3; R-6 in Zones 4 to 6”
 - An R-6 foam board insulation is difficult to find. Recommend going to R-5
“Headers shall be minimum R-3.5 for 2x4 framing”
 - Recommend going to ½” foam sheathing which I believe is an R-2.5
- HVAC System Quality Installation Contractor Checklist
- 9. Air Flow Tests
 - o I believe the Rater should be doing the Static pressure, heat rise, and flow across the coil / heat exchanger testing. Maybe both the contractor and the Rater should be doing this but the Rater having to sign off on it being done without doing it does not make sense to me.
- HVAC System Quality Installation Rater Checklist
- Duct Quality Installation
- “2.7 Bedrooms pressure-balanced such that 1 sq. in. of opening is provided per 1 CFM of measured supply air using transfer grills and/or jump ducts. Alternately, dedicated return ducts may be used to meet this requirement.”
 - o I believe in pressure balancing which would require using a manometer to ensure that the pressure in the room is not greater than ± 3 Pascals. However there needs to be a national standard on how to do the test. For example, are all the supply lovers opened, closed, or left as they are found when doing the test? We have had problems with contractors with regards to this test because they have used the lovers to balance the house and re open them up for the test which causes the room to over pressurize. This is required by the IAP and the same issue of a lack of a national standard on how to do the test is present.
- Duct leakage



ENERGY STAR New Homes Proposed Guidelines Comment Form

- We have another frame of reference for total duct leakage in Colorado. If all ducts are inside the conditioned space it can't leak more than 10% or the rated systems flow. If any portion of the ducts are outside the conditioned envelope that it can't leak more than 5% of the rated systems flow. I would suggest moving to this for the total target number and keeping the 4 or 6 CFM per 100 sqft rule for leakage to outside.

Combustion & non- combustion Pollutants

- 9.4 Doors to garage gasketed or made substantially airtight

- o I believe this requires a pressure diagnostic test to ensure garage separation. If the house is -50 Pascals with respect to outside the house should greater than or equal to -45 Pascals with reference to the garage.

Notes

- 6. As alternative to prescriptive requirement, a measured pressure differential no greater than 3 Pa (0.012 in. w.c.) between closed rooms and adjacent spaces that have a return is permitted to demonstrate compliance.

- o We need a national protocol on how to do this test. My hope is that Energy Star will create one or require that RESNET do so.

- If total duct leakage is < 4 CFM25, then leakage to outdoors need not be tested.

- o If total duct leakage is less than or equal to 5% of the rated systems flow then leakage to outdoors need not be tested

Water Management System Rater Checklist

- The wall assembly items would require a site visit prior to our normal rough inspection so it would seem to make sense to me to have the Rater do the Builder checklist as well.

- 2.2 Final grade sloped > 0.5 in. per ft. away from home for > 10 ft. and back-fill tamped to prevent settling

- o Checking the back fill tamping is not practical at all.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: G&G Custom Homes, Inc

Respondent Last Name: Garcia

Respondent First Name: Joe

Comments: I will probably stop offering Energy Star if these updates are finalized, and instead go with a marketing campaign with a less intensive "Green message".

Some of my biggest concerns are: Minimum heat pump standard level, lowered duct leakage rate, Rigid insulation of R-6 or Grade I Insulation, window u-value level, R-6 duct insulation on ALL ducts, raised heel truss, Inspection Forms.

While all the prescriptive requirement changes are beneficial, this is a terrible time to mandate these cost increases. Why not offer an optional, voluntary Energy Star Plus program that included all these requirements? Such a program would allow builders that already exceed Energy Star or builders who want to exceed Energy Star to differentiate themselves.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Gimme Shelter Construction Inc.

Respondent Last Name:Mark

Respondent First Name: Klein

Comments:We have been long time supporters of the Energy Star program although we feel that it falls short of it's potential to push needed improvements in building performance. A program that allows a more transparent (for the homeowner) relative rating of Energy Star Homes within the program would reward builders that are investing in creating homes that push the envelope for performance. Having said that we think it is essential that the Energy Star program remains accessible and affordable and we are concerned that the effect of the changes in the program will be to discourage builders and homeowners from taking advantage of the very real benefits of working with a home rater in the design and construction of new homes because of the added cost incurred as a result of these new requirements.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Grading Spaces LLC

Respondent Last Name:Furst

Respondent First Name: Mark

Comments:As a relatively new home energy rater and Energy Star consultant I am just starting to get my head around the present system of certifying homes. The work involved in helping builders acheive certification can be taxing, but it is worth doing and has helped improve the quality of buildings in my area. Now as I review the new guidelines my head is spinning thinking about how much additional work we are going to be required to do in order to incrementally advance the program. Every aspect of the program seems to have been made more complicated, not to mention the additional requirements involving water control and the HVAC contractor check sheet.

I am not disputing that the changes will lead to additional energy savings, it is just that with any additonal work load someone will need to be paying for that workload. Filling out additional paperwork sometimes can be worked in but In order to be able to honestly fill out the check sheet information more site visits will be required which involves driving to and from the work sites and spending time there. As our system is now, we need to visit 3 times until builders certify 3 homes, after that 2 visits are reqired. After looking at the new system, it looks like we will have to be doing more site visits, not to mention have more interaction with the architect/engineer and the sub contactors.

Most of the builders in our area who participate in the Energy Star program are custom home builders. They need to be able to bid competitively with other builders and they will somehow need to work into their budgets the additional costs of having these inspections done. As the housing stock in Wisconsin is already of a fairly high standard, I see that our services will end up being the first to get cut, especially as the codes are now forcing many of the features that used to be only found on Energy Star homes.

In your quest to "remain relevant" I feel that you are bulking up the requirements in non-energy related areas. Why not just leave these to the LEED and similar programs? Make an effort to dovetail with other tracks, not run them over. One thing that particularly worries me is that it seems very easy for a home to "fail" due to small items on these check sheets. A builder is only going to put up with that nonsense for so long - paying me good money to tell them that they (or a sub) screwed up in a seemingly minor way.

As we move forward with energy efficiency in the main stream (codes), I feel that most homeowners will be content with a well performing home, but won't pay the true cost to wring the last few ounces of efficiency that comes from some of these new requirements. It's hard enough to get builders to pay for and pass on the cost right now - even when they get the EPAct tax credit!! and we can't rely on that being there forever.

Respectfully,

Mark Furst
Fort Atkinson Wi.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Harmony Energy Factor Systems

Respondent Last Name:Hepfler

Respondent First Name: David

Comments:National Energy Team, I work in Wisconsin, have worked with Wisconsin Energy Star Homes program for last 9 years, over this period of time we have developed relationships with a good number of custom home builders, in fact I believe the last numbers I seen on percentage of home permits issued and Wisconsin Energy Star Home builder building them was at about 35% of new homes going up in Wisconsin, considerable higher than 9 years ago,.Our builders have found great value in modeling, testing, understanding good energy efficient choices, many have recognized they can build home with combustion safer heating appliances (No atmospheric vented appliances,), tight shell construction air boundaries(Avg ranging .05--.12 per sq ft exterior shell leakage), meet good venting requirements, (Ashrae 62.2 and all wet areas including kitchen venting, tested to meet a requirement) very good thermal boundary choices to meet WI, UDC requirements, they can achieve good performance with resonable monetary addition and still compete with the lower performance builder market even in this tight economic time at present, the non prescriptive approach in WI allows them to cost shift performance choices to where they can work for each builder as building preferences vary in different locations of cold climate Southern WI to colder climate Northern WI. With Wisconsin Energy Star Homes testing , real energy numbers can be projected for choices of future homes and marketed with already tested Homes.The energy numbers of lower performance homes, to tested homes, offer enough to market without breaking the builders ability to compete today, in a market of reduced building costs. I am having a hard time with MY understanding of adding costs to HVAC, Consultants,asking builders and consultants to comment on engineering questions on check lists, filling out 5 check lists, just finding HVAC , Builders, Consiltants, who desire to be involved with a program that demands MUCH more Paperwork and responsibility from their PARTNERS, explain that in production builders scenario, sampling can be used , making no sense to anyone that check lists are so valuable, Except, where sampling is allowed. Builders I am familiar with believe all buildings need to be tested to see if they meet requirements to be an Wisconsin Energy Star Home, with that achieved will offer an Energy star award to the builder and Home Owner. My concern is, the builders I work with will not find added paperwork, signing engineering type questions, quite extensive cost additions, to build a building that has very little energy savings compared to what he is building today in Wisconsin, I fear they are going to disconnect from E Star, as they attempt lead the building industry, however remain competetive to stay in business. I Think the Federal Tax Credits are also helpful to encourage builders partnering, should that go away I am not sure how that would affect partner involvement, Thanks for your time and the opportunity to comment



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Highland Building Consultants

Respondent Last Name: Meek

Respondent First Name: Douglas

Comments: With the new changes to the ENERGY STAR Homes Program, I cannot tell the 75 builders I work that this will be in their best interest to certify their homes to these standards. I will never be able to endorse a program that I do not believe will improve their home cost effectively. There always will have to be a cost benefit ratio that leads to positive changes in the housing industry. currently, the Wisconsin ENERGY STAR Homes Program helps assist builders to improve the efficiency of the houses they build while still being competitive in the housing market. I believe in environmental responsibility. I also believe that builders must be competitive in the housing market. Once again, the best solution to improving the energy issues in housing will be to reduce the rating score by 10 to 15 percent.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Home Builders Association of Georgia

Respondent Last Name:Hicks

Respondent First Name: Deron

Comments:Please accept the following comments on behalf of the Home Builders Association of Georgia (the "Association") with respect to the Proposed New Guidelines for ENERGY STAR Qualified New Homes, as revised.

The Association has carefully reviewed, among other materials, the revised proposed National Program Requirements. Based upon our review of the material provided, we are concerned that the goal of energy savings no longer represents the program's core focus. This change in focus is reflected in many of the checklists, to include the Water-Managed System Builder and Rater Checklists. While these checklists may reflect quality building practices, it is often unclear how these practices relate to the goal of energy efficiency. In fact, this very point appears to be conceded in the EPA's response to the comments from the first comment period. Nonetheless, the proposed requirements remain.

Builders and consumers associate the ENERGY STAR label with energy efficiency. The program is not viewed by the public as a "green" building program (although energy efficiency is certainly a component of any green program), or as a program designed to improve indoor air quality, water management or general construction practices. The Association therefore believes that the proposed new guidelines will inevitably result in consumer confusion and uncertainty. Such confusion and uncertainty will only serve to undermine the value of the ENERGY STAR brand.

The Association respectfully submits that the proposed guidelines should be significantly revised to focus exclusively on those practices that will increase energy efficiency. Moreover, the program should strive to become more result-oriented and less process driven. That is, although EPA's guidelines should suggest best practices to achieve the goal of energy efficiency, the ultimate criteria should be whether a particular builder has delivered a product that satisfies this goal, regardless of the particular path taken to achieve that result. Builders should be encouraged to utilize creative new techniques, products and designs – even if those techniques, products and designs are not included within current guidelines.

Based on the proposed changes and the costs associated therewith, we do not believe that the ENERGY STAR program will be sustainable in the Georgia market.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:The House Inspector, LLC.

Respondent Last Name:Greening

Respondent First Name: Chuck

Comments:I have been working with builders and home owners using the guide lines of the Wisconsin ENERGY STAR Homes program. The Wisconsin program works very well for addressing the potential building problem areas found in our homes. The local program has been very successfully in helping builders improve their overall product and offer a much more efficient home to their customers. These homes meet the Wisconsin standards for testing, combustion safety, air tightness, ventilation, indoor air quality, and exceed all of the national program standards. We have found in Wisconsin that any changes made in the homes are done through educating the builders and the trade's people doing the work. This process works best in person on the job site discussing the problem areas and the best solutions for improving them.

Wisconsin is mainly a custom home market with each home completely different. Home owners here are very budget minded and focus on the homes appearance and overall comfort. They are generally not willing to allocate resources to manage check lists and details that have no measureable impacts on comfort.

It has been disappointing to see the revision of the version three document hasn't adopted the great suggestions offered in the first comment period. In fact the latest revision takes away most of the performance based path with the adoption of the IECC 2009, making the document more of a prescriptive path document without any flexibility. Customers in Wisconsin want the flexibility to incorporate details they believe are important in their new homes.

The proposed system of check lists adds a large paperwork burden and additional visits to each job site. Tracking the paperwork and adding site visits will double the certification costs for these homes. Unpredictable schedules due to weather and work load will make timing the visits impossible.

Many of the items listed as requirements do not offset the cost of installation with reduced energy savings. To name a few items: Requiring sealing duct boots and eliminating the use of building cavities for returns in homes that all of the ducting is in conditioned space has no measureable energy savings. Raised heel trusses to 75% of the insulation height in a market that the typical roof is at least a 6:12 pitch adds more cost than realized in energy savings.

HVAC contractors in our area do not have a full time staff they can dedicate to fill out and track the 70 item check list. The heating systems in our custom home market are designed on-site for each home based on the available building cavity spaces and structure. This check list is overly complicated and will limit the number of contractors able to partner with the program.

The thermal enclosure check list requires rating professionals to decide the extent of excess framing. Much of the framing in the custom homes found in Wisconsin is engineered for structural integrity. This detail should be left to the engineers designing the structure.

The water management checklist are details that are building code related and do not belong in an energy improvement document.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Discussing the version three guidelines with some of our builder partners found that customers do not have the resources to buy the added measures that are required. Most builders thought this would take the majority of their homes out of participating in the ENERGY STAR Homes program.

I suggest that you consider adopting a two tiered program. One at the level the version two program currently is and one with the version three options included. The two levels will allow our builder partners to continue to participate in the ENERGY STAR Homes program with an option to take it further. Remember the only time we have an opportunity to improve buildings is when we are invited to become involved. Buildings that are not entered in our program do not benefit from the conversations we would have had with the builders, trades people, and home owners about potential energy saving improvements.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:J. Patrick Homes

Respondent Last Name:Banowsky

Respondent First Name: Bo

Comments:We have only recently adopted the Energy Star program because we believe that this is a great program that benefits the end consumer. Unfortunately, with the 2011 program as set up today, we will more than likely address our energy efficiency by other means; be it Environments for Living or another program that may arise within the next year. We feel that the cost incurred for a 3500 - 4000 square foot home being built in Houston, Texas to the 2011 Energy Star program will not be beneficial to the buyer. The savings that could be expected on a home this size is minimal and not worth our effort of performing this program. We understand the effort to exceed minimum code regarding energy efficiency, but feel that the water management and quality framing should be left to code enforcement. We fear that eventually this 2011 standard will become mandatory rather than voluntary and will exclude additional buyers into the market because of affordability. If the minimum Energy Star requirements exceed the minimum code by 15%, what happens when the minimum Energy Star cannot exceed the 15% of minimum code?



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:K. Hovnanian Homes

Respondent Last Name:Donnelly

Respondent First Name: Allen

Comments:In either the Prescriptive or Performance Path – the more flexibility you can provide in choosing various Building Features or Elements that contribute to Energy Star would greatly increase the participation in the Program. Different parts of the Country will have different costs –and when you can choose different components (Cost Effective Components) that still provide an Increase in performance. The % increase can be the same – but be able to use different (the Most Cost Effective) Element or Building Feature to arrive at the requested % Increase. Here are two Examples, with different Elements, but both achieve a 15% over the New California Title-24.

Upgrade Combinations That Comply W/T-24	T-24 Score	Cost
R-6 Duct Insulation	1.4%	\$ 35.00
R-13 1 Coat Stucco (R4 Lath)	7.6%	\$ 581.25
14 SEER w/12 EER	3.9%	\$ 260.00
Radiant Barrier	2.3%	\$ 405.25
Total	15.3%	\$ 1,281.50

Upgrade Combinations That Comply W/T-24	T-24 Score	Cost
R-6 Duct Insulation	1.4%	\$ 35.00
Hot water pipes insulated	0.7%	\$ 186.75
Tankless Water Heater	5.5%	\$ 494.00
R-13 1 Coat Stucco (R4 Lath)	7.6%	\$ 581.25
Total	15.2%	\$ 1,297.00

One uses 14 SEERw/12 EER & Radiant Barrier

One uses Tankless Water Heater & Hot Water Pipes Insulated

Both are above 15%



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Keller Homes

Respondent Last Name:Manly Jr.

Respondent First Name: Charles

Comments:First, I think it is important to challenge Sam Rashkin's premise that now is an appropriate time to increase Energy Star requirements and accordingly, the builder's cost of compliance. Mr. Rashkin asserts that by increasing the level of differentiation we will increase sales. Our experience is exactly the opposite. Today's customers appreciate the Energy Star brand, but they are reluctant to pay even a penny extra to obtain it. Put another way, the only differentiation that matters to a typical customer is that of price, and anything that makes new homes less competitive with existing homes must be resisted in this market and for the foreseeable future.

Second, the proposed insertion of the Energy Star brand into water efficiency is wrongheaded and will damage the brand's credibility in the intermountain West. The vast majority of residential water consumption in this region goes to landscape irrigation. In the absence of a strategy that addresses irrigation, the minor upgrades you propose seem insignificant and are therefore not credible. The Energy Star label will be damaged by being applied to "improvements" which do not bring real value.

Fan sound ratings are another area in which the Energy Star brand has no appropriate role.

ASHRAE 62.2 may be the default value for residential ventilation, but it overstates ventilation requirements in a typical home. Ventilating to this level brings with it a substantial energy penalty during cold weather that dictates the addition of an HRV, adding around \$2000 to the cost of a new home. Furthermore, our generally mild climate makes such an expenditure unjustified. A much better solution to the ventilation "problem" would be to require the builder to ventilate in a manner that would make ASHRAE 62.2 achievable by placing control of the ventilation system in the hands of the homeowner. I am reflexively suspicious of any mandate that takes control out of the homeowner's hands – I believe that the homeowner is the individual most qualified to manage his living environment.

The new lighting requirements are also problematic. The ALP has not gained traction, as the available fixture choices are too limited for our customers' tastes. The option of using 80% CFL's - which will inevitably include most recessed cans - will cost far more than your estimate of \$90 per home. This will tempt builders to under-illuminate homes to defray these costs, and homeowners will ultimately provide their own lighting – possibly with the 500W torchieres they moved from their previous homes.

Colorado Springs is in climate zone 5, as is Chicago, but we do not need bituminous membrane (AKA Ice & Water Shield) on all roof eaves. Our climate is not prone to ice damming issues. We have a local Code that addresses the conditions in which this product should be installed. Given our 25-year history of not having ice dams, and a broad scientific consensus that warmer weather is on the way, this seems like a very expensive solution in search of a problem, and an excellent illustration of the dangers inherent in broad climatological groupings.

The very idea of a Size Adjustment Factor for new homes implies that someone other than the buyer and seller is an appropriate judge of how large a home should be. I am extremely uncomfortable with any authority other than our customer determining the appropriate size of our homes, and the SAF places a de facto "Virtuous" or "Unvirtuous" label on the home. This reeks of nanny-statism.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Raised heel trusses will cause some homes to exceed local height requirements, and thus be unbuildable on a given lot. Re-engineering all of our truss designs to meet this requirement is a very high price to pay for Energy Star compliance.

The 2009 IECC may be substantially amended when adopted in Colorado Springs. In particular, if the 2x6 wall requirement is amended out of our local code, builders who are forced to incorporate 2x6 walls as a component of Energy Star compliance will find themselves in an untenable competitive position.

In summary, we have a major divergence of opinion about the types of changes that the Energy Star brand can incorporate at this time. I certainly understand your concern with staying ahead of building codes, but I think that these difficult times call for an incremental approach. Energy Star apparently believes that this moment demands a Great Leap Forward. If this is to be the outcome, I suspect that many of your builder partners will abandon the program.

At Keller Homes, we are always attuned to the risk of building the best home that our customers cannot afford to buy. I urge you, our partners at Energy Star, to be similarly cautious about the possibility of creating an Energy Star program so stringent that few homebuilders can justify supporting it.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Lexington Homes

Respondent Last Name:Wells

Respondent First Name: Greg

Comments:EPA's ENERGY STAR for New Homes Program
Highlighting Version 3 PROPOSED Changes for Builder Partners

Wisconsin ENERGY STAR Homes CURRENT Program Requirements (STANDARDS)
STANDARD NOTES

1. Comply with HERS index of 80 or less Computer modeling by Consultant
2. Site visits as required Number depends on builder experience
3. Full height foundation insulation
4. Sealed sump requirement
5. Meet airtightness requirement Meet Blower door test limits (25 CFM/50 Sq/Ft of shell)
6. Whole house ventilation system ASHRAE 62.2
7. Spot ventilation Kitchen and bathrooms
8. Combustion safety Furnaces, water heaters, and fireplaces (no natural draft or open fireplaces)
9. Carbon monoxide detector(s); Hard-wired OR plug in 1 per floor, where finished bedrooms
10. Any ductwork outside conditioned space, tested to be less than '6' CFM per 100 sq/ft to outside
Testing only required when ducts are outside

Select PROPOSED EPA ENERGY STAR Version 3 Requirements

Location / Checklist ENERGY STAR v3 PROPOSED Requirements NOTES Additional Builder

Material Costs Additional Builder Labor Costs Additional Builder Liability

Overall proposed new requirement Comply with ENERGY STAR HERS index modified for size Homes exceeding 'reference size' table require lower HERS index (this is a carbon footprint issue). Additional modeling time. Possible additional construction costs. Unkown Improvements based on size (why penalize larger home buyers)?

Unknown, but significant

Unknown, but significant

Overall proposed new requirement Comply with all 5 NEW checklists New Checklists include:

*Quality Framing

*HVAC Quality Installation Contractor

*HVAC Quality Installation Rater

*Indoor Air Quality

*Water-Managed Construction

Additional consultant office and field time for verification.

Cost due to added days to schedule

\$300 inspection fees

\$250/day of losses x 2 day inspection/correction

Overall proposed new requirement Mandatory: hot water distribution system Must have. Three system choices.

\$150 insulation pipes

\$450 recirculation pump



ENERGY STAR New Homes Proposed Guidelines Comment Form

\$150 return line

\$300 insul pipes

\$250 recirc pump

\$200 return line

Minimal

Pump service

Minimal

Overall proposed new requirement Mandatory: ALL appliances installed by builder must be ENERGY STAR rated Refrigerator, dishwasher, clothes washer 30-50% additional cost based on models \$1750 if full appliance package Cannot control buyers budget/Lost sales

Overall proposed new requirement Mandatory: ENERGY STAR Advanced Lighting Package or 80% CFL's Flourescent bulbs will add \$150

Pin Based will add \$500

Minimal Customer complaints/negative value

Overall proposed new requirement Mandatory: ALL bath and ceiling fans, must ENERGY STAR rated Eliminates most 'builder grade' fans Approx \$200 per

House \$75 per home Utility cost for continuous run fans/energy loss (spec homes)

1.2 on Thermal Bypass Inspection Checklist Grade I insulation installation

\$50 upgrade

\$250 upgrade

\$250/day of losses x 2 day inspection/correction

1.4 Thermal Bypass Inspection Checklist Wind baffles now mandatory at every truss cavity Currently not 'required' for certification (grading of insulation) \$50 OSB \$200 Labor Loss production time, inspection and correction time

5.1 Thermal Bypass Inspection Checklist Sheetrock at all the top plates must now be sealed Currently recommended as part of an attic air-seal package and part of overall tightness requirement. Attic package Is \$500

\$300 Labor \$250/day of losses inspection/correction

5.4 Thermal Bypass Inspection Checklist Recessed light fixtures must now be sealed to the drywall Currently not a 'physical' callout; part of overall tightness. Part of attic Package

1.1 Quality Framing Checklist Raised-heel trusses Height at the outside top plate must allow full value of attic insulation over the top plate. Raised Heels

\$700.00

\$200 Siding/Brick Possible height restriction per covenance

2.0 Quality Framing Checklist Optimum Value Engineered (OVE) framing EPA is after reducing 'thermal bridging.' Consultant will need to check for 'non-structurally' required lumber. 2' on center (reinforced sheetrock) extra \$100 Minimal Customer perception & UDC bracing codes may not comply



ENERGY STAR New Homes Proposed Guidelines Comment Form

1.2 HVAC Quality Installation Rater Checklist HVAC contractor must show compliance with ACCA Manual J, D, S, and T Part of the HVAC Contractor checklist. This would require additional time
\$100 misc parts Drafting and Design \$300/per House Longer lead times, no in-field modification,
\$250/day of losses

2.9 HVAC Quality Installation Rater Checklist Any ductwork outside conditioned space, tested to be less than '4' CFM per 100 sq/ft to outside Increase in tightness limit 6 to 4

\$300/per unit

\$400 Labor

\$250/day of losses inspection/correction

Entire HVAC Quality Installation Contractor Checklist HVAC contractor must now do a full commissioning procedure on every installation This includes, temp rise/drop, A/C charge, airflow measurements. This would require additional time and equipment most contractors do not have.

Minimal

\$300 per

Minimal

2.5 Indoor Air Quality Checklist Limit of building de-pressurization caused by exhaust fans See Footnote 5 - May add additional 'make-up' air requirements not currently required Unkown Improvements based requirement \$400 Additional cost of more make up ventilation Possible buildup of lower air quality of custom kitchens

7.2 Indoor Air Quality Checklist Carbon monoxide detectors MUST be hard-wired Will have to change one smoke alarm

minimum \$20.00 for first one; \$40 additional if one in basement Minimal

8.1 Indoor Air Quality Checklist MERV 8 filter installed per checklist Checklist has details on the installation of this item

\$150 Filter and Misc

\$100 per house \$50 Customer expense per for replacement filter

1.8 Water-Managed Construction Checklist Protected drain tile surrounded with clean gravel and fabric filter

Footnote 5 includes notation stating "the gravel shall be fully wrapped with fabric cloth to prevent fouling of the drain tile."

Adds \$250 to house if form-a-drain is allowed

Adds \$250 to house if form-a-drain is allowed

\$250/day of losses inspection/correction

3.1 Water Managed Construction Checklist Kick out flashing required at ALL roof-wall intersections See Footnote 9 Ice and water shield \$200 per house when applicable Ice and water shield \$100 per house when applicable

Minimal



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:LIPA, LIBI, NYSBA, NYSERDA

Respondent Last Name:Hollingsworth

Respondent First Name: Alison

Comments:December 16, 2009

Sam Rashkin, National Director
ENERGY STAR for Homes Program
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Mail Code 6202J
Washington, DC 20460

Re.: Comments on the Second Round of ENERGY STAR Qualified Homes 2011 National Program

Dear Sam:

On behalf of the following organizations from the State of New York, we are writing to provide our second round of comments on the "Draft ENERGY STAR Qualified Homes 2011 National Program" (aka v.3). The New York State Energy Research and Development Authority (NYSERDA), Long Island Power Authority (LIPA), New York State Builders Association (NYSBA) and Long Island Builders Institute (LIBI) jointly submit these comments, representing the ENERGY STAR Homes programs, home buyers and builders in the State of New York.

First of all, thank you for the opportunity to respond to the revised v. 3 specifications. We would like to continue offering our support for the EPA proactively taking the initiative to move the threshold up for ENERGY STAR Homes. Given the success of the label over the past few years and the level of uptake, we agree that the time may be right for beginning to ramp up the standard. We appreciate you listening to many of the comments from the first round, but we do continue to have some concerns with the standards as proposed. The market has been very slow to rebound in New York, in fact housing permits continue to decline, and we urge caution and prudence as the standards move forward.

Please find below New York's comments on the revised ENERGY STAR Homes v.3 specification. Included are comments on positive changes from the previous specification, as well as fundamental challenges we foresee in implementing the new ENERGY STAR for Homes program in New York. Please note that some of us also participated in the development of second round comments with the Consortium for Energy Efficiency (CEE).

1. POSITIVE CHANGES FROM ENERGY STAR v.3 FIRST COMMENT ROUND

- A) Extension of transition period through 2011 for certification of new checklists.
- B) Additional efforts to maintain two rater site visits through revisions to rater checklist requirements (though we question whether the changes will be enough to limit our work to two site visits).



ENERGY STAR New Homes Proposed Guidelines Comment Form

C) Aligning HVAC requirements with ANSI, ACCA, and ASHRAE protocol.

D) Proposed development of a Quality Assurance plan to ensure equitable implementation of the ENERGY STAR for New Homes standard across the country.

E) Reducing and streamlining the checklist requirements.

2. IMPLEMENTATION CHALLENGES FOR NEW YORK

A) Despite reductions in the Rater checklist requirements, completing the checklists in two site visits will still be challenging.

Given the workflow of multiple building trades working in different phases on each job, we do not see how all Rater checklist items can be visually inspected or tested in two site visits. This principle of two site visits needs to be the basis for the specifications, and we question whether this can be met. We suggest revisiting all of the checklists with this in mind and potentially modifying the Water Management System Checklist to become a builder-only checklist. We would much prefer to have the Water Management System Checklist excluded from ES 2011 completely based on previous testimony.

B) Time required for proper training will be significant.

Builders- Training builders to the new standard will require substantial time and resources. New York has thousands of builders, large and small, who will all require training to bring them up to speed on v.3. . In addition to the proposed webinars and written materials offered by EPA, we foresee much of the training needing to take place on-site with each individual builder. We are counting on EPA to provide the curriculum, presentation materials and support as we roll out these trainings.

HVAC contractors and suppliers- New HVAC requirements will require extensive training for HVAC contractors and suppliers in New York. In our HVAC market, suppliers will likely be the ones filling out and signing the design portion of the HVAC QI checklist. While we like the intent of the HVAC checklists, there is concern that adding new layers of training, installation requirements, and paperwork will lead to implementation challenges for partnering contractors and HVAC suppliers.

C) Potential for drop-off in builder participation.

We share the EPA's belief that there will be a decrease in participation once the new standard goes into effect. We have some serious concerns about any planned drop-off in participants since that suggests we are moving forward with a program that may not be considering excessive costs and complications. Such an acknowledged drop-off reflects a failure in the program, real or perceived. Such a negative image will significantly hamper the 2011 product in the marketplace. Although some builders in our market could easily transition to the new standard, the increased complexity and cost to meet ENERGY STAR will deter other builders from participating in the program. We are concerned that we will be spending more time on fewer projects, leading to a decrease in energy savings potential. Homes meeting the new ENERGY STAR standard will undoubtedly be of high quality and efficiency. However, we will need to determine the level to which current program participants anticipate staying with the program once changes go into effect.

3. QUESTIONS NEEDING FURTHER CLARIFICATION

A) Framing options needs more clarification.



ENERGY STAR New Homes Proposed Guidelines Comment Form

As you know, we have sections of Long Island that are prone to hurricane winds and have building codes that require high wind-load resistant framing. We request that your list of framing options in 4.3.5 on the Thermal Enclosure System Rater Checklist include additional options and a system for review and allowances for a performance path to compliance that would recognize innovative products and techniques. One such product is Nordic EnviroWall (www.nordicewp.com)

B) Multifamily building guidance.

The standards appear to be written for single family detached homes. There needs to be clear guidance for multifamily buildings throughout, including the following:

- When calculating multifamily Benchmark Home Size, does each unit in the rated building need to have its own Benchmark Home Size baseline as determined by the number of bedrooms in the unit? (I.E.: a 10 unit building needs 10 Benchmark Home Sizes and corresponding 10 Size Adjustment Factors.) We would strongly favor a system allowing comparison, for example, of all bedrooms combined in a target multi-family home to a single Benchmarked Multi-Family Home Building Size. Please include clarification in the standards.
- How are common spaces in multi-family homes calculated into the Benchmark Home Size? (I.E.: Laundry rooms, common corridors, community room, etc.?) Multi-family homes with more units typically have more common space, resulting in denser parcel development, corresponding to reduced energy consumption per family. It would seem that these building types should be rewarded through the Energy Star rating system.
- We would appreciate guidance on how MF homes will be evaluated under the new specifications throughout the standards.

C) Will financial resources be available to help program sponsors cover the extra costs of training builders and contractors in their region? If so, how much do you anticipate making available and how will these funds be allocated (i.e. grant process or direct distribution)? Timeline?

D) What is your plan for the development and implementation of the ENERGY STAR QA process and who will provide QA oversight once developed?

4. General Recommendations

A) Make the Water Managed Construction Checklist entirely builder-certified.

Because of the construction workflow in New York, the WMC construction checklist would likely require additional Rater site visits. This could result in prohibitive implementation costs to verify measures not directly tied to energy savings which makes it extremely hard to justify the adoption of this checklist as part of a revamped Energy Star program. It is certainly part of any legitimate green building program but Energy Star is not supposed to be meeting all green building criteria, absent a comprehensive GB program.

B) Extend comment period to allow time for more input from trade allies.

C) Where applicable, align specific program requirements and definitions as closely as possible to national green building programs such as the ANSI/ICC/NAHB National Green Building Standard or LEED for Homes. Consistency will benefit all programs.

Example: Ensure that protocol for calculating conditioned floor area is consistent.



ENERGY STAR New Homes Proposed Guidelines Comment Form

5. SPECIFIC COMMENTS AND QUESTIONS ON PROGRAM REQUIREMENTS & CHECKLISTS

A) ENERGY STAR Reference Design Home

- Minimum insulation level of R-6 for all ducts in unconditioned spaces

This is a big change from the common practice we see in New York, especially for ventilation-only ductwork. This requirement will be difficult for sheet metal ducts (predominant in our housing stock).

B) Thermal Enclosure System Rater Checklist

- The following eight TESRC items will likely be Builder sign-off's on a regular basis. This does not allow for much flexibility if other items come up that can't be Rater-verified.
 - 3.1- tub insulation/air barrier
 - 3.2 - fireplace insulation/air barrier
 - 3.13- soffit insulation/air barrier
 - 4.3.5b (insulated headers)
 - 4.3.5d (insulated intersection of interior/exterior walls)
 - 4.6 (recessed cans)
 - 5.4 (sealed drywall)
 - 5.10 (SIP sealing)

Note on 3.1, 3.2, & 3.13- Usually we can see the air barrier, but not the insulation in these locations. If we don't assume insulation behind the air barrier, then each of these items becomes a builder sign off. Now that Grade I insulation is part of the ES standard, it becomes more of a challenge to assume compliant insulation behind the air barrier. If, on the other hand, we insist on seeing the insulation, then it becomes a second trip to see the air barrier before finishes are installed. For cantilevered floors and double walls our Raters will have to start insisting that one of the air barriers is left off for insulation inspection, and that becomes a small sequencing headache for the builder. All this illustrates the need to have a program allowing more than 2 site visits.

- 4.3.5e- Studs are spaced at 16" for 2 x 4 framing and at 24" for 2 x 6 framing unless construction documents specify otherwise,

Please define "Construction Documents"

- Footnote 6- Examples of necessary supports for permanent contact include staves for batt insulation or netting for blown-in insulation.

How can one achieve Grade I if there is no air barrier in contact with the insulation on the cold side? Allowing staves or netting is allowing for no air barrier on cold side which means it can't be Grade I and thus fails the Grade I requirement. This needs some clarification, please.

C) HVAC System Quality Installation Contractor checklist

- Footnote 6- ...Systems that are not AHRI rated may be used, as long as a copy



ENERGY STAR New Homes Proposed Guidelines Comment Form

of OEM-provided catalog data indicating acceptable combination selection and performance data is provided.

Please confirm this change from the current ENERGY STAR standard which requires AHRI rated systems to qualify for the ENERGY STAR label.

D) HVAC System Quality Installation Rater checklist

- 7.2- Air inlets > 4ft above grade in Climate Zones 4-8

This will be difficult to accomplish without putting a duct in an insulated wall (which is prohibited in 2.6- "Ducts not installed in insulated walls")

E) Water Management System Builder Checklist

- 3.1 Cement board or equivalent moisture-resistant backing material installed behind tub and shower enclosures

This will require mention or call out in air barrier text of Thermal Enclosure Checklist

F) Water Management System Rater Checklist

- Items potentially difficult for Rater to verify within two standard site visits:

2.1 Patio slabs, walks, and driveways sloped > 0.25 in. per ft. away from home to edge of surface or 10 ft., whichever is less

2.2 Final grade sloped > 0.5 in. per ft. away from home for > 10 ft. and back-fill tamped to prevent settling

3.2 Fully sealed continuous drainage plane behind exterior cladding that laps over flashing in Section 3.16

4.1 Gutters and downspouts empty to lateral piping that deposits water on sloping finish grade \geq 5 ft. from foundation or to underground catchment system > 10 ft. from foundation

- 2.3- Interior surface of below-grade walls not finished with continuous vapor barrier

This checklist item could be a problem for fire-rated and TBIC compliant assemblies.

- 5.3. Building materials with visible signs of water damage or mold not installed at time of inspections.

This will be difficult to assess with the house that has house wrap, roofing paper and insulation installed.



ENERGY STAR New Homes Proposed Guidelines Comment Form

New York State appreciates the opportunity to comment on the revised ENERGY STAR Homes v.3 specification. The proposed standard will undoubtedly have a positive impact on the level of energy efficiency in homes throughout the country for those homes that build to the standard. However, New York programs and builders associations will continue to assess the cost effectiveness of implementing the new standard while keeping in mind the anticipated benefits of the program for builders and homeowners. We appreciate the opportunity to share our comments and look forward to your response to the questions posed in this letter.

Thank you for considering our comments.

Sincerely,

Michael Watt for LIBI

Michael Deering for LIPA

Philip LaRocque for NYSBA

Karen Villeneuve for NYSERDA



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Littlewolf Architecture

Respondent Last Name: Vlcek

Respondent First Name: Christopher

Comments: General, Marketing

1. Energy Star guidelines have changed over the years, yet designation/certification has remained the same, "Energy Star Home". Presumably the bar is raised with each new guideline. I propose designating the 'guideline year' as an integral part of the certification/designation. All homes certified under the 2010 guidelines would be labeled "Energy Star 2010 Home" and so forth.
2. With the Energy Star Home designation there is little emphasis on the HERS rating. I propose that the HERS rating be emphasized by including the figure on the sticker designation and other materials, in the same way that energy use is labeled on Energy Star appliances. Marketing materials, guidelines and instructions should encourage the goal of decreasing the HERS ratings for new homes far below the minimum Energy Star threshold, and what that means in terms of energy cost. While a grade could be added such as Energy Star A,B,C,D, I think that would diminish the brand. "Energy Star Home 2010. HERS Index 63". Should be enough. Then marketing and consumer demand can dictate the value of that "63".
3. Hand in hand with the point above, would be the national requirement for a HERS rating to be indicated on all new homes, and eventually for all homes upon sale. This might be beyond the current scope of the Energy Star program. However it should be a mission goal to help raise consumer awareness and drive policy at the national and state levels.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:MaGrann Associates

Respondent Last Name:McCleery

Respondent First Name: Douglas

Comments:MaGrann Associates welcomes the opportunity to participate in the second round of comments on the proposed ENERGY STAR 2011 Guidelines. As we previously stated in our first round of comments, we support the EPA's publicly stated goal of "transforming the housing industry to build homes with less environmental impact and increased homeowner benefits, including greater affordability through lower energy bills along with improved comfort, indoor air quality, and durability." We also continue to express our concerns that the expanding scope of the ENERGY STAR Homes standard will overwhelm the residential home building industry. As long time advocates of ENERGY STAR Homes, we do not wish to see the program collapse under the weight of the 2011 revisions and acknowledge that the EPA's latest round of modifications has begun to address this concern.

Our comments and questions regarding the revised 11/10/2009 Draft of the ENERGY STAR Program Requirements and associated inspection checklists are as follows:

We disagree with the EPA's response (See EPA Responses to ENERGY STAR 2011 Qualified New Homes Comments #78) to our request that the use of conditioned floor area (CFA) be replaced with finished floor area (FFA) as the basis for the Size Adjustment Factor (SAF) to avoid the unintended result of discouraging the use of the conditioned basement (unfinished, but within the thermal envelope of the home). Based on our experience, the incremental heating and cooling loads associated with conditioning a basement by bringing the basement mechanical equipment and ducts inside the thermal envelope is small or non-existent. We urge you to reconsider the policy. We are willing to provide documentation in the form of HVAC load calculations and rating files to support our argument.

It is our sincere desire that the 2011 ENERGY STAR HERS Index Target Procedure become unnecessary for raters to implement manually and strongly suggest that the implementation of the 2011 requirements not begin until rating software is capable of providing the necessary HERS Target Index calculations. We have worked through the process as documented and found it to be excessively time consuming.

Thermal Enclosure System Rater Checklist

Items 2.1 and 2.2 - It is our interpretation that under the performance path the requirement for 2009 IECC insulation levels based on a U factor approach according to Table 402.1.3 of the IECC would allow variations in insulation values within a building system, i.e. wall system, provided the overall system complies with the U factor requirement.

Item 2.3 - It is our interpretation that when Grade II insulation is installed in walls with insulated sheathing, the provisions for structural sheathing outlined in Footnote 9 would apply.

Item 2.3 - The required level of continuous insulation with Grade II wall insulation (R-6 for zones 4 to 6 as per Footnote 4) exceeds the level of continuous insulation required for these climate zones by 2009 IECC (R-5 as per 2009 IECC Table 402.1.1). To align the ENERGY STAR requirement with that of the IECC, we suggest that the requirement for continuous insulation in footnote 4 be reduced to R-5 for Zones 4 to 6.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Item 5.4 - Footnote 17 prohibits the use of construction adhesive to seal sheetrock to the top plate at all attic/wall interfaces. This prohibition makes an already difficult air sealing situation tougher. Unless blown insulation is used for attic spaces (leaving the attic side accessible after sheetrock), these areas must be sealed at the time of drywall installation. The material typically used to seal sheetrock at the time of installation is construction adhesive. Please provide further explanation of how these areas are to be sealed (and how the air sealing is to be verified).

HVAC System Contractor Checklist

Item 3.14 – It appears that the “>” symbol should be “<”. A properly sized system with a SHR higher than the Design SHR will actually have a lower latent heat removal capacity than is required. A lower SHR translates into a higher latent capacity.

Item 3.16 – This item indicates that cooling system sizing should be determined by comparing total cooling capacity (Value #3.12) to the total cooling load (Value #2.7). This methodology is not consistent with ACCA Manual S, which indicates that sensible cooling capacity (Value #3.11) should be compared with sensible heat gain (Value #2.6).

HVAC System Rater Checklist

Items 2.7, 5.1, 8.1 and 8.2 require measurement of supply air flow rate (or alternatively pressure difference), ventilation air flow rate, kitchen exhaust flow rate and bath exhaust flow rate. In a home with 4 bedrooms and 2 ½ baths could require as many as ten different readings, using equipment not typically part of the rater’s arsenal. Some of these measurements are not easily taken. As examples, measuring the flow rate from a kitchen exhaust hood requires the use of a flow hood with a special jig to connect the two. Ventilation systems that are connected directly to the HVAC distribution systems may need to be measured at the air intake and exhaust locations. If these are located on the roof or a gable end wall, they are not accessible to a rater who does not carry a large extension ladder.

Section 4 - Including balanced ventilation ducts in duct leakage testing will be difficult if ventilation terminations are inaccessible to the rater (see example above) and therefore cannot be blocked off. Can a provision be made for these systems?

Water Managed System Rater Checklist

Section 3 – The Water Managed Wall Assembly contains three items, each of which is likely to be concealed at the time of inspection by the rater. Individually, each item could be builder verified, but there is a maximum of two builder verified items on this checklist. It is our recommendation that one or more of these items be moved to the builder checklist or the maximum number of builder verified items be increased to three.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Mastercraft Homes Inc

Respondent Last Name:Etrheim

Respondent First Name: Mark

Comments:We all want better buildings and energy performance, but there has to be a consideration given to what a given requirement gains and what it costs. As a Performance Energy Star Builder, we work hard at balancing the two, they are usually on opposite sides.

Why not use a building cavity for a cold air return, particularly if the floor joist system is being used for the purpose? negative pressure in the joist space could result in drawing air from the out side, but if the rim/box sill is sprayed with foam from floor sheathing to top of foundation it will not occur. I would strongly urge you to allow the use of cavities with the requirement that they be sealed from any unconditioned space.

Cement board behind tub/shower enclosures is not clear to me but I assume that this is for ceramic tiled enclosures not one piece fiberglass/acrylic models. please clarify this. It would make no sense to put cement board behind the one piece units. Would not a sheathing product that is designed for ceramic installation over it also be acceptable (DenseShield?)

Duct work in insulated walls is a common practice in our area with a two story home. Open floor plans with large windows in the exterior walls often eliminate option for getting good ducting to the second story without using an outside wall. If we install a 3 1/2" duct in a 5 1/2" wall we use 2" of foam behind it, plus the one inch of foam sheathing gives us an R-value of 15 to 21 depending on the foam. The foam needs to be sealed to the edge of the framing to prevent short circuits, but this level of insulation is acceptable in 3-4 areas in the home. If the windows are an R-value of 3.5, surely R-15 is acceptable.

Final point is that the one size fits all approach is not good policy. If innovation can find better ways that cost less let the guys in the field use their creativity to do so. Office/engineers are the most knowledgeable, but the field guys see things that us office jockies simply cannot see sometimes.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Metropolitan Utilities District

Respondent Last Name:Stanek

Respondent First Name: Jason

Comments:EPA's requirement in Section 9.1 of the HVAC System Quality Installation Rater Checklist specifying all combustion appliances located within the home's pressure boundary to be either mechanically or direct-vented to the outdoors will place natural gas burning appliances at a significant disadvantage to electric appliances. Specifically, the water heating market will be drastically affected by encouraging home builders to install electric tank water heaters due to the reduced cost versus having to install either a power-vent or tankless natural gas water heater. Natural gas appliances are certified under the American National Standards Institute Z21 series. Installation of these appliances is also covered in major model codes including the National Fuel Gas Code (NFPA 54) and the International Fuel Gas Code (IFGC 2009). EPA has provided no documentation that the operation of combustion appliances inside a home is a health hazard or lead to inferior air quality.

Energy Star's goal is to "save home owners money and protect the environment through energy efficient products and practices." The requirement in Section 9.1 disregards this goal. In the service territory of the Metropolitan Utilities District, the average customer operating a 40-gallon natural gas tank water heater (0.59 EF) will consume 210 therms annually at a cost of \$158. A 40-gallon electric water heater (0.92 EF) would consume nearly twice the amount of energy on a source energy basis at a cost of \$302. Besides the obvious cost savings, a natural gas water heater will also reduce annual carbon dioxide emissions by 54% versus an electric water heater. Furthermore, electric water heaters are not a qualified energy star product, yet this requirement will incentivize builders to install electric water heaters.

As an advocate of Energy Star qualified appliances we recommend that the EPA eliminate section 9.1 of the HVAC System Quality Rater Checklist.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Mike's Custom Homes

Respondent Last Name:Marthaler

Respondent First Name: Mike

Comments: I am a Wisconsin Energy Star Homebuilder and attended the Sam Raskin presentation in Eau Claire, WI on December 8th 2009. The proposed changes to the Energy Star program may be going too far, too fast. I am concerned that many builders and homeowners will opt out of participating in the Energy Star program due to the new requirements and the additional costs associated with them. I would prefer to make cost effective changes to the program and promote more participation thus raising the energy standards to a much higher percentage of new homes built. Regarding a specific item in the draft, I am concerned about the truss heel requirement that states the heel must be at least 75% of the attic insulation thickness. I typically blown a R-50 in my attics, depending on insulation type the thickness will be between 14" and 20" which will require a heel between 10-1/2" and 15". In many cases (depending on roof pitch) a heel height over 12" will require a soffit return higher than the wall the truss is sitting on, thus creating a significant cost increase, including additional labor to flush trusses with wall plates, extend up wall sheathing and additional siding. Also, the appearance of a home with an extra tall heel may not be aesthetically pleasing. My suggestion is to keep the 75% guideline but not require a heel higher than 12".



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: MKREBS

Respondent Last Name: Krebs

Respondent First Name: Mark

Comments:

Of primary concern is that the EPA has generally not replied to specific comments or commenters except for the likes of RESNET. At best, this can be viewed as favoritism. As my last comments were not specifically addressed, they will be reiterated and expanded upon as necessary to update them.

As previously commented upon, The EPA is giving electric resistance water heating heating a head start when it should be penalized. This concern also relates to the fact that, unlike other ENERGY STAR programs, these are site based. Site based energy efficiency programs, such as this, disinform (if not defraud) consumers and degrade the environment. To further explain why this program should not be site-based, please refer to a letter from Cindy Jacobs for Jean Lupinacci, Chief ENERGY STAR Commercial & Industrial Buildings Branch written to Darren Meyers, Technical Director, Energy Programs, International Code Council dated December 15th, 2009. We would attach these comments, but this comment submission format does not allow it. It is also pertinent that other technical organizations such as ASHRAE are beginning to realize the inappropriateness of site-based energy efficiency metrics as referenced by the following:
http://www.ashrae.org/doclib/20080714_abelreport_july2008.pdf (page 2, Key Recommendation # 9)

While the EPA did not respond directly to my concern about . EPA's Proposed Quality Checklists for indoor air quality number 7.1 that specified "no ventless combustion appliances installed, except for kitchen cooking devices," the EPA did respond by elimination of this requirement. ban of "ventless combustion" appliances

Likewise, while not responding specifically addressing previous comments regarding overall cost-effectiveness, the EPA did respond in general. It did so by eliminating CO alarm requirements and changing furnace minimum efficiency requirements from 92% to 90% AFUE. While we commend these changes, they may still be insufficient if the end result significantly increases the costs of home ownership.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: National Association of Home Builders

Respondent Last Name: Dence

Respondent First Name: Chip

Comments:

Dear Mr. Rashkin:

On behalf of the National Association of Home Builders (NAHB), I am pleased to submit the following comments on the ENERGY STAR for Qualified New Homes- version 3. NAHB represents more than 200,000 member firms involved in home building, remodeling, multifamily construction, property management, housing finance, product manufacturing and other aspects of residential and light commercial construction. Since 1942, NAHB has served its members, the housing industry, and the public at large. During that time, it has developed a long history of promoting sustainability and seeking cost-effective ways to help families access affordable and energy-efficient housing.

NAHB has been a strong supporter of ENERGY STAR for Homes for many years, and we support EPA's overarching philosophical approach to the proposed guidelines as they strive to achieve greater residential energy performance through sound building science and practical building techniques. As a voluntary above code program, ENERGY STAR has the difficult task of integrating marked energy efficiency increases within a program that must be at the same time credible, universal and marketable. It is with this focus in mind that we highlight what are significant obstacles to keeping ENERGY STAR on track to reaching the next million homes milestone as quickly as possible.

Over the past two decades, NAHB and its members have paved the way by designing and disseminating green building resources for the residential construction, land development and remodeling industries so members could begin to incorporate those sustainable practices in their daily routines. As a result, attention to energy efficiency, water and resource conservation, sustainable or recycled products, and indoor air quality are increasingly part of the everyday process of today's home building. NAHB and its members have developed a significant amount of experience and expertise in this area, that we believe can provide a blueprint for success.

The exploding market for sustainable, environmentally friendly and recycled building products, along with the greater availability of educational opportunities, has allowed NAHB to provide the home-buying public with a nationally-recognizable standard definition of green building and related programs and information addressing education, recognition, and market awareness. As you know, NAHBGreen offers many resources and tools to help builders, remodelers, home building associations, and homeowners learn how to build green, and the benefits of doing so.

Recognizing the value of and need for a nationally-recognizable standard definition of green building, NAHB partnered with the International Code Council (ICC) in 2007 to develop a third-party, voluntary, consensus-based residential green building standard recognized and approved by the American National Standards Institute (ANSI). The result: the ICC 700 National Green Building Standard, which addresses the construction and renovation of single- and multifamily buildings as well as site development techniques for environmentally responsible residential subdivisions.

Importantly, because the standard was developed in cooperation with ICC, which represents residential building code officials, and the National Green Building Standard consensus committee, which included a



ENERGY STAR New Homes Proposed Guidelines Comment Form

diverse group of industry interests that included the U.S. Department of Energy, the U.S. Environmental Protection Agency (EPA), the Navy, the U. S. Green Building Council, the Sustainable Buildings Industry Council and representatives from local green building programs around the nation, the group's composition ensured the creation of a genuine consensus-based standard. Furthermore, ANSI's approval of the ICC 700 National Green Building Standard authenticates it as such.

In July, 2009 NAHB submitted our concerns about the ENERGY STAR for Qualified New Homes: Version 3 during the first comment period over what we believed were serious flaws in the future administration of the programs compliance methodologies. Specifically, the addition of five new checklists that NAHB believed would prove to be too onerous to comply with, require too many additional man hours to record, and which were arguably outside the scope of a typical raters capabilities, and outside the scope of an energy efficiency program. After further review of proposed ENERGY STAR program changes and conversations with you, NAHB has a better understanding of the rationale behind certain additions to the program requirements and appreciation of the training EPA is planning to assist raters with the proposed new requirements. However, NAHB is concerned that with the additional proposed requirements, ENERGY STAR is continuing to transform into a more complicated Green Building program that promises to contribute to marketplace confusion resulting from overlapping and/or conflicting green building standards and rating systems. Ideally, ENERGY STAR program requirements would, as the name suggests, focus solely on the energy performance of a building.

As mentioned in previous comments, the ANSI approved ICC 700 National Green Building Standard already includes provisions in areas the current proposed ENERGY STAR program seeks to address that are not directly related to improving the energy efficiency of a home, such as indoor air quality and water managed construction. NAHB welcomes dialogue with EPA to discuss ways the ICC 700 and the ENERGY STAR program can better integrate in a more complementary fashion that would be less confusing to the home building and home buying public. Such an approach was taken with the recent launch of the DOE Builder's Challenge program. Information about that collaboration can be found at <http://www.nahbgreen.org/Guidelines/builderschallenge.aspx>

By working together to integrate ENERGY STAR with other existing programs, rather than increasing marketplace confusion by introducing yet another green program, NAHB feels EPA can have a more real and positive impact on the energy performance of the future built environment. NAHB believes there is strong potential for collaborative effort among our organizations that would begin to address the real barriers to the growth of energy efficient construction – barriers that are unrelated to operational or programmatic decisions employed by NAHB, EPA and/or other organizations that seek to encourage energy efficiency.

Unfortunately, at this point there are significant external impediments to the construction of all types of housing - energy efficient or otherwise. These challenges include access to financing, and marketplace price sensitivity resulting from unprecedented numbers of foreclosed properties and unsold inventory.

Anecdotal evidence from NAHB membership confirms that builders face considerable challenges in financing, appraising and selling highly efficient and/or "green" homes if the upgrades and inspections needed to qualify the homes as such cause the home to be markedly more expensive than a "comparable" home that does not include such performance enhancing upgrades. (While the association appreciates that truly comparable valuations between properties should consider the present and future value of performance enhancements, at this point it does not seem to be a common reality.) For these reasons, EPA must be sensitive to the real cost implications of participation in the ENERGY STAR program. By maintaining a focused goal of energy efficiency, EPA can keep the costs to participate in the program in check. Further, by collaborating with other programs, such as the NAHBGreen program using the ICC 700, both programs can achieve better growth without unduly adding costs that could influence whether or not a home is ever built.



ENERGY STAR New Homes Proposed Guidelines Comment Form

As a related issue, NAHB is concerned by what appears to be a gap in EPA's published estimated incremental cost increases for a new home to qualify in the ENERGY STAR program. The numbers fail to realize the indirect costs such as increased sales commission, additional construction financing costs, builder markup on upgrades, etc that would typically follow a hard construction cost increase of \$2000-\$4000. Unless the EPA has indeed adequately accounted for such costs, the agency should begin to publically acknowledge the true incremental cost for an ENERGY STAR qualified home using a figure that will be of most use to the building, lending and appraising communities as well as the home buying public – that is the expected true sales price. Failure to do so, only compounds difficulties for builders who must overcome financing challenges and meet marketplace expectations while remaining a profitable enterprise.

NAHB appreciates the time that you, Sam, have spent educating our members and staff about the proposed ENERGY STAR program and we look forward to continuing to work together in ways that will advance the goals of our respective organizations.

Sincerely,

Chip Dence
Chairman, Energy Subcommittee



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:National Propane Gas Association

Respondent Last Name:Elliott

Respondent First Name: Robert

Comments:

EPA states in their Responses to Energy Star 2011 Qualified New Home Comments, "While EPA appreciates the information provided by the National Propane Gas Association and may consider using alternative metrics in the future, it does not intend to consider alternative metrics for the 2011 guidelines, given that the process is nearly complete." NPGA believes that to move forward in an erroneous fashion, regardless of progress to date, is not sufficient justification for doing so.

Snapshot metrics such as "point-of-use" savings provide a skewed perspective of performance and are not endorsed by most government agencies. As previously stated, DOE recently released a study entitled, "Review of Site (Point-of-Use) and Full-Fuel-Cycle Measurement approaches to DOE/EERE Building Appliance Energy-Efficiency Standards", recommending the full-fuel-cycle analysis as the preferred approach for achieving our nation's energy goals.

Similarly, the National Institute of Standards and Technology (NIST) recognizes cradle to grave analysis or "science-based life-cycle assessment approach" for measuring environmental performance of building products. BEES (Building for Environmental and Economic Sustainability) was developed by the National Institute of Standards and Technology (NIST) Building and Fire Research Laboratory with support from the U.S. EPA Environmentally Preferable Purchasing Program and the White House-sponsored Partnership for Advancing Technology in Housing (PATH). BEES analyzes all stages in the life of a product: raw material acquisition, manufacture, transportation, installation, use, and recycling and waste management. NPGA believes the full-fuel-cycle analysis is analogous with EPA's position of analyzing building products with a complete environmental life cycle.

Further, EPA has recently gone on record endorsing source energy, full-fuel-cycle, for calculating Energy Star performance for buildings. Jean Lupinancci, Chief, Energy Star Commercial and Industrial Buildings Outreach of the U.S. Environmental Protection Agency wrote on December 15, 2009 to the International Code Council, "The use of source energy is the most equitable approach to assessing and comparing energy efficiency of buildings. The use of site energy provides an incentive to use electricity; in contrast, use of source energy will not provide an incentive for any particular type of fuel, but will provide the right signals to the marketplace to encourage real improvements in energy efficiency and consequent reductions in carbon emissions." The full letter is attached for your reference.

NPGA strongly urges EPA to consider wholesale changes to the currently proposed metrics and use full-fuel-cycle energy analysis for their proposed guidelines. NPGA believes that EPA's current position to not recognize full-fuel-cycle analysis is internally inconsistent within EPA and produces a bias toward some fuel sources over others. NPGA is concerned that absent these changes to the guidelines local municipalities and states could easily adopt EPA's voluntary guidelines thereby enforcing flawed and inconsistent logic upon a larger group of affected stakeholders.



ENERGY STAR New Homes Proposed Guidelines Comment Form



December 15, 2009

Darren B. Meyers, PE, CEM, GBE
Technical Director - Energy Programs
Architectural & Engineering Services
International Code Council, Inc.
4051 W. Flossmoor Rd.,
Country Club Hills, IL 60478

Dear Mr. Meyers:

As the Sustainable Building Technology Committee finalizes its recommendations for the International Green Construction Code (IgCC), EPA urges you to make source energy the basis for energy compliance, as the Committee recommended in its first version released in August of this year.

The use of source energy is the most equitable approach to assessing and comparing the energy efficiency of buildings. The use of site energy provides an incentive to use electricity; in contrast, use of source energy will not provide an incentive for any particular type of fuel, but will provide the right signals to the marketplace to encourage real improvements in energy efficiency and consequent reductions in carbon emissions.

All buildings require heat and electricity to operate. These are both secondary forms of energy, which were derived from an original fuel source. The site energy at any specific building may be delivered as either primary energy (e.g. fuel oil or natural gas) or secondary energy (e.g. heat or electricity). A unit of primary and a unit of secondary energy consumed at the site are not directly comparable because one represents a raw fuel while the other represents a converted fuel. Therefore, the only way to assess the relative efficiencies of buildings with varying proportions of primary and secondary energy consumption is to convert these two types of energy into equivalent units of raw fuel consumed to generate that one unit of energy consumed on-site. Using source energy achieves this equivalency.

For this reason, EPA uses source energy in calculating the ENERGY STAR performance rating for buildings, designed to improve building efficiency and reduce carbon emissions nationally. In order for it to be effective, it is important that the proposed IgCC be based on source energy.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Thank you for your consideration of this important issue. I would appreciate your sending this letter to the entire Sustainable Building Technology Committee. If you have any questions, please contact Cindy Jacobs of EPA at (202) 343-9045.

Sincerely,

for 

Jean Lupinacci
Chief, ENERGY STAR Commercial and Industrial Buildings Branch
Climate Protection Partnerships Division
Office of Air and Radiation
U.S. Environmental Protection Agency



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Nature's Choice Spray Foam Insulation Co. & Hybrid Homes

Respondent Last Name:Pinto

Respondent First Name: Michael

Comments:I would say that the majority of Architects are using REScheck, not REMdesign. Without REMdesign the house is sure to start off on the wrong foot. Why wouldn't Architects simply be forced to use Rem design considering the simple truth that REScheck is antiquated. I have seen countless homeowners with good intentions, want to build their homes to the energy star standards and they cannot because the architectural drawings are lacking the detailed information needed to move forward. Then the homeowner ends up frustrated and confused because the Architect and the builders are not familiar with the computer programs or energystar standards enough to go back and recalculate either because of ignorance, time, or lack of interest... This is a cycle that we see at our company everyday. The other benefit of using a product like REMdesign is that the Architect could actually start to spec tonage and btus and whole house energy systems and air quality systems, rather than (HVAC 1st floor and 2nd floor, gas fired heatw/ac). This is the fundamental flaw with residential building to date. We at Natures's Choice Spray Foam Insulation Co. spray Icynene spray foam which is one of the most cost effective ways to conserve energy and by insulating with our product a home owner can begin a cascade of savings on the rest of their build. But it has to be planned from the get go. Usually it is an afterthought. The other issue is the mis-information about foam insulation products. Energy star should produce a consumers guide for architects and homeowners understanding what products do and don't do, where they can be installed as per code and product specs, and dispell the myths that are being spread by slick salesman. And finally there should be a foam insulation guide (pertaining to comparrisons to batt, and some sort of true R-value. As we all know R-value does not calculate air infiltration and that is the so-what to spray foam insulation. With out a new rating system or a comparritive chart in the codes we will continue to be paddleing against the current.)to the regular building code so every job does not need a special letter to prove that Icynene spray foam is safe and effective to install in ones home. The building inspectors need education too. I find that we are most often educating them and it can be an uphill battle at times.

I want to thank you for reading my comments. I am very familiar with building energy efficient home and I believe the programs put in place are well intentioned. I also believe we have put the cart before the horse on some rebates and incentives...ie geothermal and solar... they are getting 30% tax incentives by the govt. Well these items are expensive and need to be maintained and replaced at some point.... spray foam insulation does not get the same incentives and it instantly reduces heating and cooling loads by 40 to 60 percent, and then the costs for solar and geothermal would go down too. So i think there needs be be more attention paid to insulate first calculate loads second and then homeowners and the environment will really benefit. thanks again for listening. Michael Pinto - Nature's Choice Spray Foam insulation Co and Hybrid Homes.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: NEEA, WSU - Washington Provider, NCAT - Montana Provider, ODOE - Oregon Provider, Advanced Energy - Northwest ENERGY STAR Homes Program Technical Advisor/Trainer

Respondent Last Name: Brink, Gordon, Seymour, Alexander, Coulter

Respondent First Name: Anne, Andy, Alan, Buzz, Jonathan

Comments:

The Northwest plans to reach a critically necessary market share in 2010 of 15%. A market share of 15 to 20% allows us to more effectively increase ENERGY STAR Homes brand awareness, gain investment from building industry partners to support program training and marketing, influence MLS and gain important data on increased value of ENERGY STAR homes vs. standard construction. Results of webinars with builders, utilities and verifiers leaves us with concern that the proposed 2011 requirements may substantially erode this share. We request that the EPA carefully consider how to simplify the proposed requirements for 2011 with the intention of augmenting them in future years.

Water management checklist - The Northwest strongly urges the EPA to allow the water management checklist to be optional for version 3 of the specifications, and postpone them as mandatory requirements until version 4. Webinars with utilities, verifiers and builders yielded consistent feedback that this checklist is unrelated to gains in energy efficiency. Verifiers/Raters continue to have concerns regarding liability issues associated with moisture damage. The perceived value of the checklist is low to stakeholders versus the added cost and complexity it creates. Overall we would like to see some simplification of the program and allowing the water management checklist to be optional would streamline the new program requirements.

HVAC Checklist - We agree in the value of commissioning HVAC equipment and national ACCA standards provide a reasonable approach. However, research conducted by NEEA, the Energy Trust of Oregon, Bonneville Power Administration and the Northwest Power and Conservation Council has provided information in the Northwest for the most effective commissioning standards. The report Analysis of Heat Pump Installation Practices and Performance can be found at www.nwalliance.org/research/reports/169.pdf. These standards are supported by Bonneville Power and the utilities of the Northwest for new construction and retrofit programs, and have been enforced by the Northwest ENERGY STAR program for 6 years. We ask that ENERGY STAR allow for regional commissioning requirements that are supported by local infrastructure and based on sound research.

Airhandler placement - Feedback from webinars with builders, verifiers/raters and utilities is consistent. This requirement creates substantial barriers to participation in our region. Preliminary conversations with builders indicate that an airtight closet for air handlers in garages may cost as much as \$500. We are concerned that this requirement may push air handlers into attics and unconditioned crawl spaces reducing servicability and creating new indoor air quality issues.

Heat pump HSPF - The Northwest has reviewed the new requirement for the heatpump efficiencies in climate zones 5 and 6, and recommends that an 8.5 hspf be allowed when auxillary heat outdoor temperature lockout is set at 35 and the heat pump is properly sized. This control standard results in approximately 15% savings according to the heat pump study mentioned above. 9.25 and 9.5 HSPF ducted heatpumps are not readily available in the Northwest. In addition, we question the need for a 14.5 SEER heatpump when the air conditioning standard is set at 13 SEER for climates zones 4 through 8. As cooling loads are relatively light a 14 SEER requirement does not provide significant savings in these zones. We recommend being consistent with the air conditioning requirement at 13 SEER. ENERGY STAR New Homes Proposed Guidelines Comment Form 2



ENERGY STAR New Homes Proposed Guidelines Comment Form

Advanced framing - We request the EPA support consumer education on advanced framing benefits. Home buyers are often resistant to 24" oc studs as they view this as skimping on structural support. Information from a recognized, trusted source can help alleviate this barrier.

Rigid insulation requirement of R6 - We recommend an R5 rigid insulation qualify for grade 2 insulation installation. An R5 requirement allows for use of a one-inch extruded polystyrene, a readily available and affordable product. An R6 requirement pushes the builder to a polyisocyanurate of R7. This product is more expensive yet does not provide a significant increase in performance.

15% glazing - We are concerned that the 15% glazing allowance penalizes small homes. We recommend an allowance for small homes be considered to alleviate this penalty.

Cost effectiveness - We are concerned about the cost effectiveness of the new ENERGY STAR specification. Currently the ENERGY STAR specification cost estimates are approximately \$1,500. Estimated costs for the new specification in the Northwest climate zones is in the range of \$3,600 to \$5,000. This jump in costs added to a potential decline in participation will likely effect program cost effectiveness substantially. We are currently evaluating this internally but results will not be available by the end of the comment period.

Crawl space detail - The detail requiring 6 mil poly to be sealed at the overlapping seams and mechanically fastened to the crawl space wall is an addition that will require new processes for the builder and the value of this requirement is not understood. Also, the effectiveness of glues that seal the seams and the difficulty of effectively, mechanically fastening the poly to the wall are in question. We believe that 6 mil poly performs very well as a vapor barrier (to keep out moisture) and helps with building durability, but does not function well as an air barrier (to keep out soil gases) to improve indoor air quality. Therefore, we recommend the EPA eliminate the requirements of sealing the seams and mechanical fastening to help simplify program requirements and ensure the specifications are of value to the consumer and the builder.

We appreciate the time and effort the EPA has made in making this process thorough and open. Thank you for the opportunity to comment.

Anne Brink - NEEA
Buzz Alexander - NCAT
Andy Gordon - WSU Energy Extension
Alan Seymour - ODOE
Jonathan Coulter - Advance Energy



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Neer Development Co., Inc.

Respondent Last Name: Neer

Respondent First Name: Terry G.

Comments: We will not build Energy Star rated homes under the new proposed guidelines, specifically the following

Minimum heat pump standard level

Lower Duct leakage rate

Rigid Insulation of R-6 or Grade I Insulation

R-6 duct insulation on all ducts - We would consider installing these on supply

Raised heel truss

While I know it is important to build good energy efficient homes, we have never had the first buyer ask for or about these standards so it was not a deal maker or breaker for us.

While we will still build to the present Energy Star Standards, we will just market our Condo's as "Energy Efficient Homes"



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Newport Ventures

Respondent Last Name:Moore

Respondent First Name: Mike

Comments:First, we would like to thank EPA for the excellent job in addressing our comments that were submitted in the first round. We believe that the current draft has significantly improved from the previous, and we appreciate the opportunity to submit these comments for the second period.

HVAC System Quality Installation Contractor Checklist

1.1 Currently, ASHRAE 62.2-2010 is still in development, and has not been released for public review in its final form. Because the ASHRAE 62.2 committee is still reviewing proposed changes, and has not made final determinations on the composition of ASHRAE 62.2-2010, Energy Star 2011 should reference ASHRAE 62.2-2007 instead. Referencing 62.2-2010 is preemptive at this point.

HVAC System Quality Installation Rater Checklist

8.0 Ventilation & Exhaust Fan Ratings (Exemptions for HVAC and Remote-Mounted Fans)

A) Local exhaust fans should not be required to be Energy Star qualified unless they are used as a component of a whole house mechanical ventilation system. When used as a component of a whole house ventilation system, local exhaust fans will either operate continuously or sufficiently often to warrant requiring them to be Energy Star qualified. However, when used for local exhaust only, the short duty cycles and associated energy use and costs of exhaust fans are too miniscule to justify requiring that they be Energy Star qualified. For example, the table below shows the energy savings and simple payback of an Energy Star exhaust fan when operating continuously as a component of a whole house mechanical ventilation system versus when used in a standard bathroom, assuming 30 minutes of run time per day. Note that when used 30 minutes a day, an Energy Star qualified local exhaust fan will save only about 14 kWh per year - insufficient to justify requiring them either from an energy or an economics perspective.

	Energy Star Fan	Entry Level Fan
Example Product	Broan QTXE050	NuTone 696N
Exhaust Rate (cfm)	50	50
Initial Cost	\$103.13	\$22.90
Power Draw (Watts)	19.7	99
Annual Energy Consumed, kWh (continuous;30min/day)	173; 4	867; 18
Annual Operational Cost (\$)	\$19.60; \$0.41	\$98.52; \$2.05
Simple Payback, years (continuous; 30min/day)	1.0; 48.9	N/A
Annual CO2 Savings (pounds)	941; 19	N/A

Key assumptions include: U.S. average electricity rate of \$0.1136/kWh (source: 2008 U.S. DOE EIA), retail costs of bath fans (www.iaqsource.com), 1.336 lbs CO2/kWh (source: U.S. DOE EIA).

Further, requiring local exhaust fans to be Energy Star qualified could have a negative effect. Because Energy Star fans are often very quiet (often much less than 1 sone), they may not be audible to a home owner. If home owners cannot hear an exhaust fan operating, they do not know whether it is on or off. This can result in



ENERGY STAR New Homes Proposed Guidelines Comment Form

over-ventilation of a space which wastes a significant amount of energy. For example, suppose a home has a central fan integrated whole house ventilation system and also has three Energy Star bath fans. This home could be providing an extra 150 cfm of ventilation air, which equates to roughly an extra 0.5 ACH, while consuming about 60 Watts across the three fans, in addition to the large fan watt draw demanded by the central fan integrated system.

B) To optimize affordability and energy efficiency, fan efficacy requirements should be applied to fans used as a component of a whole house mechanical ventilation system. These fans have higher duty cycles than local exhaust fans, and specification of higher efficacy fans in these areas will result in greater energy savings and faster return on investment for home buyers. Further, fan efficacy requirements should not be limited to exhaust fans, but also should be required of supply fans, especially central fan integrated units (CFIs). For CFI systems that are used to provide whole house mechanical ventilation in compliance with ASHRAE 62.2, the central blower provides ventilation air through an outdoor air duct connected to the return plenum of the central HVAC duct system. These blowers typically draw about 180 Watts/ton of cooling capacity (Wilcox et al. 2006. Furnace Fan Watt Draw and Air Flow in Cooling and Air Distribution Modes. 2008 California Building Energy Efficiency Standards. Prepared for the California Energy Commission.) So, for a typical 3.5 ton system, running the central blower to provide mechanical ventilation air requires 639 Watts of power. When a home is using its central blower for space heating or cooling, there is no extra fan energy being used for providing the required mechanical ventilation, but when there is no call for heating or cooling (which is often the case for well insulated and sealed homes in temperate climates, especially in "shoulder" seasons), the fan energy penalty is substantial. In fact, for a 2200 sqft 4 bedroom home that is providing ventilation in compliance with ASHRAE 62.2, an Energy Star exhaust fan can have a fan efficacy that is a factor of 30 greater than that of a CFI system (assumes 59.5 cfm of ventilation air required, exhaust fan supplies ventilation air at 2.8 cfm/Watt, and CFI system supplies 59.5 cfm of ventilation air while drawing 639 Watts of power).

In October of 2009, at the 2012 International Code Council public hearings, the International Residential Code Plumbing and Mechanical Committee approved a proposal to require whole house mechanical ventilation for all homes with air infiltration rates less than or equal to 5 ACH 50 (see proposal M156, Parts 1-3 at <http://www.iccsafe.org/cs/codes/Documents/2009-10cycle/ProposedChanges/errata.pdf>). At the same hearings, the International Energy Conservation Code committee recognized the need to introduce requirements for whole house MV fan efficacy levels, and approved a proposal that requires exhaust fans to meet Energy Star efficacy requirements and for CFI systems to use a fan that is powered by an electronically commutated motor (ECM) (see proposal EC99 at <http://www.iccsafe.org/cs/codes/Documents/2009-10cycle/ProposedChanges/IECC.pdf>). ECMs for residential blowers are now offered by many manufacturers and have demonstrated over 70% reduction in annual fan energy use versus a permanent split capacitor motor when operated continuously ("Effects of ECPM Furnace Motors on Electricity and Gas Use", Canada Mortgage and Housing Corporation, Technical Series 05-101, June 2005, <https://www03.cmhc-schl.gc.ca/b2c/b2c/mimes/pdf/63818.pdf>).

According to a recent peer reviewed article on the subject, the cost of ECMs is "between \$150 and \$250 over that of a standard motor, a cost that is typically marked up and passed on to the buyer. However, increased energy savings over the life of the project, as shown below, easily offset this initial capital cost" (Kenty, K. 2007. Use of electronically commutated motors (ECMs) in air terminal units. ASHRAE Transactions, 113(1), 334-341). Based on the affordability of this measure and the energy savings potential, we propose that EPA requires that where whole-house mechanical ventilation fans are integral to HVAC equipment, they shall be powered by an electronically commutated motor and that where local exhaust fans are used as a component of a whole house mechanical ventilation system, that they be Energy Star qualified.



ENERGY STAR New Homes Proposed Guidelines Comment Form

We believe that HRVs and ERVs should (at least at this point) be excluded from the efficacy requirements of whole house ventilation fans because of their offsetting energy benefits achieved through pre-conditioning ventilation air.

C) Could EPA please clarify why HVAC air handlers are exempt from the some requirements of this section if these handlers are an integral part of a whole house mechanical ventilation system? If we know that consumers register complaints about MV systems that operate over 3 zones, and if the HVAC air handler is not remotely located, why is EPA exempting these systems from meeting consumer requirements?

D) We recommend that the flow rate above which intermittent fans are exempted from some requirements should be 500 cfm instead of 400 cfm, based on the fact that Energy Star qualifies exhaust fans to 500 cfm.

HVAC System Quality Installation Rater Checklist

2.6 Ducts not installed in insulated walls

Currently, this section states "Ducts not installed in insulated walls". Because this language applies to exhaust ducts as well, we recommend that it be changed to allow for exhaust ducts to be routed perpendicularly through exterior insulated walls for the purpose of exhausting to the exterior.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: NJ HAND, Inc.

Respondent Last Name: Landman

Respondent First Name: Shalom

Comments: As a Non-Profit 501 (c) (3) Affordable Housing developer who has successfully incorporated Energy Star in its homes to date, we have significant concern with the EPA's response to the first round of comments concerning affordable housing development. In its response, the EPA admits, "... it's true that affordable housing developers are challenged with maximizing units while minimizing costs," and further recognizes, "competitive funding sources (e.g., low income housing tax credit programs, HUD grant program) are increasingly incorporating stringent energy efficiency requirements into their criteria." However, the conclusion drawn from this in the EPA's response was only that affordable housing development's participation in Energy Star will therefore not decrease.

This completely ignores the first fact mentioned: that non-profit affordable housing developers, especially developers of for-sale homes, are up against "set-in-stone" sales price maximums and relatively little available funding. As such, additional costs of construction, ESPECIALLY if these costs are a requirement of obtaining these funds, have the potential of making these affordable housing projects - desperately needed by many - entirely unfeasible. Unlike for-profit developers, we cannot simply dip into our profits to cover additional costs, nor can we raise sales prices to compensate as can market-rate developers.

In summary, it is the maximum allowable sales prices coupled with the competitive funding requirement that Energy Star be incorporated in order to receive funding that may cause not a decrease in participation in Energy Star, but rather, the potential death of affordable housing development projects built by those most serious about serving this market - the non-profits.

Therefore, we urge you to consider this danger in whatever requirements are ultimately adopted.

Thank you for your consideration.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:North Carolina Solar Center

Respondent Last Name:Stankus

Respondent First Name: Dona

Comments:These comments refer to the document: "DRAFT ENERGY STAR Qualified Homes 2011 National Program Requirements"

Page 1, Energy Star Performance Path, first sentence in Item #1: The meaning of the word "maximum" should be clarified. For example, it could be defined parenthetically as "highest numerical."

Page 1, Energy Star Performance Path, second paragraph in Item #2: It is clear that the purpose of this item is to encourage efficiency. Could there possibly be formula to allow smaller houses the ability to take advantage of this? It seems that this item might essentially encourage those who want to use renewables to build a slightly bigger home. This would seem to be counter-productive with regard to efficiency.

Page 2, Exhibit 1, ES Reference Design, Cooling Equipment for Mixed and Cold Climates: It seems as if this item is essentially mandating that the equipment meet code. Shouldn't Energy Star be mandating performance above code? For example, ES could mandate 14 SEER for Mixed/Cold climates and 15 SEER for Hot climates.

Page 2, Exhibit 1, ES Reference Design, Heating Equipment for Hot Climates: It seems that some COP numbers or HPSF equivalency numbers of 8.2 should be included here. By approving only Energy Star equipment for this item, it seems to make it more difficult to employ a ground source heat pump. See note 10 on page 4.

Page 2, Exhibit 1, ES Reference Design, Envelope, Windows Doors, Infiltration Rates: This item does not seem to adequately address the humidity issues of these climates.

Page 2, Exhibit 1, ES Reference Design, Envelope, Windows Doors, Thermal and IR performance requirements: A prescriptive method for passive solar design should be allowed, in order to allow higher Uvalues and SHGC values on the south-facing windows in homes where they are properly oriented, shaded and insulated. The NC Solar Center can assist in drafting this language.

Page 2, Exhibit 1, ES Reference Design, Combustion venting: In order to avoid any confusion regarding whether or not gas cook tops are included in this requirement, this document should reference item 20, page 12 in the Draft Inspection Checklist document.

Page 3, Exhibit 2, ES Mandatory Requirements for all Qualified Homes, Water Management System checklist: The purpose and benefits of adding this checklist as a requirement for Energy Star are unclear. These are primarily durability issues, and Energy Star should probably reconsider incorporating this aspect into the program.

This comment refers to the document: "Inspection Checklists, HVAC System Quality Installation Rater Notes, pg 12, #20)": Fireplaces should be included in the direct vent appliance requirement



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:NSPJ Architects

Respondent Last Name:Baldrige

Respondent First Name: Tim

Comments:There should be creative workarounds for the slab edge insulation requirement of the Thermal Bypass Checklist. In multifamily projects, the slab is typically a post-tensioned slab on grade, which prevents any internal vertical slab installation. And even though we are not in the deep south, termites are a problem. But, beyond that, an exterior slab edge insulation detail is oftentimes a bad detail that relates poorly to surrounding elements in the building. It is without question problematic. I feel that a Total UA analysis should be allowed by Energy Star, in the same way that it is allowed in the IECC. This allows designers to design to performance criteria and not have details mandated.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:NVR, Inc

Respondent Last Name:Phillips

Respondent First Name: Christine

Comments:1) The 2011 Energy Star HERS Index Target Procedure still does not clearly define the "Conditioned Floor Area". We strongly recommend this be the "Above Grade Conditioned Floor Area". Houses with basement foundations will be penalized by including the basement square footage in the overall conditioned floor area. An in-ground basement has different HVAC and envelope requirements than above grade walls. Most basements in the northern climates will be required to be conditioned if the water and sewer utilities are entering the home through the basement. The HERS Index can be further defined based on the foundation type to differentiate the HERS index for the same home of same above grade conditioned floor with basement, crawl, or slab foundations.

2) The HVAC System Quality Installation Contractor Checklist should be revised to reference selected sensible capacity (line 3.11) and design sensible capacity (line 2.6) not the total capacities. Per ACCA Manual S, the equipment selected must meet the design sensible load. Often we need to go to the next larger size equipment to achieve this. In some cases, the selected equipment total capacity may slightly exceed the 115% requirement.

3) The Thermal Enclosure System Rater Checklist now includes a Thermal Bridging section. This section provides an option for continuous rigid insulation with R values of R-3 for Zones 1 - 3, R-6 for Zones 4 - 6, and R-10 for Zones 7 and 8. These R values seem extreme for its intended purpose which is to eliminate thermal bridging at the studs. The required continuous insulation should also be dependent on the wall structure. If someone is building a 2x6 wall in Zone 5, then an R-3 continuous sheathing should be an adequate thermal break providing a wall envelope better than code. The R-6 value can be used if a 2x4 wall cavity is being constructed. An R-10 sheathing is 2" thick which would be cost prohibitive Zones 7 and 8 creating an 8" deep wall with the required 2x6 wall structure.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Oot Bros., Inc.

Respondent Last Name:Oot

Respondent First Name: Timothy J.

Comments:Dear Sirs,

Your cost savings /mortgage cost/cost of equipment takes into consideration the equipment will last the life of the mortgage. This is ridiculous

Will you please get some engineers that know the homebuilding industry and the factors of home ownership. The EnergyStar program is not the program it once was. I have been an EnergyStar Builder for over 10 years and still have yet to find assistance in the program.

These revisions to the system are not improvements to the program, but creating a more difficult program for the builder and rater to continue participation.

In New York State alone, the cost of a residential PV system has risen due to the state and federal requirements for assistance to almost 100% cost increase to pay for inspections and fees. A residential home with 2.4 Kwv can be completed outside of regulated/reimbursement for the \$16,000 to 19,000. range. The same system through NYSSRDA, even after credits and reimbursements costs over \$28000.

The system is out of control by the regulations. Make it simple to participate, and the builders will participate. Make it difficult and the program will fail.

Sincerely
Timothy J. Oot
Oot Bros., Inc.
Broker/Owner
Direct/Cell: 315-952-7113



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Optimal Building Systems, LLC

Respondent Last Name: Butler

Respondent First Name: David

Comments:

HVAC QI Contractor Checklist

- * Footnote 5 suggests that EPA will only allow flexibility on outdoor design temperatures if a given market has a microclimate that is different from the nearest climate reporting station. Is this the intent? If so, then supporting published climate data, as required by Footnote 5, is unlikely to be available.
- * Section 3.10 - 3.12: should add "at design conditions", e.g., "Selected Latent Capacity at Design Conditions" or use footnote. This is critical to demonstrate contractor has followed Manual S procedures and not simply used ARI conditions. ARI uses 80F entering dry bulb, 67F entering wet bulb. Manual S requires sensible and latent capacities to be obtained from manufacturer's expanded engineering data
- * Footnotes are out of sync beginning with #7 (charts show 8-10, with no 7)
- * Section 6.2 (d): accurate wet-bulb is difficult to measure on supply side as air may be near saturation, and is of no value (has no meaning) in the context of this check-out procedure
- * Section 6.2 (f),(h): wet-bulb measurement in heating mode is irrelevant

HVAC QI Rater Checklist

- * Section 4.3: UL-281 tape is an acceptable method to seal boots to walls, ceilings, floors



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Orchard at New Market, LLC

Respondent Last Name: Seawright

Respondent First Name: Steve

Comments: Gentlemen,

Perhaps my best response to your updated proposal for revision to Energy Star standards is to re-send, with further elaboration on several points, my E-mailed comments to you dated July 10, 2009 as reflected in the history below. While your recent lengthy treatise seeking further comment on planned modifications to the 2011 version of Energy Star seemingly purported to reflect EPA responses to broad categories of prior comments, my comments were not addressed at all; and, it is for that reason that they are re-sent. The observations remain valid and merit your consideration.

Comment 1) below of the 10/9/09 E-mail should require no further elaboration

Comment 2), last two sentences, regarding the proposed standards having a confused identity and appearing to be a "green standard wannabee" bears further comment. From your lengthy commentary about the "EPA Brand" in your most recent E-mail transmittal, it indeed appears that EPA is endeavoring to become "yet another" national voluntary "green" building standard. But as previously noted, there already are two national, voluntary green building standards, (the ANSI-approved National Green Building Standard and that of LEEDS), whereas what you have proposed remains incomplete by comparison. For example, you do not (and need not) address such "green standard" matters as Lot/Site Design, Resource Efficiency, or Operating, Maintenance and Owner Education, all of which are addressed, by whatever descriptors, in the presently recognized voluntary national standards. Why does EPA not support and promote application of those existing standards rather than seek to advance its "Brand(?)" and confuse matters by urging application of an incomplete standard when there already are two complete standards that could benefit from EPA support and endorsement? The impression left with me is that much of the non-energy and non-water efficiency standards in the proposed changes to Energy Star is an expression of nothing more than the egos of a bureaucracy and its senior administrators. Once you adopt the proposed changes, which I have no doubt will be done, rather than build and strengthen the EPA brand, you will have diluted and weakened same.

The last sentence in Para. 2 below from the 7/10/09 E-mail warrants repeating. "If, as a builder, I (am to) choose a Green Building Standard, it will be the ANSI-approved National Standard, not the confused-identify Energy Star program reflected in the proposed, revised guidelines.

Comment 3) below is further supported by Comment 2) above.

Comment 4) below addresses what I regard as the most serious deficiency in the EPA presentation of costs associated with the proposed changes. My point is the simple, incontrovertible fact that the EPA cost presentation significantly understates compliance costs by reason of being materially incomplete, which is different than the matter of whether the cost presentation has been low-balled. While any builder could and should debate whether the costs you actually identify are realistic, what you have failed to recognize and reflect are "all of the indirect costs", that are as real for the consumer/homeowner as any direct costs that you quantify, whatever the level of those direct costs. Every homebuyer pays indirect costs that are a function of direct construction costs. Those indirect costs include, as a percentage of sales price, the following:

- a. real estate sales commission (3%-6%)
- b. interest/financing/opportunity costs on additional invested capital (2.8-2.9%)
- c. increased site supervision associated with several days of increased cycle time arising from increased inspection documentation requirements (add roughly \$200/day)
- d. for new home builders providing a "closing cost credit": 3% of sales price



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e. builder overhead and profit as a percentage of sales price: 15%

The preceding numbers for any homebuilder will total, on average, at least 25% (of home/improvement sales price), which means that if you are purporting to present costs to the consumer you would divide EPA's direct cost numbers by 0.75, arriving at a sales cost that is one-third greater than the cost you are presenting as a basis for your public presentation.

The foregoing cost considerations are so basic to "Business 101" that I have to ask whether EPA is so uninformed/ignorant of what is required for a business to remain viable that it does not know better or is it so zealous for "greater energy efficiency at any price" that the agency will resort to whatever degree of subterfuge it concludes is necessary to make the sale.

And, whereas I subscribe fully to the purposes and goals of "energy conservation" and "green", I, and most builders I know, are equally committed to being honest with and maintaining fully professional, good relationships with our customers. Maintaining good relationships with customers, however, is made more challenging when I provide a customer with full, honest costs for Energy Star compliance and a "presumably trustworthy and objective" EPA comes along and puts out cost numbers for achieving Energy Star compliance that are preposterously low by reason of having omitted the significant indirect costs that any builder will incur in achieving Energy Star compliance to whatever standard. At that point builders I and other builders will experience homebuyer confusion and an unnecessary credibility challenge of EPA's making.

The type of misleading and incomplete cost information that you are disseminating complicates homebuilders achieving their goal of establishing and achieving a good relationship with clients. And, lest you miss my point, I am not suggesting that the standards should be changed because the real costs are at least-one-third higher than what you are portraying, I am saying, "Be honest about the full costs." At that point builders or consumers who may be considering adopting Energy Star standards can make informed decisions based upon knowledge of full costs, not cost portrayals that should be regarded, at best, as an uninformed fantasy, and at worst, as a fraud on the public.

Gentlemen,

These comments will be comparatively brief as follows:

- 1) With respect to more stringent Energy Star standards intended to promote increased energy savings, I would urge that no standard be adopted that can not meet the test employed by FHA for energy savings features being eligible for an Energy Efficient Mortgage. That test is that a certified energy rater must perform a net present value analysis on the projected incremental energy savings that arise from a particular energy efficiency construction improvement. For purposes of the present value analysis the loan interest rate is the present value discount rate, and ultimately the present value of incremental energy savings over the life of the improvement(s) can not exceed the incremental cost of providing such improvement (s). Satisfying that criteria means that a given energy efficiency improvement will more than pay for itself. If that test can not be satisfied by any of the "raising the bar" standards proposed by EPA, that standard should be modified to a point that the savings it yields pays for itself. You can rest assured that neither builders, REALTORS nor homeowners will promote or embrace paying for incremental energy savings that do not make economic sense.
- 2) The requirement you propose under "indoor air quality" for continual air exchanges appears antithetical to the concept of Energy Star. To the extent that you are requiring this consumption of electricity for air exchanges without a demonstration that indoor air quality degrades to a level detrimental to health, is simply increasing energy consumption without a showing of compensating benefit. This appears to be a "Green Building" issue rather than an "Energy" issue (except to the extent that it will result in the needless of consumption of energy). If EPA is attempting to move Energy Star in the direction of becoming a green building standard, there already is a "National Green Building Standard" and EPA requirements perceived as being a competing "Green" standard simply is a duplication of effort that results in needless confusion. As it is now,



ENERGY STAR New Homes Proposed Guidelines Comment Form

Energy Star and the National Green Building Standard are complementary, but what you are proposing is not complementary. If, as a builder, I must choose a Green Building Standard, it will be the National Standard, not the confused-identity Energy Star program reflected in the proposed guidelines.

3) With respect to your proposed new category of "water management" as pertains to foundation construction, flashing details and gutter and downspout treatment, see concluding comment of 2) above. To the extent that you are dealing with quantifiable savings that arise from "Water Sense" product features, you are on solid ground, because you are dealing with something that has measurable costs and benefits, but the other issues you are addressing already are dealt with by the National Green Building Standard.

4) Lastly, Energy Star does itself a severe disservice and loses considerable credibility by having spokespersons speaking before groups or being in print representing that the incremental costs associated with meeting the new guidelines will be in the range of \$2000-\$4000. My company has not yet completed a full costing of what compliance with the new standards signifies in dollar terms, but we currently are past \$6000, with the likely final number being in the range of \$8000, and that number is direct incremental costs only, without any mark-up.

Hopefully the preceding comments will be taken to heart. I currently am an Energy Star builder and a believer in the objectives of "Green Building". I, along with my customers, believe in and readily can be sold on energy efficiency improvements and investments that decrease water consumption which can be demonstrated to pay for themselves. To the extent that you move in the direction of imposing costs that are certain for the sake of benefits which are doubtful and unproven, you lose my customers, me and thousands of builders like me and their customers.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Pikes Peak Energy Star

Respondent Last Name: Colombo

Respondent First Name: Rick

Comments:

ATTENDANCE

Rick Colombo, PPES Chair/Campbell Homes

Phyllis Thurber, Vantage Homes

Charles Manly of Keller Homes

Kelly Noble, Campbell Homes

Lindsey Nigon of LaPlatta (hosting this event)

Kate Gregory, US EPA

Doug Bursnall, Energy Logic

Jeff Rath, Colorado Springs Utilities - CSU

Kristen Shewfelt, Energy Star (via phone)

Sharon Higashi, CB&T Mortgage

This first section is regarding the "pre-conference call" portion of the meeting.

1. There is no mortgage impact as the industry is already able to go over the debt to income ratios through our automated system. Any benefit would be determined by individual company based on their philosophy regarding supporting "greening" the world and their desire to be more attractive to Energy Star builders, not on any HERS rating, etc.
2. The builder's are certain that the costs for the 2011 requirements will more than double. And with the customer not absorbing these costs now, much less later the full weight will fall on the builder.
3. That our local government will tie the stimulus funds to full compliance of the new requirements. This is also discouraging to builders.
4. There will be some builders that will cease to comply in order to remain market aggressive.

Questions for Sam:

1. What work will he/his office be doing to increase customer participation in the new costs/plans?
2. Where are the costs shown on this plan coming from? For example the number of lights as well as the cost per light are both below what the builders here are stating is usual (while there are some very basic/entry level homes that might meet this criteria, most homes are not in this price/quality range).

General discussion items:

Sam indicated that his primary concern was that questions could be answered; it is not intended for an exhaustive review of the specifications listed in the 2011 requirements. He has a list of questions to begin with:

Why the changes? Market information indicates the need according to the powers that be. In addition there is a Waxman/Markey bill would in effect introduce a new national energy code at 30% above the current standard of the 2009 level. There are also individual states introducing their own standards as well that need to be coordinated. Lastly when the market is study by the experts there are some new practices and tools that are available that is not being used at this time (low hanging fruit?). In order to keep this label relevant in the market place, we must upgrade to the new available options and knowledge. The industry needs something significant to remain integris to the knowledge level of the customer base.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Biggest changes: Insulation (2011 specs) need to be installed properly (as opposed to current standards which apparently allowed some leeway).

And there is an entirely new checklist applicable to the new requirements relative to bridging and products used by builders. Reduced thermal bridging.

Proper usage of HVAC quality insulation (gaining 30% effectiveness?)

Efficient hot water usage (getting the hot water to the fixtures more quickly by various methods)

Key components have to qualify as energy star. (Lighting, appliances, etc.)

Process changes:

Shift from the fixed HERS score to a simulated performance specifications. "ES Reference Design Definition"

Size adjustment factor (the target score gets lowered as the house gets larger).

More significant reliance on mandatory requirements (checklists).

Any state that has standards that exceed the national standards, the state code requirements take precedence. The more rigorous code rules.

Question from PPES: Jeff Rath re: the overview of what was used to determine base line of homes (showing different climates, etc.). It appears that Colorado climate was not reflected in this chart. Jeff specifically wanted to know about the homes used. Sam replied that they used six climates (cold, very cold, humid, dry, marine, etc.). Sam suggested that we submit our own specific item that might not be cost effective to Colorado Springs for their review if we feel our climate is not addressed. Sam asked re: specific concerns; Jeff responded re: the baseline used didn't reflect our heating/cooling situations that we find here. Sam responded: you have to use a thermal envelope that works, absolute effective blanket, more efficient water management and key component usage, etc. Sam repeated his question re: specific concerns to our area. Jeff: Not necessarily with the upgrades that Sam mentioned, but being rated against a home built in Minneapolis for example (as we don't have the extremes that some areas have).

Someone else kicked in (did not get his name) with a clarification of the process: Someone building in Colorado Springs would take the National's descriptive package for our area and overlay it to our needs. The fact that they developed the packages based on specific areas they will be scoring for our homes specific homes built in our specific city. All we are doing is taking all the requirements for a home in this climate zone and that would generate a target score; the builder would make the changes necessary to the specific climate and as long as the target was met or exceeded, then the ES designation would apply. Sam said that they would go off line with further questions from Colorado Springs.

Other pre-prepared questions:

Only one ventilation system is acceptable now.

Defer to the organization that oversees ratings themselves. "We" do not set ratings ourselves.

Question: 80% of sockets needs to have ES bulbs, does that mean you also have to have the twist base as opposed to standard bases being used with 80% of ES bulbs being used. Answer is that standard bases can be used with ES bulbs to meet the qualifying percentages.

Is duct leaking testing by a third party required? If they are in "unconditioned" space, yes.

Why is part of the process re: to the HERS rating getting so complex? Sam's response says the complexity is related to understanding the process. He believes that once the reference design is integrated into the software that it will become very easy to deal with this change. One may have to edit the file and hit run one more time and that's about it in his opinion.



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Sam's contention is that a HERS number is much more difficult for a consumer to understand rather than the two paragraph explanation he gave. Comments were made in our group that a number, with its relativeness (is higher or lower better?) is easier to understand. So there is some disagreement on this item from our group as well as from at least one other gentleman on the phone call.

Multi-family program question: Has the EPA determined must comply with 2011 specs? Sam's response is that it is the same as single family, due to the amount of lead time given. Projects permitted before Jan 1, 2011 must be completed by July 2011 or they have to meet the new specs.

What is the cost impact on builders? Sam's response \$3-4000 per 2500 square foot home on average in addition to what is being spent now.

Now opening the floor to questions:

Any work being done by RESNET to upgrade "Raters" training to support the knowledge required to appropriately rate under the new guidelines? Sam's response was that there wasn't such a knowledge difference that the Raters couldn't handle it with what they know now or with minimal additional training.

Question re: 2009 IECC codes: here in CS we amend every code we adopt; if we amend the 2009 IECC to not require the 2x 6 construction on every wall that this would drive builders out of the business? Sam stated that an R19 wall effective is an agreeable thing. And a builder not willing to go there is not quite ready to be an ES builder.

Statement by CS PPES that the customer is not going to pay for this, so the builder will be absorbing it. Sam states that ES is not being properly sold and therefore if it was the customer would pay for it. Much offline discussion re: this subject as CS PPES heartily disagrees with that statement.

CS PPES asked if this national standard is already set in stone, or is our input going to perhaps make some changes? Sam: provide the documentation to back up our concerns and they will consider it. He stated that the process is not pre-determined.

Recommendation by CS PPES was made that the National organization take baby steps towards these goals rather than the larger leap being suggested by these guidelines.

Call was ended at 1:15 pm.

Offline questions: Is this ES's efforts to keep up with Leads? And yes was the consensus of our group. If the new requirements for Energy Star were adopted in it's entirety, most Colorado Springs builders would drop out of the Energy Star program.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Professional Builders Supply

Respondent Last Name:Kusilek

Respondent First Name: Kevin

Comments:I'm trying to understand the exact "counties" within North Carolina that fall into the "North Central Climate Zone" and the counties in NC that fall into the "South Central Climate Zone"? If the line runs through counties, does a map exists that will identify the specific cities located "on the line" of the North Central and South Central climate zones? We're trying to provide builders with accurate information regarding window & door requirements but are struggling due to the line running just south of Raleigh.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Quadrant Homes

Respondent Last Name:Wyatt

Respondent First Name: Quinn

Comments:Energy Star 2011- Comments from Quadrant Homes Washington State

As the largest home builder in Washington State, Quadrant Homes has been a proud participant in the Northwest Energy Star program for 5 years. When looking to incorporate a vendor, there are a few key items we look for flexibility, consistency and cost. After viewing the draft for the new program in 2011, there are a few items that do not meet those requirements, which mean Quadrant would no longer be an Energy Star participant.

- 1) Basing the requirements off of square footage and number of bedrooms. Quadrant is a presale builder which allows the buyer to choose the number of bedrooms that best fits their lifestyle. At Quadrant, we do not want to decide for the buyer the size of home that would best fit their lifestyle. While the trend of sales is to smaller homes, we want all our buyers to be able to choose the Energy Star program so it should fit all of the plans in our portfolio, not just the smaller square footages.
- 2) Item 4.3. By forcing the builder to choose one of the options, this item drastically increases the base cost of the home which is something Quadrant is unwilling and unable to do with the current climate of the real estate market. A Quadrant home is already built to a high quality standard with a low air changes rate. Including some flexibility under this option for other construction methods would be a necessary addition for Quadrant to continue with the program.
- 3) Water Management Checklist. While water management is an important part to building a quality home, it has very little to do with energy savings, which is what the Energy Star program focuses on. Even though Quadrant is already meeting the requirements on this list, there would be an added cost to expanding the verifier's responsibilities that Quadrant is not willing to incur. Even though the builder fills out the checklist, by having the verifier sign off on it, there is also an added liability to both the builder and the verifier. Removing this checklist and keeping the Energy Star program and the Energy Star Indoor Air Plus programs separate will provide maximum flexibility and choice to both the buyer and home builder.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Red-B Construction

Respondent Last Name:Beasley

Respondent First Name: Bill

Comments:Why has the EPA not simply adopted the new National Green Building Standard that was published earlier this year? Now that you have added air quality, water efficiency and material efficiency, the two programs almost completely overlap. The building industry has spent considerable amount of time and energy organizing around and ramping up to the national standard. I am concerned with the unnecessary duplicity and added complexity with having the two programs. The EPA's Energy Star program could simply build upon the existing national GB standard, adding or deleting requirements that are deemed important to EPA, instead of rewriting it. Why cannot we all work together to reach the same end goal?



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Responsible Energy Codes Alliance

Respondent Last Name:Lacey

Respondent First Name: Eric

Comments:The Responsible Energy Codes Alliance (RECA) is writing to support and to recommend improvements to the proposed draft 2011 ENERGY STAR Qualified New Homes guidelines. Many of the proposed changes would make the ENERGY STAR program more consistent with the 2009 International Energy Conservation Code (IECC), the national residential model energy code that is currently being adopted and implemented by many states in response to federal energy policy and requirements outlined in the American Recovery and Reinvestment Act of 2009.

While we support the improvements identified in the latest EPA draft, we also recommend that a few relatively small changes be made in order to maintain consistency among ENERGY STAR programs, and further changes to ensure that homes built under the ENERGY STAR program are no weaker than homes built to the 2009 IECC.

RECA is a broad coalition of energy efficiency professionals, national and regional energy efficiency and environmental advocacy organizations, product and equipment manufacturers and trade associations that promote the adoption and implementation of the IECC nationwide. RECA members have been involved in the development of the IECC since its inception. For over a decade, RECA has been aggressively pursuing the adoption and implementation of the IECC nationwide. Consistent with our mission, we believe that any above-code program, particularly one with the national reach and brand integrity and acceptance as ENERGY STAR Homes, should meet, at a minimum, the requirements of the 2009 International Energy Conservation Code (IECC).

Performance Path

Under the proposed performance path revisions, we offer the following comments: 1) we strongly support the proposed requirement that all fenestration and insulation meet or exceed the prescriptive requirements of the 2009 IECC; 2) we strongly support making the glazing area in the ENERGY STAR Reference Design consistent with the glazing area in the IECC's Standard Reference Design; and 3) we suggest that the HERS Index Target Procedure use the same SHGC (0.40) for climate zones 5-8 as the IECC uses in its Standard Reference Design in the Simulated Performance Alternative.

Our detailed comments on these topics are set forth below:

1) We strongly support the approach that when the performance path is used, all windows, doors, skylights and insulation are required to meet or exceed the prescriptive requirements of the 2009 IECC (this new minimum mandatory requirement should be highlighted in the National Program Requirements and all software development, training and educational materials). We view this as a crucial improvement in that it will ensure that ENERGY STAR homes have to meet the prescriptive thermal envelope requirements of the 2009 IECC no matter what compliance option is selected. It is essential that all new homes be built with a reasonably effective thermal envelope, because although space heating, cooling, and water heating equipment, lighting, appliances and other features are likely to be replaced (and upgraded) over the lifetime of the home, thermal envelope components will be in service for a much longer period – some even for as long as the home is in existence. Moreover, reasonable minimum thermal envelope requirements result in smaller heating and cooling equipment, lower peak demands and more comfortable homes. Occupant comfort is a critical issue



ENERGY STAR New Homes Proposed Guidelines Comment Form

since uncomfortable occupants are likely to adjust thermostats resulting in higher energy usage. The IECC prescriptive requirements maintain a reasonable level of minimum thermal envelope performance (and by definition, are cost-effective since they are included in the minimum code), particularly since ENERGY STAR is intended to be substantially above code.

2) We strongly support the proposal to make the window/glazing area in the ENERGY STAR Reference Design consistent with the window/glazing area in the 2009 IECC's Standard Reference Design. This is also an important improvement to ENERGY STAR. As proposed, the glazing area in the ENERGY STAR Reference Design will be the same as the proposed home where the proposed home glazing area is less than 15% of conditioned floor area, and 15% where the proposed glazing area is 15% or more of the conditioned floor area. This approach of reducing glazing area in the Standard Reference Design when proposed glazing area is less than the target was first adopted in the 2006 IECC and is similar to the approach taken in the energy code in California. The 2009 IECC improved on the 2006 IECC by reducing the target glazing from 18% to 15% of conditioned floor area. These changes result in an effective backstop to ensure that homes with high glazing area percentages still maintain the same level of efficiency as a home with 15% glazing area, while at the same time, it tightens the efficiency on homes with below-average glazing area percentages by avoiding a weakening of other requirements simply because of reduced glazing area in a home. These changes are also necessary so that ENERGY STAR exceeds the model energy code requirements in homes with smaller glazing percentages. The result is efficient fenestration in homes of all sizes and glazing area percentages.

3) We also offer a relatively minor improvement for EPA to consider to make ENERGY STAR consistent with the 2009 IECC. The Standard Reference Design of the 2009 IECC sets a 0.40 SHGC for homes in climate zones 4-8. We believe that this approach should be duplicated in the ENERGY STAR performance path to ensure the same level of efficiency. Although the HERS Index Target Procedure assumes a 0.45 SHGC in climate zones 5-8 (as compared with the assumption of 0.40 SHGC in the IECC performance path), there is no SHGC established for climate zones 5-8 in the basic Energy Star performance path. We do not understand why the values in the Target Procedure differ from the IECC and why there are no values in the ENERGY STAR Standard Reference Design. We recommend setting an identical SHGC value for both compliance options, and that the value should be consistent with the 2009 IECC (0.40 for climate zones 4-8). We note that a reasonable SHGC is appropriate even in northern climates in recognition of summer electric peak demands and comfort issues.

Prescriptive Path

Under the proposed prescriptive path revisions, we offer the following comments: 1) we recommend adding climate zone 4 to the SHGC calculation, since ENERGY STAR Windows requires a 0.40 SHGC in climate zone 4; 2) we suggest correcting potentially misleading language in both the U-factor and SHGC equations; and 3) we support the requirement that all fenestration meet, at a minimum, the fenestration ENERGY STAR Requirements.

Our detailed comments on these topics are set forth below:

1) We believe that the ENERGY STAR standards -- whether for an entire home or individual components -- should be internally consistent. In the proposed guidelines, in climate zones 1-3, when the window-to-floor area is greater than 15%, a lower SHGC is required. The requirement is calculated pursuant to an equation:

Required SHGC = $[0.15 / \text{Window-to-floor area}] \times [\text{Energy Star SHGC value}]$.

While we support the requirement to meet fenestration ENERGY STAR requirements in climate zones 1-3, we recommend extending the requirement to climate zone 4, particularly because fenestration ENERGY STAR



ENERGY STAR New Homes Proposed Guidelines Comment Form

requires a ≤ 0.40 SHGC for climate zone 4. This small change would make the two ENERGY STAR standards internally consistent and would save additional energy and peak electric demand.

2) In both the U-factor and SHGC equations, there is potentially misleading language that should be improved before the final criteria are released. The "ENERGY STAR SHGC" is defined in the proposal as "the minimum required SHGC of the climate-appropriate window specified." We think that this definition should read, "the maximum allowable SHGC of the climate-appropriate window specified." The language issue is repeated in the U-factor equation. We do not believe it was the intent to require SHGC and U-factor minimums, but rather maximums, in the ENERGY STAR criteria, and the correction should be a simple one.

3) As noted above, we believe that the ENERGY STAR standards should be internally consistent, and we support the proposed prescriptive path requirement that all windows, doors, and skylights meet fenestration Energy Star Requirements.

Conclusion

The Responsible Energy Codes Alliance supports the EPA's efforts to improve ENERGY STAR standards, including incorporating improvements from the 2009 IECC. With the improvements we recommend above, we believe the new guidelines will be a substantial improvement over current ENERGY STAR homes requirements.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Ryan Builders

Respondent Last Name:Ryan

Respondent First Name: David

Comments:Let me speak clearly and use small words so you understand: The proposed changes to the ENERGY STAR certification will KILL the program. As a Builder, I will not participate in your VOLUNTARY Program if these changes are adopted. The added cost to a home just to get compliance with your program will price me out-not only with added material cost, but also additional consultant costs to fill out all these checklists. The proposed checklists are ridiculous and over prohibitive. I DO NOT need your Voluntary Program to continue to offer my customers a quality built home. When your program goes away because of lack of participation, guess what? I'll still be here in Wisconsin working and providing a quality built, energy efficient home.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Santee Cooper

Respondent Last Name:Housand

Respondent First Name: Patricia

Comments:Santee Cooper commends ENERGY STAR on developing a detailed timeline to transition to the new requirements. However, a number of states including South Carolina have only recently adopted the 2006 IECC as the residential building code. Transitioning to an ENERGY STAR New Homes guideline with a Reference Design Home based on the 2009 IECC by January 1, 2011 and adopting additional checklists by 2012 will be a challenge for these states. In addition, the estimated cost to earn ENERGY STAR in South Carolina is currently \$2,300. According to ENERGY STAR's Savings and Cost Estimates, a homebuilder will need to spend \$4,648 to earn ENERGY STAR in 2012. This is a 200% increase in direct costs to homebuilders during a depressed real estate market. Utility sponsors cannot offset these additional costs through larger incentives if there is no verifiable increase to energy savings. Given this, Santee Cooper respectfully requests ENERGY STAR consider modifying the checklists to remove "no-verifiable-energy-saving upgrades" and adopting the new checklists over a two year period with the requirement of meeting all checklists by January 1, 2013. This additional time will allow a more gradual transition that will make it more economically feasible and practical for homebuilders to meet.

Santee Cooper is also concerned about the requirement in the HVAC System Quality Installation Checklist regarding mechanical ventilation. Santee Cooper requests ENERGY STAR assure that climate appropriate requirements are applied in the final version.

Finally, all of the Sample Home cost comparisons use the same Conditioned Floor Area (CFA) do not take into account the proposed Size Adjustment Factor. For example, a 3 bedroom home with CFW of 3,000 ft² would need to achieve a HERS Target Index of 79. This is a decrease of 6 points on the HERS Index. The need to achieve this more aggressive target combined with the additional requirements may make it cost prohibitive to earn the ENERGY STAR for homes that do not align with the "Benchmark Home" parameters. Has the EPA taken this into account? What is the estimated incremental costs to earn ENERGY STAR when applying the Size Adjustment Factor? Are the benefits of applying a Size Adjustment Factor worth the increased costs?

Thank you in advance for your consideration.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Schantz Homes

Respondent Last Name:Schantz

Respondent First Name: Steve

Comments:After reviewing the new guidelines I think schantz homes will drop out as an energy star partner. I think the direction of the program has lost any cost benefit analysis. Why would you require hard pipe air returns? We reworked our construction practices to create dry basements (no damp moldy air introduction), our envelope is tight, (no exterior draw), so why spend \$1000 to hard pipe? Why is the program entering green building? Energy star has a limited market penetration. Instead of creating a new tier you are attempting to greatly expand upon your limited success. Do you fear brand dilution? Don't kid yourselves buyers enter the program because they are not charged for it. When told of the cost buyers opt out. You would think energy efficiency is an easy sell but when given the choice of an oak floor or a furnace that will save them thousands of dollars a majority of clients will take the oak floor. You are going to kill the energy star brand by your entrenched beauracracic mentality. Stop adding requirements.Better is not always best.The building industry is in turmoil and surviving the downturn is our highest priority.Regulations are driving our costs beyond what the market can bear. With the residential sprinkler requirement alone we are facing 5-8 k per house. Keep it simple save energy.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Schmidt Bros. Custom Homes Inc.

Respondent Last Name:Schmidt

Respondent First Name: Ed

Comments:

They are better off having more builders going a little above code than a few going this extreme. You are going to loose 99% of your builders.

1st I would like to see the rule of not allowing heat runs in exterior walls be changed. If we do foilback ridged foam behind the heat run we can get 2 " which is an R-13 and 1" in the 2nd floor boxesill R-6.5. 2nd I would like us to get 50% of market share before changing any of the rules. We only have 17% now. With these new rules Wisconsin Energy Star program would fall below 10% for sure, maybe greater forcing more builders to build code minium homes. More builders doing a little is better than a few doing a lot. 3rd window requirments are too high. No manufacturers I work with make a window that would pass. This is not a smart use of dollars. 1 AIR TIGHTNESS 2 ATTIC 3 FOUNDATION Let's put the dollars where they work not the side walls and windows.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Scott Austin Builder LLC

Respondent Last Name: Austin

Respondent First Name: Scott

Comments: My name is Scott Austin and I live in the southwest corner of Wisconsin and I have read your new guidelines. I just don't understand the mentality of the direction that you are putting forth here. I am having a hard enough time trying to sell the program as it stands, not saying anything is wrong with what we have now but please do not complicate what is working very well in the state of Wisconsin. In my area of Wisconsin we are being infiltrated with Omish and Meninights and the consumers are happier than hell to pick these people up and take them home every day to build their home so they can save a few bucks. So the rest of us contractors, that are running our businesses by the book by paying our taxes and workman's comp, are struggling to get a new home to build and by the way try to sell an Energy Star home. I am working very hard in my area to try and educate people on the benefits of having an energy efficient home, but it is a slow process. If you implement what you are proposing I won't have a chance in hell. It appears to me that you are trying to out do the Leed program. Remember that we are their verifier. The Energy Star program is very unique in its own way and Leed is unique in its own way. In the past seven years I have invested a lot of time, money and effort into this program and I don't want this thing squashed. You people need to follow along behind a consultant and a builder for about a year or so and see what it is like to try and sell what we have now let alone what you are proposing.

Thank you for your time.
Scott Austin



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Segal and Morel

Respondent Last Name: Anderson

Respondent First Name: Chris

Comments: 4. Water-Managed Roof Assembly

4.1 Gutters and downspouts empty to lateral piping that deposits water on sloping finish grade ≥ 5 ft. from foundation or to underground catchment system > 10 ft. from foundation⁸

My comment is regarding the aforementioned requirement. The apparent intent of this requirement is to get water runoff away from the building as to prevent its entry into the building. A 5' lateral pipe on every downspout can be an eyesore. This requirement you are proposing could mean a complete underground piping system depending upon the yard grades and exterior features (driveways, courtyards). I am not sure what this has to do with energy efficiency.

A foundation waterproofing system such as Tuff-N-Dri will prevent water from entering the home. This system utilizes a drainage board and thick asphaltic coating against the foundation wall to direct water down to the drain tile where it is collected in a sump pit and pumped out and away from the foundation. I think this proposed piping system should have at least the alternative of using this waterproofing system. It seems to meet the intent of the requirement.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Simply Solar LLC

Respondent Last Name: Keator

Respondent First Name: Doug

Comments:

The US ENERGY STAR round 1 & 2 "Modified" guidelines will be very detrimental to having any homes certified as ENERGY STAR. The items that were removed from round 1 were rewritten and reinseted to the round 2 requirements. Sneaky but dispicable. In general the guidelines are way to strict and to require that a home meet so many criteria will cause builders to not bother with the program.

In Wisconsin we are already building homes that far exceed our own "Wisconsin ENERGY STAR Homes Program requirements. We have achieved tightness goals that exceed .25 CFM for sf. of shell area by 10 fold on a regular basis. The efficiency of these homes is remarkable considering what is being done else where in the country. If the guidelines, check lists, and the numerous proposed mandatory requirements are not severely reduced the impact will be detrimental to the building industry in Wisconsin, not to mention all states. The requirements will require raters, like myself, to increase our pricing due to the additional check lists, inspections, verification, and reporting. The proposed requirements will put me out of the new home rating business. Home owners will not be able to afford the additional requirements of the proposed program requirements if they must have a "Certified Home". Contractors who already build quality homes will disregard the program completely.

The proposed program will destroy the credibility of the ENERGY STAR branding that has taken place in the last 10+ years. I would suggest that the committees, that have worked so hard to put these documents together, contact the heads of the ENERGY STAR Programs in the top 10 states, including Wisconsin which ranks 4th I'm told. The committees should put together a reasonable practical, and affordable list of building requirements based on the practical knowledge aquired from program participants in the top 10 states with ENERGY STAR Programs. The programs in the individual states is working well, exceeding codes, drastically reducing energy consumption in every new home in the local ENERGY STAR Programs. Every contractor that I have shown the requirements to has stated that this will end their participation in the program. Is this the desired effect that is desired?

I'm sure that the committees that have put these rules & regulation together have worked diligently to prepare what has been presented. But rushing through the process, giving limited time for comments, rewriting and reinserting requirements, not incorporating practical& affordable suggestions will not make a better program. I hate to suggest that the entire program be scrapped and readdressed. This approach would be in the best interest of creating new jobs, recovering the economy, and boosting the new housing industry. Big business is not the concern here, they will survive. It's the small contractors, plumbers, electricians, raters, consultants, solar companies.that will be affected greatly. The proposed ENERGY STAR Program requirements will put a lot of folks out of business.

A detailed commentary of individual requirements is not practical for myself. But rest assured, the proposed round 2 requirements will destroy many businesses, large and small, in Wisconsin alone. I have worked very hard to build my energy efficiency/ renewable energy/ consulting business to where it is today. I really don't want a portion of my, or any one else's business destroyed by unrealistic, over regulated, expensive requirements, that must be completely complied with. To have check lists where all items must be complied with, as compared too a list of options, is unrealistic. Efficiency/construction options to reach a goal needs to be looked at. There is more ways to reach the end goal of an energy efficient home. Any situation where even



ENERGY STAR New Homes Proposed Guidelines Comment Form

the "Model Home" is unobtainable due to extensive building & financial requirements is not acceptable and will not be accepted.

Please stop the race to get these rules & regulations pushed through. Proceeding at a fast pace so there is no/minimal opposition is not the answer. Any effort to enact a program that has the potential to significantly impact habitable dwelling energy consumption should not be rushed. Fast tracking this program to meet anyone's deadline is not advisable. A well thought out and respectable program with obtainable goals, that are affordable to home owners and builders, is more important.

Sincerely,

Doug Keator
Simply Solar LLC.
1851 Scarlet Oak Trail
Oshkosh, WI 54904
920.426.1926



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:SK Construction

Respondent Last Name: Klevene

Respondent First Name: Nancy

Comments:We are just one of the many residential contractors struggling to make it in the current housing market. We are also committed to promoting affordable energy saving features in all of our homes - key word being AFFORDABLE. We have had a fair amount of success with the current ENERGY STAR program in our state (Wisconsin) and would like to continue building ENERGY STAR homes for our clients. Wisconsin Rapids has been in an economic crunch of it's own for some time already and our clients weigh the costs of building a home very carefully before making the decision to add energy saving features. Please don't impede the momentum of the current ENERGY STAR program by adding costs/taking away benefits for the residential home builder and their clients!



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:SourceGas/Arkansas Western Gas

Respondent Last Name:Smith

Respondent First Name: Paul

Comments:EPA's requirement in Section 9.1 of the HVAC System Quality Installation Rater Checklist specifying all combustion appliances located within the home's pressure boundary to be either mechanically or direct-vented to the outdoors will place natural gas burning appliances at a significant disadvantage to electric appliances. Specifically, the water heating market will be drastically affected by encouraging home builders to install electric tank water heaters due to the reduced cost versus having to install either a power-vent or tankless natural gas water heater. Natural gas appliances are certified under the American National Standards Institute Z21 series. Installation of these appliances is also covered in major model codes including the National Fuel Gas Code (NFPA 54) and the International Fuel Gas Code (IFGC 2009). EPA has provided no documentation that the operation of combustion appliances inside a home is a health hazard or lead to inferior air quality.

Energy Star's goal is to "save home owners money and protect the environment through energy efficient products and practices." The requirement in Section 9.1 disregards this goal. In the service territories of the both SourceGas and Arkansas Western Gas, the average customer operating a 40-gallon natural gas tank water heater (0.59 EF) will consume 210 therms annually at a cost of \$158. A 40-gallon electric water (0.92 EF) would consume nearly twice the amount of energy on a source basis at a cost of \$302. Besides the obvious cost savings, a natural gas water heater will also reduce annual carbon dioxide emissions by 54% versus an electric water heater. Furthermore, electric water heaters are not a qualified energy star product, yet this requirement will incentivize builders to install electric water heaters.

As an advocate of Energy Star qualified appliances we recommend that the EPA either eliminate section 9.1 of the HVAC System Quality Rater Checklist or modify it so as to allow for natural vented Energy Star compliant Water heaters.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Southern Energy Management

Respondent Last Name:Peaden

Respondent First Name: Michael

Comments:

Scott Hoover, Rachel Della Valle, Michael Peaden, Dan McFarland

Southern Energy Management Energy Star Comments 12/10/09

- General Comments:
 - o Why did Energy Star decide to require that bath fans be Energy Star rated and not the water heaters? Water heaters should be required to be Energy Star qualified, with the exception of electric tank water heaters since that is not currently possible (with the exception of heat pump water heaters).
 - HVAC System Quality Installation Contractor Checklist:
 - o The HVAC Checklist requirements will not be achievable by HVAC Contractors with current training by 2012.
 - Identifying and documenting the TXV and whether or not they are installed correctly is beyond the current capabilities of most HVAC contractors and/or Raters.
 - When it is warm outside you don't need a TXV but when it's cold you do.
 - o HVAC System Quality Installation Contractor Notes footnote #7 was not included in the HVAC System Quality Installation Contractor Checklist.
 - o COP is listed as a requirement under 4.2 and 4.3 on the HVAC Quality Installation Contractor Checklist and COP is not found on the AHRI website. Why use COP and not SEER and HSPF for energy efficiency ratings?
 - HVAC System Quality Installation Rater Checklist:
 - o 2.5 - Clarify the "building cavities should not be used as supply or return ducts"
 - Can building cavities be used if they have been lined and sealed?
 - o 2.7 - Should this be on the contractor checklist so they can adjust the airflows accordingly?
 - o 4.3 - Will mastic tape be acceptable?
 - o 5.1 - What should we do if the fresh air intake is in an unreachable location? This is another one the HVAC contractors should be measuring.
 - o Under Section 7, we would like to see a height requirement of air intake off of roof decks, maybe a foot or greater to reduce the temperature of the air being pulled into the intake?
 - o 8.1 - 5 ACH requirement for continuous fan operation is more complicated than it needs to be, maybe change this to a CFM requirement?
 - o 8.2, 8.3, and 8.4 - How are we supposed to verify this requirement?
 - o 9.2 - Should be a pressure requirement; with all exterior doors closed and the fans on, the pressure in the main body should be no more than $-/+3\text{Pa}$ WRTO.
 - Thermal Enclosure System Rater Checklist:
 - o 4.3.5f—HERS Raters are not structural engineers and should not be making calls on whether or not studs are needed. The plans may not be available to the rater on site to check for studs. That level of detail may not be available on the plans on site. The building code inspector may require the builder to add studs for reasons not listed on the plans.
 - o 5.4 – Why can't constructive adhesive be used at top plates-drywalls sealant?
 - o 5.2 - Do we need both sill seal and caulk at exterior bottom plates?
 - What is the reasoning behind this requirement?
 - How do Field Raters inspect for both sill seal and caulk?
 - Water Management System Builder Checklist:



ENERGY STAR New Homes Proposed Guidelines Comment Form

- o 1.2 - Crawlspace requirement seems excessive. 100% poly coverage with overlapping seems more achievable and an improvement over current practices.
- Water Management System Rater Checklist:
 - o 2.2 - While we agree with grade requirement, we do not see how will Raters verify if tamping has been completed or if the soil is non-settling.
 - o 3.1 and 3.2 - Both may not be verifiable at time of insulation inspection by Rater
 - o 5.2 - Will be almost impossible to verify.
 - o 3.2 - Is repeated on both the Rater and Builder checklist.
 - o Overall, we suggest allowing the builder to verify more than two items on this checklist due to Raters inaccessibility to field verify many items on this checklist. Perhaps raise it to 4 or 5 items that the builder can verify?)
- National Program Requirements:
 - o The radiant barrier requirement for CZ3 when 10 linear feet of ductwork is located in the attic seems extreme and two suggestions are:
 - o Increase the maximum amount of ductwork in an attic without a radiant barrier to a higher number (maybe 50 linear feet?).
 - o Make the requirement mandatory if equipment is located in the attic.
 - o Where do trade-offs come from since the Energy Star reference home's standards have been set so high?
 - o Consider additional conditions for homes over the benchmark home for the prescriptive path to allow for homes over the benchmark home to follow a prescriptive path. (Allow for larger homes to still participate in the prescriptive path.)
 - o The u values for Floors over uncond. space for the reference design home ($u=0.047$) punish builders who are using R19 (code). ie; the u-value for the reference design home is more stringent than the u factor would be for a floor insulated to code. The same is true for Foundations. This immediately puts the rated home at a disadvantage and makes any trade-off using increased floor or foundation wall insulation more difficult.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Sun Plans Inc.

Respondent Last Name: Coleman

Respondent First Name: Debra

Comments: Passive solar gain through south-facing glass, which can be beneficial in climate zones 2 and higher, seems to have been ignored, and the low SHGC coefficients listed block too much solar gain for the south-facing windows which are the ones to benefit from the low winter sun in the south.

We recommend adding a separate SHGC max for each climate zone for the south windows. Although I personally believe that clear double pane with a .56 SHGC for the entire window is acceptable, I can see that other may not and would therefore propose the following: CZ1 <.30, CZ 2 <.40, CZ3 <.45, CZ4<.50, CZ5-8-no max.

I've been a licensed architect designing passive solar homes throughout the United States for 25 years. I've lived in a passive solar home in south Alabama, Climate Zone 2, for 12 years. We need supplemental heat 4 months of the year. A SHGC of max. .27 blocks out too much sun in winter on south-facing windows which can be easily shaded from the high summer sun with 2' overhang typically. We used clear, double pane glass which has a SHGC of .56 for these windows overall. The overhang shade the entire window in summer and we have no overheating problems. Our all electric house with a high efficiency heat pump has energy bills that are equal in winter and summer.

Compliance of summer shading with overhangs can be demonstrated by this shading tool found on this site. It is very user friendly and will demonstrate how high summer sun can be kept out with overhangs.
<http://susdesign.com/overhang/index.php>

Since neither REMRate/REMDesign nor EnergyGauge adequately show passive solar gain, I do not think that is appropriate to remove or raise the SHGC only for homes that use the performance path.

I really wish I would have taken the time to show how much free energy can be gained through south-facing windows in winter. The calculations that our software shows for passive solar gain shows approx. 20-40% of the heat can be offset by passive solar gain with very little cooling penalties.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Survey & Testing Services, Green Builder Services, Energy Marketing

Respondent Last Name:Richardson

Respondent First Name: Mitch

Comments:E.Star 2011_my concerns

--general comment—

Allowing the phased in approach is a vital important concession. Thank you for that. However, I still think you are still making too big of a leap, too soon. There are too many increased costs and Energy Star will become a niche “whats that” label like LEEDs. In Utah the only reason why there are so many Energy Star homes being built is because the Utility companies are paying builders to do it. Not because of any particular demand from consumers.

--HVAC Rater Checklist 4.2 ‘measured duct less than 4 cfm..’ DISSAGREE FOR SMALL UNITS

Small 1-2 bedroom apartments will not meet this standard. In my experience there is a limit to the testing equipment available. I don’t know if larger systems have an bias in their favor, or if smaller have a bias against them in the testing procedure but I do know that getting very small apartments to pass the current standard is already a difficult task that sometimes requires pressurizing smoke into the ducts to sleuth out possible areas to improve tightness, sometimes even that isn’t enough. I have personally tested dozens of units of this size that had no observable leakage (using smoke) and no visible way to improve the tightness, yet still BARELY passed the current standard. For units less than 1,000 sq.ft. in size you must stay with the old standard.

--Water Management Rater Checklist 5.1 ‘no carpet near bath or toilet’ DISSAGREE GENERALLY

In general I think this entire checklist falls outside the ‘scope’ of what Energy Star is and that these issues should be handled by building code requirements. But 5.1 in particular is way outside the scope. This will add very little to help anyone. In fact the most common reason for installing carpet around the toilet and bathtub is because the home purchaser is planning on installing tile or other upgraded flooring themselves after moving in. You are forcing them into the extra hassle and expense of vinyl for no reason..

--“reduction of infiltration levels by 1 ACH50 in all climates...” DISSAGREE FOR SMALL UNITS

For apartment buildings requiring sprinkler systems, this is a very heavy burden and an exception should be made. Frequently inspectors do not allow insulation, gaskets and other anti-air infiltration measures to be implemented around the penetrations. By further increasing their air tightness requirements ,this would add a significant amount of unpredictability, expense and burden to the process. Apartment buildings with sprinkler systems should remain at the old standard.

--Thermal bypass checklist 1.2 &2.1 &2.2 CLARIFICATION NEEDED

When using the IECC 09 performance path to ‘pass’ a home, there is some flexibility in what is required. I assume you are suggesting that the IECC 09 prescriptive path requirements is what your requirement is tied to?

--HVAC Rater Checklist 2.5 --VS.—2.7 “no returns in building cavities” DISSAGREE GENERALLY

Requiring extra return air AND banning the most common (and cost effective) way to move that air at the same time is a large burden and would not be cost effective. You need to lighten up on one or the other requirement. My opinion is, let go of the no returns in building cavities for now, having a proper amount of return air is the larger goal that makes the bigger difference.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Sustainable Energy Systems

Respondent Last Name:Huffman

Respondent First Name: Rocky

Comments:My only concern is in todays market the additional cost for the changes would discourage builders to comply.

I think if the tax credit was increased in line with the additional cost of the proposed changes it may work.
thanks



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:T.W. Lewis

Respondent Last Name:Adler

Respondent First Name: Patrick

Comments:RE: Energy Star 2011 Comments

Energy Star is a “carrot” program rather than a “stick”. It is important that the “carrot” be within reach and in the right direction. It is very tough for me to comment on a program when the calculations associated with the program have not been performed so I that can clearly see its financial impacts. I have reviewed the cost savings analysis and I believe some of the costs assumptions are not relevant to the “real world’ costs. Before I begin with my comments, I thought that I should give the reader some background information to help reader to gains some perspective.

T.W. Lewis is a luxury home builder that operates in the Phoenix metropolitan area. Our homes have been recognized for their Quality, Style and Design. In 2009, T.W. Lewis became an ENERGY STAR® Partner with 100% of our new home starts being ENERGY STAR qualified. We incorporated the following energy efficient features into our standard home offering – DuPont™ TYVEK® StuccoWrap®, Milgard vinyl windows with low-E glass (U-0.35 , SHGC 0.34), LP Techshield® Radiant Barrier, Johns Manville Spider® R-22 wall insulation and Johns Manville Climate Pro® R-38 attic insulation. These features helped us produce a low average HERS Index value of 78. The HERS Index value would have been much lower, but the amount of windows associated with our highly appointed homes impacted the value. T.W. Lewis is one of only a few production builders in Arizona that has the home’s HVAC system custom designed for each house based on its solar orientation and floor plan options selected for the home to truly have the HVAC system “Right Sized”. Typically the HVAC design in production home building is done once for a floor plan using the worst case solar orientation which can yield excess tonnage for the home that ends up with the best case solar orientation.

We are proud that we exceeded the Energy Star requirements, but we are faced with several challenges. The 1st is that the public is not aware of the HERS Index. The 2nd is that the appraisal community does not have an understanding on how to appraise an energy efficient home at a higher value. The 3rd is that the lenders do not credit the monthly energy savings dollar for dollar towards the homebuyer’s ability to pay for a higher mortgage. The 4th, and last challenge, is that Energy Star is contemplating on increasing the standards too much in order to belong to the program. So it is with this background that I would like to share my comments:

1. I am speculating that with the Energy Star’s proposed Size Adjustment Factor (SAF), the T.W. Lewis current average HERS Index value of 78 will not be sufficient for the homes to be included in the new Energy Star program. The T.W. Lewis home that would be most impacted by the proposed SAF requirement is the 4130 Plan, which is 4 bedroom home with 3,779 square feet of livable space. I know how difficult it can be for policy and program makers to get “real world” experience on cost and calculations. I would like to extend and invitation to the Energy Star team to perform the calculations on any T.W. Lewis home to see if the new proposed rules will knock these homes out of the system.

2. I find the Cost and Savings PDF to be suspect. The Capital Costs on complying with the proposed Energy Star changes converted into a monthly mortgage increase is greatly impacted by the assumed interest rate. To assume that interest rates will be at 5% for 2011 and beyond is unrealistic. Also, the cost estimates on many of the items listed do not represent costs that a builder would experience and ultimately what a consumer would experience, for example; the savings that a builder sees associated with a 1 ton reduction on



ENERGY STAR New Homes Proposed Guidelines Comment Form

an AC system ranges between \$150 and \$500 (not the stated \$500), the cost of an Energy Star fan compared with a "code" fan is significantly more than what was stated, the increased cost to consumers on the upgraded window is also much greater, and, if I am reading the Water Management System correctly, I am understanding that rain gutters would be required (they are currently not required in Phoenix), which would be over \$1,000+ of additional costs. Energy Star has to appreciate that if we are impacting the exterior look of a home, it has to be done with some style and design, and not done with only a utilitarian perspective so the lowest cost rain gutters are not an option.

3. With the proposed penalties of the Size Adjustment Factor, the EPA runs the risk of alienating homebuilders that are currently participating in the program. Homebuilders that operate in the higher end market, like T.W. Lewis, already have to incorporate extra energy efficient features to combat the negative impacts associated with the greater amount of windows. To place an additional voluntary burden on a homebuilder that is not seeing any positive impacts associated with increased valuation can easily turn the homebuilder away from the program. I propose that the Size Adjustment Factor be removed from the Energy Star proposed requirements until the valuation matters discussed above are properly addressed so that the general public, appraisers and lenders all clearly understand the value of the HERS Index and it becomes common knowledge with tangible benefits.

4. The beauty of the Energy Star program with the general public is that it is very focused in its name and its mission. With the proposed expansion of the Energy Star program into Water Management, the Energy Star program will have eroded its focus and reached into areas beyond its mission. The Energy Star program has yet to get the public made aware of the HERS Index, and it is already wishing to go into Water Management? If the EPA is interested in Water Management, a separate program with a separate logo should be created. I recommend dropping the proposed Water Management aspects of the Energy Star program.

5. In the HVAC System Quality Installation Rater Checklist #2.4, there is the requirement that the flex ducts not have more than 0.5" of sag per foot. This seems like a requirement that will be of high costs to implement and inspect that will result in a low value of actual energy savings. The spirit of the requirement is that there are no sharp bends or unnecessary sag. The 0.5" per foot requirement seems to be arbitrary and very restrictive. I recommend that the 0.5" requirement be removed from the checklist.

6. I am not clear what constitutes excessive vertical framing members, is it excessive if it is not on the plans, or if it is not structurally required? The exterior skin of our homes is a smooth sand stucco finish. We are well aware that structurally speaking, the framing could be reduced from 16" OC to 24" OC, but in the past, when the framing was placed at 24" OC, we experienced excessive stucco cracking on the exterior of the home. We frame our homes per plan, so if the plan is the determining factor, then I have no issue, but if we have to document the structural need for 16" OC, then I do have an issue and recommend that the requirement be revised so that the Rater only needs to review the plan.

7. If the proposed Energy Star requirements associated with advanced framing techniques to reduce the number of vertical framing members on the structural engineering plan is seeking for the framing plans to be redesigned to only include those vertical members that are absolutely required, then the cost for the structural redesign of homebuilders standard plans needs to be included in the cost and that cost needs to also include the city review fess, which can be quite expensive. In a community with six standard plans, the city review costs can exceed \$18,000 and the structural engineer's costs would more than double that number. As the reader can tell, I am not clear on what the requirement is for determining non essential vertical structural members.



ENERGY STAR New Homes Proposed Guidelines Comment Form

8. We recently upgraded our window assembly to require that we have wood backing for 12" around the sides of our windows. We did this for two reasons; 1) it allows our 25 MIL self adhesive flashing to adhere to something, 2) it allows the lathe nails to sink into a material rather than just blow through our flashing. If the proposed Energy Star requirements negatively impact this new best practice, it would be detrimental. I recommend that Energy Star allow for 12" of wood around windows.

9. It appears that the definition of a Den requires that there be a closet in the den. Some homes have dens/home-offices without a closet. It does not seem like a closet is material to the definition of a den and I ask that the definition be revised to exclude the closet requirement.

10. In regards to the different logos that will be developed to indicate which form of Energy Star is being achieved during the transition, I recommend that standard Energy Star logo be used with addition of v2 or v3 (2.0 or 3.0) to the logo so that the public can easily see what version is being achieved.

I hope these comments have been helpful in sharing a homebuilder's perspective. Please feel free to contact me at 480-768-4966 if you have further questions.

Sincerely

Patrick Adler, LEED® AP
Vice President
Purchasing, Acquisitions & Development
T.W. Lewis
2009 NHQ GOLD Award Winner

Can you add to my comments that the Cost Benefit Analysis associated with achieving the requirement for the trusses to be elevated in order to achieve the height necessary so that the insulation height is at least 75% of the full insulation level of the rest of the attic needs to include the following costs:

1. cost to revise the engineering drawings
2. the city review fees associated with the engineering revisions
3. the additional costs for the greater amount of building skin (paint, moisture barrier, & siding)
4. the additional truss costs associated with the "elevation".

I just noticed that this comment was not included with my submitted comments and it is very material. If builders have to have their building structural plans redesigned (for any reason), it might just break the program.r



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Tempest Homes

Respondent Last Name: Scheumann

Respondent First Name: Barney

Comments: We would like to see the window u-value, raised heel truss and inspection forms left out of the changes. These items are beneficial in energy savings, however they are the most expensive to include for the benefit. Along with the inspections forms, we cannot incur the additional overhead expense with burdensome paperwork.

We are and have been energy star partners for over 3 years and would like to commit and continue, however for our product we cannot afford the dramatic cost increases the proposed changes will incur to our homes. Small changes over a 3 or 4 year period are easier to soften the cost impact and spread out over time.

Thank you

Tempest Homes



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Thermo-Scan Inspections

Respondent Last Name: Dunn

Respondent First Name: Travis

Comments: I've spoken to many of our builder clients and the production builders indicate that they will likely stop offering Energy Star if these updates are finalized, and instead go with a marketing campaign with a less intensive "Green message".

Some of their biggest concerns are: Minimum heat pump standard level, lowered duct leakage rate, Rigid insulation of R-6 or Grade I Insulation, window u-value level, R-6 duct insulation on ALL ducts, raised heel truss, Inspection Forms.

From our perspective, the management of the inspection forms will be a significant challenge. Many of the custom builders we've worked with that attempt the NAHB Green Standards program do not complete the certification of their homes due to the large paperwork burden and related overhead expense.

While all the prescriptive requirement changes are beneficial, this is a terrible time to mandate these cost increases. Why not offer an optional, voluntary Energy Star Plus program that included all these requirements? Such a program would allow builders that already exceed Energy Star or builders who want to exceed Energy Star to differentiate themselves.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:Tile Roofing Institute

Respondent Last Name:Olson

Respondent First Name: Rick

Comments:There are two subjects that we would like to address:

1.The Tile Roofing Institute (TRI) would like to request the EPA to review the energy saving benefit of the 3/4" air space between the solid roof sheathing and the bottom of the roof tiles / roofing material.

Tile roofing conventionally has an air gap between the tile underside and the roof deck. The significance of the 3/4" air gap is that this can be provided by battens specifically designed to save energy. Using the software approved by the California Energy Commission that complies with the new California Title 24, Part 6 of the California Building Code, a comparison was made between an asphalt shingle roof with the default reflectivity of 0.08 and an Energy Star rated asphalt shingle roof with a reflectivity of 0.26. The result was a 5.1% savings in the energy budget for a standard home in Sacramento. A tile roof on the same home in Sacramento with a reflectivity of 0.08 and a 3/4" air gap showed a savings of 6.9% and a tile roof with Energy Star rated reflectivity and 3/4" air gap showed a savings of 11.5%. This software provides a conservative measure of the savings that have been demonstrated by studies performed by Dr. Miller at Oakridge National Laboratory. On this basis, we request that raised batten products which provide a minimum of 3/4" air space (between the roof sheathing and the bottom surface of the roof covering) to qualify for an Energy Star label. This would encourage the use of these energy saving products that also improve the durability of the roof system by reducing deck penetrations and protecting the waterproofing properties of the underlayment.

2. The Tile Roofing Institute would like to request the EPA to accept the use of reflectivity ratings listed for high slope roofs (> 2:12) by the Cool Roof Rating Council (CRRC). Manufacturers are currently required to separately list their product with the CRRC and Energy Star. The CRRC has a robust accreditation process as it requires certification by an independent laboratory. Roof material samples are then aged for three years at three weathering sites across the US. If the aged values are not available, a procedure for calculating the aged reflectance is included in California Title 24, Part 6. The use of the CRRC ratings, combined with the aged reflectivity calculation, will promote innovation of more energy efficient roofing products. Extensive measurements of three year tile roofs show little decrease in reflectivity and prove the calculated method to be conservative. Currently Energy Star only allows products to be listed that have a three year aged reflectance, which has been a barrier to the innovation and promotion of new energy efficient roofing products.

We would be happy to provide further discussions and additional technical research information in support of our request. For more information, please contact Rick Olson at (541) 689-0366, Rolson@tileroofing.org. Alternatively, you may contact Jeanne Sheehy (312) 596-5224, Jsheehy@tileroofing.org.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:US Green Building Council

Respondent Last Name:Foss

Respondent First Name: Asa

Comments:Overall, I'm very pleased with this version. It is a great step forward in ensuring that all ENERGY STAR certified homes are energy efficient and comfortable. One specific comment related to Item 3.1 in the Water Management System Builder Checklist. It says that 'Cement board or equivalent moisture-resistant backing material installed behind tub and shower enclosures.' Both LEED for Homes and IAP have similar requirements, and we have had a bit of confusion from some project teams who thought that this meant that moisture-resistant backer board was to be installed to the floor behind all bathtubs, which is not what we meant (and I assume you don't mean that either).

I recommend that you modify the language to say something like 'where backer board is required behind tub and shower enclosures per manufacturers instructions, it must be cement board or equivalent moisture-resistant backing material.'



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Vinyl Siding Institute, Inc.

Respondent Last Name: Dobson

Respondent First Name: Matthew

Comments: In reference to the Thermal Enclosure System Rater Checklist Section - 4.3, VSI suggests the following changes:

4.3 Reduced thermal bridge at wall with one of the following options:

4.3.1 Continuous rigid insulation sheathing (add the following)

Consider this language added to 4.3.1: ...insulated siding, or a combination of insulated sheathing and insulated siding

Footnote 9 under 4.3.1

9. Continuous rigid insulation sheathing...(insert below language) shall be at least R-3 in Climate Zones 1 to 3; R-6 in Zones 4 to 6; R-10 in Zones 7 and 8.

Consider this language added to Footnote 9

insulated siding, or a combination of insulated sheathing and insulated siding

Consider the elimination of this sentence: Insulated siding can meet this requirement as long as it provides the required R-value and is installed flush with the exterior sheathing and is installed flush with the exterior sheathing.

Consider the addition of this sentence: Insulated siding must be attached directly over a water-resistive barrier and sheathing.

No other changes.

Substantiation:

1. Current language doesn't specifically call out insulated siding under the appropriate section; rather it's buried in footnote. It should be more prominently referenced in order for users to consider as a viable option.
2. It should be clear that performance can be based on insulated siding or a combination of insulated siding and insulated sheathing.
3. Change in language as far as attachment is consistent with what the energy code has adopted during the latest IECC cycle.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name:WECC

Respondent Last Name:Nagan

Respondent First Name: Joe

Comments:

On behalf of the Wisconsin Energy Conservation Corporation (WECC), we appreciate the opportunity to provide the Environmental Protection Agency (EPA) with comments and concerns in regard to their ENERGY STAR Qualified Homes 2011 (ENERGY STAR 2011) proposal. WECC, as a long-term partner with many ENERGY STAR programs, stands alongside the EPA in advocating the increase of energy efficiency in new homes. While we appreciate the EPA's effort to solidify the original ENERGY STAR 2011 proposal, concerns remain about the impact that ENERGY STAR 2011 will have on our builder partners, partnering consultants (raters), and ultimately the programs we administer in the Midwest including Focus on Energy's Wisconsin ENERGY STAR Homes Program.

There are many concepts of ENERGY STAR 2011 proposal that WECC agrees with and supports, for example the Size Adjustment Factor and the HERS Index Target procedure. Our response to EPA's first proposal involved an item by item discussion of WECC's support or nonsupport of individual requirements and checklist details. While some of our concerns are negated with the removal of specific mandatory requirements and the IAQ checklist, we ask the reviewers to reference our response to the first proposal in regards to our concerns from a technical standpoint. Our response to the current ENERGY STAR 2011 proposal will focus on our builder partner's and partnering consultant's participation in the Wisconsin ENERGY STAR Homes Program.

Our builder partners have concerns that if Wisconsin ENERGY STAR Homes adopts ENERGY STAR 2011 as proposed the following results will occur:

- . Increase cost of labor and materials
- . Increase cost of consultant certification
- . Increase complexity for ENERGY STAR 2011 participation
- . Difficulty explaining ENERGY STAR 2011 to potential customers
- . Difficulty justifying in terms of payback of ENERGY STAR 2011 to potential customers
- . Use of other "green building" programs instead of ENERGY STAR 2011.

Our builder partners are concerned that given the current economic environment any increase in participation cost in the Wisconsin ENERGY STAR Homes Program will put them at a competitive disadvantage compared to nonparticipating builders. Wisconsin's residential new construction market is primarily a custom homebuilding market. This construction environment has shifted considerably toward custom homebuilding with the current national economic situation. Residential new construction in Wisconsin for 2009 has decreased 55% and 30% from 2007 and 2008 levels respectively. In 2009 315 builder partners built 1,209 Program certified homes (year to date), 92% of the builders built 10 or less homes and 57% built only one home. Our builder partners work in an environment that is extremely competitive, has razor thin margins, and decreased building opportunities. Any increase in costs associated with the Wisconsin ENERGY STAR Homes Program will force the builder partner to decide between participation and business survival. The other area that the builder partners have expressed concern with is with the potential homeowner's perception of ENERGY STAR 2011. The builders feel that the complexity of 5 checklists with 182 items and 67 footnotes will not be a selling point to the homeowner, more is not necessarily better. In the current program, our builder



ENERGY STAR New Homes Proposed Guidelines Comment Form

partners can market the Wisconsin ENERGY STAR Homes certification to homeowners by showing the energy savings and payback. Although there is strong argument that discussing payback is an inappropriate approach, the reality is that many customers are acutely aware and request payback information for potential measures. A reoccurring theme in the discussion with our builder partners is that if they can't sell ENERGY STAR 2011 and the homeowner won't buy ENERGY STAR 2011, they will find another "green program" that will help them with market differentiation.

Our partnering consultants have expressed many of the same concerns as our builder partners along with consultant specific concerns:

- . Increase costs of consultant certification
- . Increase complexity for ENERGY STAR 2011 participation
- . Increase amount of paperwork and administration
- . Difficulty explaining ENERGY STAR 2011 to potential builders
- . Prescriptive nature of the checklists and consequences of noncompliance.

The consultants are apprehensive about the prescriptive nature of the checklists. Their concern centers on the numerous mandatory requirements and checklist items that are required for certification. Failure to meet any of the mandatory requirements or just one of the 182 items checklist items will result in disqualifying the home from certification despite the likelihood that the noncompliant item may have little or no impact on home's energy efficiency.

WECC recognizes the thoroughness of the ENERGY STAR 2011 proposal from the EPA's perspective. However as the program administrator for Wisconsin ENERGY STAR Homes, WECC also needs to recognize the perspectives of our builder partners and consultants defined by the realities of the residential new construction market in Wisconsin. Those realities are determined by potential homeowners who are utility customers that fund the Focus on Energy programs. There are additional constraints that the Wisconsin ENERGY STAR Homes program operates within to remain a viable program. The Wisconsin Public Service Commission determines cost effectiveness criteria for Focus on Energy programs. The Water Management Checklist is largely a non energy checklist that will impact program delivery by lowering the cost effectiveness measures for the Program. Currently, each home certified has an incremental cost of \$805 and savings of 96 therms as determined by Program evaluators. The EPA estimates the increment cost of implementing the ENERGY STAR 2011 proposal at \$1,550 per certification. Wisconsin ENERGY STAR Homes would see an increase in the incremental cost with no corresponding increase in energy savings.

WECC completely supports and agrees with the EPA's primary stated objective for ENERGY STAR 2011 "To maintain a viable public/private voluntary partnership whose primary objective is to transform the residential construction market through the construction of homes that save energy and reduce associated greenhouse gas emissions" but disagrees on how to implement that objective. Our builder partners and consultants have serious concerns about participating in ENERGY STAR 2011. Without strong support from our builder partners and consultants, we will lose that voluntary partnership with Wisconsin ENERGY STAR Homes.

Considering the impact on participation of builder partners and partnering consultants, should the EPA decide to move forward with the ENERGY STAR 2011 proposed changes as is, WECC on behalf of Focus on Energy would need to seriously consider developing a residential construction program that is no longer solely predicated on the National ENERGY STAR Homes model.

Thank you for the opportunity to express our concerns and position on your proposed new guidelines for ENERGY STAR Qualified Homes 2011.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Sincerely,
Carter Dedolph
Homes Program Manager
Wisconsin Energy Conservation Corp.

Sara Van de Grift
Director of Residential Programs
Wisconsin Energy Conservation Corp.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Anonymous #1

Respondent Last Name: Anonymous #1

Respondent First Name: Anonymous #1

Comments: The new version 3 Energy Star 2011 program as proposed will not be valued by our customers and as such will not be successful in our market. The significant increase in costs to implement the program is not aligned with the additional energy efficiency provided. The numerous checklist and slant toward prescriptive methods versus energy consumption levels will reduce innovation in the marketplace and create a bureaucratic process for implementing innovation in the future. The dramatic shift from a focused energy efficiency program for homes to a broader building codes type prescriptive method will erode the Energy Star for Homes brand and force others to create alternative brands focused on energy efficiency.

Based on the estimates provided in the proposal; the administrative costs to certify a house will increase by at least \$725.00. These estimates exclude the cost for the HVAC checklist, which will add at least another \$200.00. Given a current price of \$650.00 plus the additional costs of \$925.00, a 2011 Energy Star for Homes certified home will cost the consumer more than \$1,500.00. This is a staggering 140% in certification costs. I would strongly suggest a consumer concept study be completed with the new benefits and the new costs compared to the existing program cost and benefits. I suspect the results would be very enlightening.

Improving the program should include aggressive energy consumption goals including many of the improvements provided in the current proposal like adjustment of the HERS index based on the excess floors space. On the other hand, the new program should exclude non-energy related mandates and checklists in favor for a more focused energy performance program.

In summary the program should be true to its brand and remain Energy Star, instead of growing into Building Star, Comfort Star, or Safety Star.



ENERGY STAR New Homes Proposed Guidelines Comment Form

Organization Name: Anonymous #2

Respondent Last Name: Anonymous #2

Respondent First Name: Anonymous #2

Comments:

The state of WI. has one of the best Residential Uniform Dwelling Codes in the U.S. Enhanced by our Focus on Energy Public Benefits program the WI. Energy Star Home plan, a Performance Tested home meeting the conditions of our cold climate consistently out-performs most other buildings around the country when put into the user/owner's hands.

Adding the many prescriptive measures in the newly proposed version of Energy Star Homes will minimize the use of the plan within this region. As it is now, most consumers go into the building of a home with Square footage, First Costs and Granite counter tops in mind.

The growing of the WI. Energy Star home program has happened in a painstakingly gradual process and the growth in the numbers of home builders to high performance a building applications has not been too far behind. Educating consumers and builders to make what is the right "Energy Efficiency First" choice in their home building has been an ongoing effort over the 25 years that I have personally been involved in residential energy programs.

I believe that prescriptively, a builder could still build a crappy house where as the performance testing requires a real QC process right from the beginning of construction.

ASHRAE provides us with good HVAC foundations for user comfort but, it is not the be all to end all in HVAC performance.

For HVAC contractors, especially those providing professional GeoThermal Heat Pump installations, the added paper work requirements and thus as well related added costs of the installations will further slow the growth of what the DOE in 1996, to paraphrase has called the "Most Efficient and Environmentally friendly heating and cooling system available today",

Further, WI. is a 100% Code enforcement inspection state. The steps of the required WI. inspections are not conducive to the practices purported by the new Energy Star Homes plan and will create added delays, costly re-do of completed work and will further discourage of the use of Energy Star Building practices by both builders and end users. Sealing vapor barriers to top plates of homes will not allow for ease of drywall applications in view of and in following the time frames of the electrical and insulation and vapor barrier inspection sequences.

A prescriptive CFL light bulb program will not really save the world by itself. We all know that a multi faceted, comprehensive and performance based plan is what it will take to make real change happen quickly. I personally believe that increasing the man made obstacles to Residential building construction will only serve to slow the intended results from happening.

Thank you for your consideration.