



May 6, 2005

Jonathan Passe
ENERGY STAR Homes Program
US Environmental Protection Agency
1200 Pennsylvania Ave. NW
6202J
Washington, DC 20460

Dear Mr. Passe:

The CEE Home Performance Committee (Committee) thanks the Environmental Protection Agency (EPA) for the opportunity to comment on the proposed 2006 ENERGY STAR homes specification. The Committee, represented by the list of Supporting Organizations below, applauds EPA's efforts to increase the efficiency of homes, and respectfully offers several comments that the Committee believes would improve the specification.

A. Overarching Comments

1. HERS Scores

Regarding the question of whether the ENERGY STAR Homes Program should continue to tie ENERGY STAR qualification to a specific HERS score, the Committee has two comments. First, the group agrees with the approach of linking the prescriptive path to IECC instead of a HERS analysis, provided that the result is at least as stringent as ENERGY STAR compliance through the performance path.

Second, it is the Committee's understanding that RESNET is working to update the HERS reference home. The Committee supports tying the performance path to this updated HERS reference home for the following reasons:

- Program implementers often base incentive levels on tiered HERS scores. Keeping a HERS score as a baseline for the performance path enables this program approach.
- Programs also use a HERS score for a given home to calculate savings, and having a baseline HERS score facilitates that process.
- The lack of specificity associated with having no HERS baseline score could invite gaming (e.g., developing a baseline case that is lower than it should be).

2. Verification

The Home Performance Committee agrees with EPA that both the performance and prescriptive paths should require field verification to ensure that projected savings targets are met.

3. Thermal Bypass Checklist

The Committee believes that the proposed Thermal Bypass Checklist has merit in theory, though there are several concerns that Committee members would like EPA to assess before making the

Checklist a required component of the ENERGY STAR Homes Program. These concerns are listed below.

- Currently, there is no definition of what constitutes a “failure” of the Checklist. What is this definition, and what are the consequences of a failure? For example, must the entire Checklist be filled out in the affirmative in order for a home to become ENERGY STAR-qualified? What is the repercussion if one item is not checked off? Is there a different consequence if five or more items are not checked off?
- In order to fulfill the stated objective, the Checklist should include more detail and specificity in its requirements.
- Has EPA considered the significant inspection costs that the Checklist might generate? Who will bear these costs?
- The potential overlap with HERS standards within the insulation section should be considered by EPA.¹
- In some parts of the country, such as Oregon, Montana, and Washington, state codes require many of the same measures called for in the Checklist. Studies in these regions show good levels of compliance with these codes. Is it EPA’s intent to require that the Checklist be used in all areas of the country? Is this duplicative?
- Currently, it is unclear whose responsibility it is to ensure compliance with the checklist—the program administrator or the HERS rater? EPA should offer guidance on this question to prevent market confusion.

If these issues are addressed satisfactorily, the Committee would support the Thermal Bypass Checklist.

4. Minimum Requirements

The Committee asks EPA to consider the benefit of requiring some minimum requirements for the performance path, such as the Thermal Bypass Checklist, maximum duct leakage rates, and maximum air leakage rates. The Committee believes that such requirements would lessen the potential for ENERGY STAR-qualified homes to exhibit poor performance in these critical areas.

5. Implementation Date

The Committee supports the proposed effective date of January 1, 2006 for the new specification. However, Committee members request that EPA institute a grandfather period that would allow homes with plans submitted and/or started in 2005 to qualify under the existing program.

B. Comments on Performance Path Requirements

1. Heating and Cooling

¹ RESNET Adopted Enhancements to the Mortgage Industry National Home Energy Rating Standards, December 23, 2004, Page 33 Amendment TECH: 2004-01 Insulation Inspection Procedures, which are to become effective 1/1/06 for Chapter 3.

With regard to the heating and cooling equipment levels proposed by EPA, the Committee supports the two-region approach, as well as EPA's proposal to incorporate ENERGY STAR-qualified heating and cooling equipment into the Homes program.

In addition, the Committee supports EPA's inclusion of right sizing, though it has several questions about how this requirement would be implemented. First, EPA should consider the benefit/cost of sizing requirements for all equipment, particularly because the savings value of a sizing requirement, taking into account verification costs, may not be sufficient for high-efficiency gas heating equipment. Second, the Committee asks that EPA identify what tools/methodologies are acceptable to determine if equipment is sized correctly, including design conditions. Finally, EPA should specify limits on over-sizing for each equipment type.

On a related note, the Committee asks EPA to consider whether sizing requirements are appropriate for ENERGY STAR furnaces with variable-speed fans and multi-stage gas valves, as it is the Committee's understanding that over-sizing impacts these equipment types less than other furnaces types.

Finally, the Committee recommends that EPA consider adding combustion safety testing as part of HVAC requirements in new homes.

2. Ducts

The Committee applauds EPA's efforts to incorporate ducts into the Homes program, though has concerns with the timing associated with the transition to the more stringent proposed levels. Specifically, the Committee questions whether the infrastructure to support duct testing, sealing, and insulation exists currently in all parts of the country. As a result, the Committee recommends that EPA modify the proposed 4 cfm leakage rate to the outdoors per 100 sq. ft. to 6 cfm for 2006 and set in place a timeline whereby the leakage could be lowered to 4 cfm in the future.

The Committee recommends a similar approach to duct insulation. The proposed use of current IECC insulation levels in the specification may be problematic for program implementation due to material availability. The group suggests use of R-6 insulation levels in 2006, with future consideration by EPA and stakeholders of incorporating R-8 insulation into the program.

Finally, the Committee recommends that EPA consider requiring R-4 insulation around ductwork within conditioned spaces in predominantly cooling climates only. Committee members agree that this practice can help to prevent condensation in cooling climates, though in heating climates it may provide marginal benefit to the homeowner.

3. Lighting and Appliances

The Committee applauds EPA's inclusion of lighting and appliance requirements within the ENERGY STAR Homes specification, though several changes are recommended. First, the group recommends that EPA consider allowing screw-base CFLs to be used as an alternative to hardwired fixtures. This approach has been used successfully in many new construction

programs in the absence of widespread availability of ENERGY STAR-qualified fixtures in all decorative styles and at all price points.

The Committee encourages EPA to revisit the question of allowing screw-base CFLs to be used in the future, and recommends that a research effort is undertaken in 2007-2008 to ensure adequate availability of fixtures before the Advanced Lighting Package is incorporated in 2009. If the results of that research show that availability is not adequate to support ENERGY STAR New Homes program activity, the Committee recommends that EPA: 1) work with manufacturers, retailers, and builders to ensure that the market can support the requirement, and/or 2) continue to allow screw-base CFLs in the program at that time.

Second, if EPA agrees to incorporate screw-base CFLs, the number of ENERGY STAR light fixtures, ENERGY STAR ceiling fans, light fixtures using screw-base CFLs, and ENERGY STAR appliances required in an ENERGY STAR home could be increased to ten or 50% of the total, whichever is less (i.e. in the case of low-rise multifamily buildings, ten may be too large a number). This would provide additional energy savings and, with the incorporation of screw-base CFLs, would present a lower barrier to builder participation.

Third, the Committee commends EPA's identification of locations in the home that cannot be counted towards compliance (Footnote 12). However, the Committee asks that EPA additionally recommend high-use areas of the home, like kitchens and bathrooms, in which the fixtures may be installed to maximize energy savings. The 2006 RESNET definition of "Qualifying Light Fixture Locations" and/or the high-use areas that the ENERGY STAR Advanced Lighting Package has identified could serve as models for this list.

Lastly, the Committee recommends that ENERGY STAR ventilation fans be allowed to count toward the total number of lighting and appliances needed to earn an ENERGY STAR label. Further, the Committee recommends that portable ENERGY STAR appliances, such as dehumidifiers and room air conditioners, be explicitly excluded from the lighting and appliance count. A specific listing of exactly what would be included and excluded would help clarify these questions.

4. Windows

The Committee supports EPA's inclusion of ENERGY STAR windows within the proposed ENERGY STAR Homes specification. However, given the high market penetration of ENERGY STAR-qualified windows nationally and the fact that the ENERGY STAR specification is the same as the IECC requirement in many climate zones, the Committee urges EPA to recommend to DOE that it begin revising the windows specification as soon as possible.

On a related topic, the Committee recommends that EPA remove the distinction between homes with less than or greater than 21% glazing within the specification. If this approach is not viable, the Committee asks EPA to consider simply requiring the performance path for all homes that incorporate over 21% glazing. This would simplify a very complex component of the specification, without sacrificing energy savings.



5. Water Heaters

To provide the homeowner with greater assurance of combustion safety, the Committee recommends that for gas equipment EPA allow only direct-vent/sealed combustion or power-vented water heaters to be used in ENERGY STAR Homes. Due to the fact that there is limited availability of these products at the currently proposed 0.60 EF level, the Committee urges EPA to consider recent research conducted by NYSERDA and others in setting an appropriate specification level for these products.

The Committee also recommends that stand-alone oil water heaters be allowed within the specification, as these units are commonly installed in the Northeast.

6. Thermostats

The Committee supports EPA's proposal to include programmable thermostats within the Homes specification.

Again, the CEE Home Performance Committee would like to thank EPA for the opportunity to comment on the proposed changes to the 2006 ENERGY STAR Homes specification. Please contact CEE Residential Program Manager Rebecca Foster at (617) 589-3949 ext. 207 with any questions about these comments.

Sincerely,

A handwritten signature in black ink that reads 'Marc J. Hoffman'. The signature is written in a cursive, flowing style.

Marc Hoffman
CEE Executive Director

Supporting Organizations:

Efficiency Vermont
National Grid
Northeast Utilities
Northwest Energy Efficiency Alliance
PacifiCorp
United Illuminating
Wisconsin Division of Energy