



ENERGY STAR New Homes Proposed Guidelines Comment Form

Thank you for your submission. Please note that only comments included on this form will be accepted.

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



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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



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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.