



Department of Energy
Washington, DC 20585

May 17, 2005

Dear ENERGY STAR[®] Windows Stakeholder:

Following the establishment of the current qualifying criteria for ENERGY STAR Windows, Doors, and Skylights in May 2003, some partners and stakeholders requested that the U.S. Department of Energy (the Department) examine the development of equivalent energy performance levels, consisting of trade-offs of higher U-Factors with lower Solar Heat Gain Coefficients (SHGC), in the four climate zones. The Department agreed, holding a stakeholder meeting in September 2003 and conducting two rounds of comments on the analyses provided for industry review.

After evaluating stakeholder comments, the Department has decided to amend the qualifying criteria for ENERGY STAR for Windows, Doors, and Skylights to allow windows and doors with energy performance equivalent to the current prescriptive criteria to qualify for ENERGY STAR in the Southern and South Central climate zones, excluding California. This amendment will take effect September 19, 2005. On this date, partners may begin to label and promote newly qualified products. (Refer to "Implementation" below for more detailed information).

BACKGROUND

Equivalent energy performance levels are based on the *Analysis Results for Performance Based Ratings for the ENERGY STAR[®] Windows Program* prepared by Lawrence Berkeley National Laboratory (LBNL), dated October 1, 2004.

The performance amendment does not allow for U-Factor and/or SHGC trade-offs in either the Northern or North Central zones. In the Northern zone, the ENERGY STAR U-Factor criterion is set at the same level as the International Energy Conservation Code (IECC) prescriptive requirements and allows no latitude for a trade-off. In the North Central zone the current criteria are close to optimal and therefore allow no trade-off.

The Department is including the Southern zone in this amendment as trade-off solutions are possible. Many impact-resistant hurricane windows using laminated Low-E glass have higher U-Factors but can save equal or more energy with lower SHGCs.

In adopting this amendment the Department meets its stated goals of defining alternative qualification criteria that:

- offer equal or greater average energy savings than the current prescriptive criteria,
- provide greater flexibility in U-Factor performance ratings,
- meet or exceed prescriptive building energy codes in the applicable regions,

- have no other adverse market impacts, and
- enhance the value of the overall program.

While there were comments supporting and opposing the establishment of an equivalent energy performance amendment, the Department believes the amendment offers an overall benefit to the industry and consumers. This amendment is expected to:

- **Maintain a competitive market for the window industry:** The amendment will maintain a competitive marketplace for all types of windows, as it will enable energy efficient aluminum windows to qualify in the South Central zone, excluding California. Under the prescriptive criteria, no aluminum windows qualified.
- **Increase the availability of ENERGY STAR qualified aluminum windows that meet hurricane protection code requirements:** The amendment will enable a greater range of impact-resistant products to qualify in the Southern zone. In Florida in 2003, 50 percent of all windows sold were hurricane-resistant (AAMA/WDMA 2004), a proportion likely to increase after last season's devastating series of storms. The availability of ENERGY STAR qualified products will ensure a greater proportion of hurricane-resistant windows sold are also energy efficient.
- **Provide greater diversity of product alternatives to consumers:** The amendment will allow consumers the flexibility to obtain ENERGY STAR qualified windows with different characteristics to accommodate performance, structural, aesthetic, or other factors of concern.

Stakeholders raised several concerns about a performance-based amendment:

- **Would be confusing to consumers:** Some stakeholders felt the added complexity in the qualification criteria would confuse consumers and undermine the value of ENERGY STAR as a simple and direct tool for communicating superior energy performance. The product qualification label and the new display unit label system will enable consumers to easily understand whether and in what regions a product qualifies without needing additional technical detail. To maintain this simplicity, the Department will introduce product qualification and display unit labels with a map highlighting the current Southern and South Central zones, excluding California. The Department believes this amendment will be predominantly invisible to consumers.
- **Results in increased energy use in some cities:** Some stakeholders noted products qualifying under an equivalent performance amendment would use more energy in several cities in the South Central zone. However, it is also true that products meeting the minimum current prescriptive criteria would use more energy than those qualifying under the equivalent performance amendment in other cities in this zone. The Department's goal is to establish qualifying criteria expected to generate the greatest average energy savings across each climate zone.
- **Allows products with a lower average performance to qualify:** The Department established specific minimum U-Factor and SHGC performance levels for the current prescriptive ENERGY STAR qualification criteria in May 2003. All products produced by ENERGY STAR partners meeting these criteria can be labeled as ENERGY STAR, even though there is a range of efficiency among qualified windows.

ENERGY STAR does not distinguish efficiency levels among qualified models, and will treat equally models qualifying under either the performance or prescriptive criteria.

- **Sets a precedent that may not be warranted in the future:** Some stakeholders felt by allowing a performance-based trade-off at this time the Department was committing itself to permanently incorporating such features into the ENERGY STAR criteria. As a general guideline, the Department encourages performance-based specifications that are technology neutral and offer the greatest manufacturer flexibility, while achieving energy efficiency goals. Furthermore, in the long-term, if the Department achieves its Research and Development goal of dynamic glazings becoming widely available, a performance-based rating system will be necessary. In the near-term, the Department will continue to examine criteria and program options based on their merits in each revision cycle.
- **Derives from estimates based on uncertain assumptions:** Some stakeholders felt the ongoing debate regarding the accuracy of various assumptions in the RESFEN performance assessments used for the regression analysis undermined the validity of the findings. As part of the feasibility assessment for the equivalent performance amendment, the National Fenestration Rating Council (NFRC) reviewed the assumptions and recommended no changes be made at this time. It should be noted these same assumptions were used for the analysis that supported the establishment of the prescriptive criteria. While the current assumptions are not fully endorsed by all stakeholders, they represent the best currently available. The Department strongly encourages industry to work within the NFRC organization to conduct pre-competitive research to resolve any remaining issues.
- **Would promote marketing of products with sub-optimal visible light transmittance:** Some stakeholders and the Department were concerned the amendment would lead manufacturers and retailers to offer products with very low visible transmittance, which would not be in the best interest of consumers. However, the majority of stakeholders and the Department agreed, that since consumers are fully able to evaluate significant differences in visible transmittance, the marketplace would determine whether such products are commercially-viable and desirable.
- **Requires performance levels that cannot be delivered at all or at least cost-effectively:** Some aluminum industry stakeholders felt the 0.43 or 0.42 U-Factor required for qualification in the South Central zone, excluding California, could not be achieved with existing technology or if such a product could be designed it could not be sold at a competitive price. It is true there are very few windows listed in the NFRC database meeting the new criteria, especially for the popular sliding window styles. However, the majority of the industry indicates it believes such products, while challenging, can be developed. Stakeholders also indicated this amendment will provide industry with the impetus to develop more efficient products.

IMPLEMENTATION

The amendment will go into effect September 19, 2005. With feedback from industry, the Department established this transition period to allow partners the necessary lead time to prepare for amendment implementation. On September 19, partners may begin to distribute products qualified under the amendment bearing the ENERGY STAR label, to use the appropriate ENERGY STAR display unit label on product displays, and to market these products as ENERGY STAR qualified [for the appropriate climate zone(s)] in point-of-purchase materials, product literature, Web sites, and other marketing materials.

Partners wishing to label and promote products qualifying under the equivalent energy performance amendment must take the following steps:

- 1) Submit NFRC Certified Products Directory (CPD) numbers to windows@energystar.gov for the Department, via its contractor (D&R International), to confirm qualification; D&R will provide the graphics templates for the appropriate product qualification labels.
- 2) Download the templates for display unit labels and marketing materials [e.g. promotional (four-zone) maps and criteria tables] from the ENERGY STAR Web site at: <http://www.energystar.gov/windows> (select the “Partner Resources” link in the right navigation menu).
- 3) Submit all major marketing materials (e.g. product literature, point-of-purchase materials, etc.) to windows@energystar.gov for review and approval prior to final printing to ensure that ENERGY STAR is used consistently with program guidelines and in a way that would not be misleading to consumers.
- 4) Label qualifying products and display units and use ENERGY STAR to market them.

Partners may take the first three steps at any point before or after the amendment’s effective date.

Partners not qualifying products under the amendment need not make any immediate changes to their current labeling or marketing efforts. However, where promotional maps, criteria tables, or descriptions of the ENERGY STAR qualification criteria are used in sales and marketing materials, partners should update these materials during the next regular revision cycle to reflect the current program structure.

Questions regarding implementation may be addressed to D&R International at windows@energystar.gov.

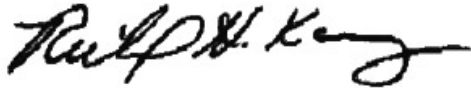
FUTURE

The Department would like to emphasize that beyond establishing this amendment it plans no additional changes to the qualification criteria in the near-term. The Department will continue to monitor trends in codes and standards, developments in the market and new technologies, and will work closely with partners to ensure the criteria provide meaningful differentiation for qualified products. When specification adjustments become necessary, partners will be given advance notice and every opportunity to participate in the criteria development process.

Questions or comments on the new equivalent energy performance amendment to the ENERGY STAR criteria for windows and doors may be addressed to me at Richard.Karney@ee.doe.gov or by facsimile at (202) 586-4617.

Thank you for your participation in ENERGY STAR.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard H. Karney". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

Richard H. Karney, P.E.
ENERGY STAR Products Manager
U.S. Department of Energy

Enclosure



ENERGY STAR[®] for Windows, Doors, and Skylights

Eligibility Criteria Energy-Efficiency Specification

Equivalent Energy Performance Amendment for Windows and Doors

South/Central Zone* (Excluding California)

| | U-Factor | SHGC |
|------------------------|----------|--------|
| Prescriptive | ≤ 0.40 | ≤ 0.40 |
| Equivalent Performance | ≤ 0.41 | ≤ 0.36 |
| | ≤ 0.42 | ≤ 0.31 |
| | ≤ 0.43 | ≤ 0.24 |

* Products meeting these criteria also qualify in the Southern zone.



South/Central
Cooling & Heating

Southern
Mostly Cooling

Southern Zone

| | U-Factor | SHGC |
|------------------------|----------|--------|
| Prescriptive | ≤ 0.65 | ≤ 0.40 |
| Equivalent Performance | ≤ 0.66 | ≤ 0.39 |
| | ≤ 0.67 | |
| | ≤ 0.68 | ≤ 0.38 |
| | ≤ 0.69 | ≤ 0.37 |
| | ≤ 0.70 | |
| | ≤ 0.71 | ≤ 0.36 |
| | ≤ 0.72 | ≤ 0.35 |
| | ≤ 0.73 | |
| | ≤ 0.74 | ≤ 0.34 |
| | ≤ 0.75 | ≤ 0.33 |

* Equivalent performance criteria do not apply to skylights.