Department of Energy
Washington, DC 20585

May 28, 2003

Dear ENERGY STAR® Windows Stakeholder:

After carefully reviewing and considering stakeholder comments, the analyses and the rationale decision factors, the Department of Energy will amend the qualifying criteria for the ENERGY STAR Windows, Doors and Skylights program according to the Four-Zone Alternative described in *An Evaluation of Alternative Qualifying Criteria for Energy Star Windows: February, 2003,* and presented in final form in the attached document.

In adopting these criteria the Department meets its stated goals of:

- Increasing energy savings beyond those achievable with the current ENERGY STAR criteria;
- Setting the ENERGY STAR criteria at a level consistent with, but more stringent than code wherever practical; and
- Providing consumer-friendly guidance on selecting high-performance windows.

While there was significant feedback in support of the Three-Zone Alternative, the Department and many stakeholders believe the Four-Zone Alternative offers the greatest overall benefit to the nation, industry and consumers. Adoption of these criteria is expected to:

- **Maximize national energy savings:** The ultimate goal of the ENERGY STAR program is to increase the efficiency of the nation's use of energy. The Department's energy analyses indicate adoption of the Four-Zone Alternative would save more energy than the current ENERGY STAR windows qualifying criteria, the IECC 2000 criteria, and the Three-Zone proposal.

- **Provide greater economic benefits to consumers:** The Department's economic analysis indicates that, on a national basis, consumers would save more money on energy bills with the Four-Zone Alternative.

- **Better reflect actual climatic zones:** The four climate zones were developed based on a traditional system of climate classification used in many other disciplines and more accurately reflect actual climates across the country. The combined use of cooling degree days and heating degree days more accurately considers regional climatic conditions such as humidity and other factors affecting consumer comfort.

- **Allow for consistent definition and representation of climate zones across the Department's building programs:** The Four-Zone map builds on work performed by other Department programs including building energy codes, Building America, and Energy Smart Schools, all which focus on the energy efficiency of buildings. It is also consistent with the proposal the Department submitted March 28, 2003, for the International Energy Conservation Code (IECC) 2003 code change cycle. Use of consistent climate zone definitions will facilitate cooperation and complementarity between Department programs.

- **Maintain a competitive market for the glass industry and flexibility for the consumer:** The Four-Zone Alternative maintains a competitive marketplace for all types of high performance low-e glass products. It also allows consumers the flexibility to obtain ENERGY STAR windows with different characteristics to accommodate building orientation, passive shading characteristics, or other factors of concern.

Stakeholders raised four principal concerns about the Four-Zone Alternative:

- **Ease of use:** Some stakeholders argued four climate zones would be harder for both suppliers and consumers to understand. The Department believes that, conceptually, four climate zones are not appreciably more difficult to comprehend than three. Although there may be some initial confusion from the new, more complex map, the Department intends to provide resources and educational materials to ease the transition.

- **Increased manufacturer expense:** Stakeholders indicated the Four-Zone Alternative would create greater complexity and expense in their manufacturing, labeling, marketing, and logistics, increasing operating costs and reducing profitability. The Department expects most manufacturers will offer products qualifying in two or more regions, reducing the need for more complicated product offerings and labeling. In addition, the Department plans to work with manufacturers to identify options to simplify labeling requirements for qualified windows.

- **Reduces comfort:** The higher solar heat gain coefficient (SHGC) allowed in the North Central region under the Four-Zone Alternative, while reducing wintertime heating requirements, might also reduce the summertime comfort benefits lower SHGC windows can provide. However, windows with lower SHGC will also qualify in this zone, and partners may wish to offer and advocate the selection of lower SHGC windows in regions with notable summer cooling needs.

- **Reduces opportunities for peak shaving:** Because the Four-Zone Alternative produces less cooling energy saving, it offers less opportunity to alleviate peak energy demand and aid regions such as New York, Connecticut and California, where energy production is often strained in the summer months. The Department believes this problem can best be addressed using other strategies including promoting the sale of low SHGC products in areas prone to peak load spikes due to cooling demand.

Finally, some stakeholders raised concerns about both the Four-Zone and the Three-Zone Alternatives:

- **Reduces availability of ENERGY STAR qualified aluminum windows meeting hurricane protection code requirements:** The Department's analysis determined the proposed changes would not significantly reduce the number of ENERGY STAR qualified non-thermally broken aluminum windows in the southern zone. In addition, recent changes to the National Fenestration Rating Council (NFRC) modeling procedures are expected to make it easier for aluminum windows to meet the proposed criteria.

- **Reduced market access for aluminum frame windows:** With current technology, aluminum frame windows are not expected to be able to meet the stringent U-factor (≤ 0.4) imposed under both the Four-Zone, South Central and Three-Zone, Central climate zone alternatives. In addition, the Four-Zone, South Central and Three-Zone, Central climate zone alternatives, include portions of the southern zone under current ENERGY STAR qualifying criteria, potentially limiting the area where aluminum windows would qualify for the ENERGY STAR program. This is unfortunate, but as noted above, one of the principal goals for the new ENERGY STAR windows qualifying criteria was they be set more stringent than code wherever practical. For the new criteria to be consistent with fundamental goals of the ENERGY STAR program, we believe a U-factor ≤ 0.4 is necessary for the South Central climate zone.

Given the concerns raised by the aluminum frame window manufacturers and for other reasons, the Department wishes to explore the concept of a "performance based" approach with industry and other stakeholders. Like the prescriptive requirements in the IECC code, we currently rely upon a "design based" approach specifying threshold levels of SHGC and U factors. Other factors, including various combinations of SHGC and U factors in a given geographical area, air leakage and product durability are also attributes that arguably determine the total performance of a given window product in a given area. If it is possible to capture these attributes while maintaining a level of consumer-friendly guidance consistent with other ENERGY STAR goals, we would be most interested in working with industry and other stakeholders to develop such an approach. We will schedule a workshop to explore this possibility in the coming months.

Finally, I want to highlight that public comment made a difference in the outcome of the Department's decision. Our letter of February 11 indicated that the "Three-Zone Alternative" was our "preferred" alternative. The comments we received, however, effectively convinced me that the Four-Zone Alternative best serves the interests of the nation, the industry, and the consumer since it will reduce overall energy savings and result in greater economic return and flexibility for the consumer; it will enable more accurate and consistent climate delineation; and it will maintain a competitive low-e glass market. This is a further validation to me that our process attempts to be as open and transparent as possible, and that public comments are of tremendous value to us in determining the right course of action.

The new ENERGY STAR windows qualifying criteria are attached and will go into effect August 29, 2003. For partners to make the necessary changes to their product and marketing materials, a transition period for full program implementation will end on November 30, 2003.

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

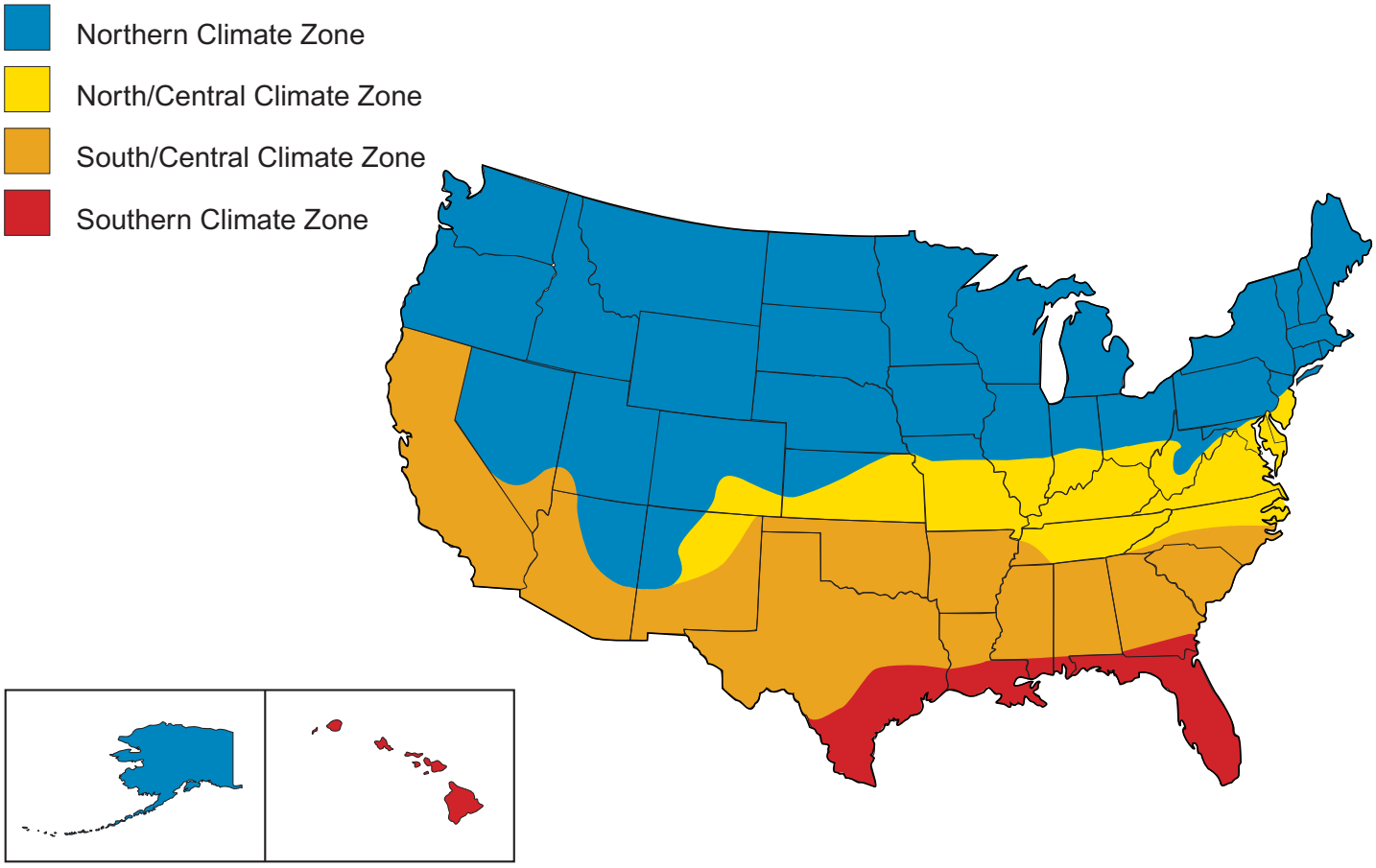
Thank you for your participation in ENERGY STAR.

Sincerely,

David K. Garman
Assistant Secretary
Energy Efficiency and Renewable Energy

Attachment

ENERGY STAR® Qualification Criteria for Windows, Doors and Skylights

ENERGY STAR Qualification Criteria for Windows and Doors			
Zone	Approximate HDD/CDD Coverage	U-factor	SHGC
Northern	≥ 5,400 HDD	≤ 0.35	Any
North/Central	3,600 - 5,400 HDD	≤ 0.40	≤ 0.55
South/Central	6,300 - 4,500 CDD	≤ 0.40	≤ 0.40
Southern	≥ 6,300 CDD	≤ 0.65	≤ 0.40

ENERGY STAR Qualification Criteria for Skylights			
Zone	Approximate HDD/CDD Coverage	U-factor	SHGC
Northern	≥ 5,400 HDD	≤ 0.60	Any
North/Central	3,600 - 5,400 HDD	≤ 0.60	≤ 0.40
South/Central	6,300 - 4,500 CDD	≤ 0.60	≤ 0.40
Southern	≥ 6,300 CDD	≤ 0.75	≤ 0.40