Gentlemen:

Thank you for reviewing our comments on the Most Efficient Window criteria:

Our company is a member of the Earthwise Group, the nation's largest alliance of independent vinyl window manufacturers, with 13 members who collectively produce over 500,000 vinyl windows annually.

The three principle performance requirements for windows to be eligible for the Most Efficient program relate to U-Value, Solar Heat Gain Coefficient, and Visible Transmittance. We understand, and have numerous paths to satisfy, the U-Value requirement of .20 in all climate zones. All of these paths do require triple glazing, except in the case of Picture Windows, which because of the low frame-to-glass ratio in the size used for simulations, can in some circumstances meet the requirement with high performing dual glazing options.

Solar Heat Gain and Visible Transmittance do present challenges. The baseline VT number for a typical non-LowE dual glazed double hung vinyl window with clear/clear glass is in the 60-62 range without grids, and 55-57 with grids. Sliding windows typically have a higher frame-to-glass ratio, and therefore a slightly lower VT for this baseline window. Casements typically have an even lower VT for our baseline dual glazed clear/clear window of roughly 56 without grids, and 50 with grids. Adding a third piece of clear glass further reduces these baseline numbers- and still can not meet the U-Value of .20. Finally, incorporating LowE coatings on two of the three pieces of glass, which is required for most paths to the .20 U-Value in these window styles, will take the VT close to, or below, the .40 VT threshold. In nearly all cases, the addition of grids will take the VT below the .40 requirement.

The result is that a glass package that will meet the requirements for a non-grid double hung, may very well not meet the requirements if grids are added, or if a slider or casement is called for. We question whether these variations in performance results for sliding and casement windows, as well as the inclusion of grids, have been taken into consideration in the formulation of the Most Efficient criteria.

Further, the program calls for higher SHGC numbers in the Northern Region, and then progressively lowers the SHGC requirements in each step toward more southern regions. While these criteria are appropriate, the plan as written does not call for lower VT numbers as the SHGC requirements are lowered. This feature virtually eliminates the triple silver LowE coatings (such as PPGs SB70 and Cardinal's 366), which deliver the desired lower SHGC for southern regions, because they do cause somewhat lower VT.

The current Energy Star program sets performance requirements for U-Value and Solar Heat Gain Coefficient, but is silent with regard to Visible Transmittance. We suggest that VT relates more to

aesthetics than thermal performance, while SHGC is a valid measure of thermal performance. If the goal of the Most Efficient program is to exclude very low SHGC products from the northern zone, where they can be less efficient, then we suggest that requiring a minimum SHGC for that region is a better solution than a minimum VT.

Companies today routinely market products that do not meet the VT requirement of the Most Efficient program, but exceed the U-Value and SHGC criteria, although they represent a small percentage of the market because of their cost. Thermally, many of these products are demonstrably superior to products that can qualify for Most Efficient, and if the present requirements stand, they will no doubt be marketed as superior to Most Efficient. We believe that is an unfavorable outcome for the Energy Star program, which can be averted by either adjusting the VT as SHGC is adjusted, or preferably, by establishing an appropriate SHGC range by climate region.

Respecfully,

Carl Slocomb

Slocomb Windows and Doors