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**Subject:** [WARNING: SPF validation failed] Energy Star Version 7.0 Specification Discussion  
**Date:** Friday, October 18, 2019 12:20:57 PM

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Below are responses to some of the questions presented in the Energy Star version 7.0 Specification Discussion Guide from Paradigm Window Solutions. We have not responded to every question, but please accept our input on those that we have.

We have one general comment regarding market share, and the use of Energy Star certification as a means for consumers to differentiate among products. Understanding that EPA does not target specific market share thresholds, but does consider that when proposing revisions, it is important to note that Energy Star certification in the WDS market is largely code or specification driven, and therefore consumers are not necessarily “choosing” Energy Star products. This is in contrast to many other Energy Star certified products (e.g. appliances, electronics, etc.) where consumers can make a buying decision on their own as to whether choosing the Energy Star certified products would be of enough value to them. In the case of fenestration products, building codes will often make that a requirement rather than a decision, so it would be expected that the percentage of certified products would remain high out of necessity.

Comments on specific questions or groups of questions:

*2. What are the most common pathways (component combinations) that manufacturers use to make ENERGY STAR certified products?*

The most common pathway used is glass package configurations. Use of different low-e glass types and gas fills, within existing overall thickness parameters, typically represents the quickest and most cost-effective method of achieving performance improvements. After that, the use of foam-fills in sash and frame members is employed to make incremental performance gains.

*5. What sources should EPA consider when evaluating what is a reasonable payback period for building materials like WDS?*

In addition to considering the length of time a homeowner stays in a home, there should be some consideration given to the fact that when discussing replacement products, homeowners often make these improvements after some years of homeownership. Therefore, the payback period may be significantly shorter when viewed from time of installation, rather than the start of ownership. Homeowners are typically installing energy efficient windows with a goal of not just getting a payback on their investment, but of realizing savings beyond that. Most homeowners would prefer a relatively short payback period that allows them to see those additional savings while still in the home. Another consideration for payback calculation for replacement windows is that older homes may be very inefficient in other areas (roofs, walls, etc.) and the only way to get a true measure of payback would be through an onsite energy audit. In some cases, this may reveal that even Energy Star certified windows will not achieve a payback when considering the other energy deficiencies of the home.

*6. What other methods for estimating the incremental costs of energy performance improvements*

*for windows, doors, and skylights should EPA consider?*

*7. Which incremental cost estimation methods are the most accurate?*

*8. Are there any additional component categories that EPA should consider researching?*

The methods discussed seem to primarily focus on components and material costs. The changes required to implement some performance improvements can often extend well beyond direct material costs. For example, introducing a new spacer system could require substantial capital investment in equipment, or may affect the amount of labor required to produce the units. Changes to IG configurations, such as overall thickness, or use of triple glazing, may require redesign of window extrusions to accommodate them. This in turn leads to new processing tooling and equipment, which again can be substantial where a manufacturer has already invested in custom automated equipment. The total true cost to manufacturers of keeping their products Energy Star compliant should be considered.

*11. Should EPA consider setting a minimum SHGC in the Northern climate zone?*

*12. What impact would a minimum SHGC have on product availability, consumer expectations, and the veracity of the ENERGY STAR label in the window market?*

Setting in minimum SHGC could limit consumer choices. While the use of higher SHGC products can be beneficial for passive solar heating, there are many variables of architecture and exposure that may make high solar heat gain undesirable in some instances. While the Northern climate zone is heating-dominated, there are still significant periods that require cooling and, depending on the specific exposure, solar gain may be quite undesirable. Being a heating-dominated climate, many homes in the region do not have efficient central air conditioning and rely on less efficient room air conditioners during cooling months.

*13. Should EPA consider moving IECC Zone 5 out of the ENERGY STAR Northern climate zone and into the North-Central climate zone?*

*14. What impact would changing climate zone boundaries have on consumers and partners?*

*15. What characteristics are most common among ENERGY STAR certified windows sold in IECC Zone 5?*

Moving Zone 5 into the North-Central zone appears to make sense, if the latest climate data and energy models support that. This would open up more options for consumers to choose Energy Star certified products that best suit their individual requirements, without being over-prescriptive of products primarily designed for colder climates.

*23. What is the market penetration of products with dynamic glazing or integrated shading systems for residential applications? Do stakeholders expect the market for such products to expand in the next few years?*

*24. How should the process for certifying and listing dynamic and/or integrated products be revised to better evaluate the performance and availability of such products?*

Currently the market penetration of these products is relatively low, and is primarily in door products. The overall impact of these products on energy performance would be very difficult to evaluate accurately over the range of uses by consumers. While some consumers may actively adjust these products to best take advantage of including or excluding passive solar gains, many others may not due to the need to be in the home at the right times of day, and others employ these simply for privacy without regard for energy performance.

*25. What share of residential WDS are sold in places where high-altitude and/or impact-resistant products are necessary?*

*26. Should EPA reconsider allowances for high altitude and/or impact resistance in a potential revised specification, and why or why not?*

With respect to impact resistant products, these are largely used when specified by building codes. Few homeowners choose the added expense of impact resistant products on their own. The comments regarding labelling complexity, and lower energy savings would appear to be appropriate.

*27. Should EPA consider extending the effective date beyond the typical 9 to 12 months after release of a final specification?*

*28. How would an extended implementation schedule make it easier to meet a potential revised specification?*

As noted in earlier comments, the changes required my manufacturers to meet revised specifications can be significant in terms of product redesign and equipment investments. Extending effective dates would allow more reasonable time to carefully research options, design them into products effectively, specify any new tooling or equipment, and have that equipment fabricated and installed. Not every revision is going to require changes to that extent, but what is required to make the incremental change will vary between manufacturers, and may put those who do need to make larger scale changes at a significant disadvantage unless they have the additional time to react.

Paradigm Window Solutions

