



April 4, 2022

Mr. Doug Anderson
ENERGY STAR Program
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460-0001

Subject: ENERGY STAR® Version 7.0 Residential Window, Door, and Skylight Draft 2 Specification and Version 7.0 Draft 1 Response to Comments.

Dear Mr. Anderson:

The Window and Door Manufacturers Association (WDMA) appreciates the opportunity to comment on EPA's ENERGY STAR Product Specification for Residential Windows, Doors, and Skylights Eligibility Criteria Draft 2 Version 7.0 (Draft 2 Specification) and Response to Comments on Version 7.0 Draft 1 Specification (Draft 1 Comment Responses). As EPA knows, WDMA members are leading producers of commercial and residential doors, windows, and skylights for domestic and export markets and have been committed supporters of the ENERGY STAR Window, Door and Skylight Program since its inception. Our members have contributed greatly in growing the ENERGY STAR brand in the window, door and skylight sector because of the great benefit it has been to consumers and energy savings.

We and our members have carefully reviewed the Draft 2 Specification and the Draft 1 Comment Responses EPA has provided. We appreciate the effort EPA has made to date in developing Version 7.0 and providing those documents. However, after our review and based on feedback from our members we are unresolved on most of our Draft 1 comments and the Draft 2 Specifications have generated new concerns.

New Concerns Based on the Draft 2 Specifications:

- Changes to the Equivalent Energy Performance now has lower performing ENERGY STAR compliant windows in the Northern Zone than the North-Central Zone
- Ratcheting down the U-Factor limit for > ½-lite doors in all zones is problematic and not cost justified
- The Version 7.0 implementation date would be more appropriately timed to be at the beginning of a calendar year.

Previous concerns from Draft 1 Specifications not resolved in Draft 2:

- Potentially flawed modeling resulting in inaccurate energy and cost savings findings
- Questionable ENERGY STAR market penetration rate for windows in the Northern Zone and lacking explanation for how that was determined;
- Basing the overall analysis on vinyl-framed products only;
- Relevance of the two different baselines EPA used for its analysis and how they skew actual energy and cost savings and resulting payback periods;
- Payback periods based on length of time a home is owned;
- Maintaining IECC Climate Zone 5 in the Northern Zone.

We believe these new concerns can be readily addressed in the finalized version of ENERGY STAR Version 7.0. The carryover concerns warrant a meeting between EPA ENERGY STAR staff and WDMA to better understand how our concerns can be better addressed going forward. We believe this course is in the best interest of the ENERGY STAR Window, Door and Skylight Program and critical to ensuring that ENERGY STAR certified window, door and skylight products are cost-effective, affordable, and sufficiently available for consumers.

New Concerns

Window equivalency criteria for windows in the Northern Zone:

In Draft 2, the revised modeling software analysis resulted in new window equivalency values in the Northern Zone. These new values resulted in an anomaly when comparing the Northern Zone with the North-Central Zone. With Draft 2, it is now possible to have a window with an 8% worse U-factor (0.26 vs. 0.24) and the same SHGC (0.40) meet the proposed ENERGY STAR requirements in the colder climate zone. If EPA is set on maintaining the alternate equivalency values in the Northern Zone, to rectify this, it is logical to modify the North-Central requirements from the proposed 0.24 to a 0.27 U-factor, which would drop the Version 6.0 Northern Zone window U-factor down to the North Central. This will still be a sizable improvement from Version 6 without the inconsistency of having poorer performing windows in the Northern Zone as compared to the North Central Zone. In no case should the North Central Zone U-factor be more stringent than any option in the Northern Zone. This would be very confusing to explain to consumers.

Increasing the requirements for sliding patio doors:

WDMA thanks EPA for moving sliding patio doors back into the door category (where they have been in previous Versions) and encourages EPA to maintain that decision. However, the U-factor adjustment made for > ½-Lite doors in all four climate zones is problematic. The change from a 0.28 U-factor to a 0.25 U-factor was described as a compromise, however, it appears that no analysis was conducted to justify the cost implications of this change. In addition, the 0.25 U-factor is more stringent in the South Central and Southern zones than it is for the window category from which the doors were moved. WDMA asks that the specification for > ½-Lite doors be moved back to the 0.28 U-factor.

Implementation Date:

WDMA strongly recommends that EPA set an effective date of January 1, 2024, in order to give manufacturers time to make necessary changes in product design, testing, certification, etc., as well as time necessary for marketing and other operational changes that need to be made with any revision to the criteria. Manufacturing equipment modifications and component supplier timelines are also continually lengthening due to on-going supply chain and labor shortage issues. In addition, January 1, 2024 works well as it will coincide with the publication of the 2024 edition of the International Energy Conservation Code (IECC) and making the change at the beginning of a calendar year fits well into fenestration manufacturers' business cycles. If EPA's current implementation plan is followed, the effective date for Version 7.0 will likely be sometime in June or July of 2023. This mid-year time frame will be very challenging for manufacturers as that is historically their busiest time of the year.

It was stated in the Draft 1 specification that *"EPA recognizes stakeholder interest in a specification transition at the end or beginning of a calendar year and will aim to accommodate this"*. WDMA therefore encourages EPA to honor this intent and set an effective date of January 1, 2024 accordingly.

Unresolved Concerns

Potentially flawed modeling resulting in inaccurate energy and cost savings findings:

WDMA appreciates the effort EPA made to reanalyze the energy models using the more recent version (9.5) of EnergyPlus™ and updating the population data to the 2020 census.

However, we do not believe that EPA properly addressed our questions with the analysis methodology. There is a clear conflict with using site energy in the justification analysis. EPA's own ENERGY STAR Portfolio Manager states that *"Source energy is the most equitable unit of evaluation, and enables complete assessment of energy efficiency."* While it appears that this will not be rectified in the ENERGY STAR Version 7.0 specification, WDMA would like to further discuss the potential for misleading results that can come from a site energy analysis. We will reach out EPA this summer to discuss.

Questions about the accuracy of ENERGY STAR market share data for windows in the Northern Zone and lacking explanation for how that was determined:

WDMA understands that the most recent Ducker Study has even fewer respondents compared to the previous study; with the 2020 results based on an even smaller number of respondents relative to 2019. Both of these studies only represent a fraction of the total number of EPA ENERGY STAR partners.

Therefore, WDMA still has a serious concern that the market share data used to develop Version 7.0 is inaccurate. EPA needs to take a fresh look at the data gathering process. WDMA is willing to work with EPA to help improve the methodology and accuracy of market share analysis for future ENERGY STAR updates.

Basing the overall window analysis only on vinyl-framed products is too limiting and inappropriate:

WDMA's concerns on EPA using only vinyl-framed windows as their baseline product in their evaluation remain unresolved. Although vinyl framed windows are a majority of the market, there are other frame types that have significant market share and are important to the consumer. The sizable jump in the Draft 2 requirements will disproportionately impact other common frame types and discourage the use of high performing ENERGY STAR Version 7.0 windows.

EPA Comment 1 regarding Draft 1 cost model response:

"EPA thanks the stakeholders for the feedback regarding the cost model. In the market, consumers can find products at a wide range of cost premiums and performance levels. EPA's analysis found little correlation between price and performance level. EPA found expensive products that had a poor thermal performance level and lower-cost products that had a high thermal performance level."

Respectively, your comment above reinforces the point that the lowest cost vinyl framed products cannot be used to justify the program savings. If the ENERGY STAR Version 7.0 program expects to deliver the energy savings promised, it must model what is actually occurring in the marketplace. Products will be purchased at all levels of pricing and profit models and will not necessarily track with performance. That is because there are many factors that manufacturers take into consideration when pricing their products, including but not limited to profit margin, warranty, sizing, stock vs custom, colors, hardware, and many other consumer driven attributes. This is exactly why the ENERGY STAR Version 7.0 cost savings needs to use "average costs". Doing anything other than that would not model reality and only provide a "best case scenario" that has little chance to ever be realized.

Relevance of the two different baselines EPA used for its analysis and how they skew actual energy and cost savings and resulting payback periods:

WDMA believes both the Market Baseline and Code Baseline EPA used for the Version 7.0 analysis are not valid for accurately evaluating energy savings and cost-effectiveness of the proposed criteria revision. Given the high market share EPA asserts for all ENERGY STAR window, door and skylight products and in particular for windows in the Northern and North Central Zones, ENERGY STAR Version 6.0 criteria is the baseline EPA should be using for evaluating the potential energy savings and cost effectiveness of any proposed criteria revision. Even if the market share were far less, EPA should still be evaluating potential energy savings and cost-effectiveness of Version 7.0 based on Version 6.0 to provide a more accurate estimation of the actual energy and energy cost savings consumers can reasonably expect and if the proposed Version 7.0 would be a benefit in the eyes of the consumer. EPA has attempted to justify using the Market and Code baselines rather than Version 6.0 on the basis that consumers are unlikely to replace Version 6.0 compliant products with Version 7.0 compliant products. While this may be a true statement by itself, it side-steps the fundamental question of whether any criteria revision at all is justified. A cost-effective evaluation must be done on an incremental basis to optimize the best solution for consumers.

Payback periods based on length of time a home is owned are not what consumers consider acceptable:

There are numerous metrics by which cost effectiveness can be determined. For a program as important as ENERGY STAR for Residential Windows, Doors and Skylights, utilizing a 13-year payback period based on home ownership is too simplistic. A payback analysis should incorporate, at a minimum, the useful life of the product, consumer willingness to invest, and basic economic calculations that may include discount rates and other economic parameters. WDMA is willing to work with EPA to help develop an improved process to evaluate the cost effectiveness of window, door and skylight energy efficiency characteristics.

Further, using utility rebate programs, which are not universal or widespread or in place across an entire ENERGY STAR climate zone are not reasonable to use to reduce payback periods.

Move IECC Climate Zone 5 into the ENERGY STAR North-Central climate zone:

WDMA thanks EPA for removing the “island” counties from the ENERGY STAR zones and encourages EPA to maintain that decision. This will help provide more continuity throughout the defined ENERGY STAR regions and improve the rollout of Version 7.0.

However, we still believe that IECC Climate Zone 5 should be moved out of the ENERGY STAR Northern Zone and into the ENERGY STAR North-Central Zone. EPA’s response was that IECC Climate Zone 5 has the largest population concentration in the U.S., and weather data shows that the climate characteristics of IECC Climate Zone 5 are more in-line with the ENERGY STAR North-Central Zone. It is clear EPA has chosen not to do so but only notes one energy savings analysis as the reason without a detailed explanation. EPA should provide a more in-depth explanation of why maintaining IECC Climate Zone 5 in the Northern Zone is appropriate.

Summary

In summary review of our comments, we respectfully request EPA to implement the following changes prior to finalizing ENERGY STAR Version 7.0:

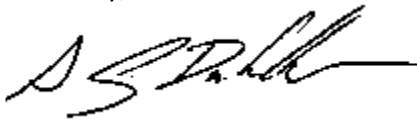
- Adjust the U-Factor for > 1/2-Lite doors from 0.25 to 0.28;
- Adjust the window U-Factor in the North-Central Climate Zone from 0.24 to 0.27;
- Set the implementation date for ENERGY STAR Version 7.0 to January 1, 2024;

In addition, WDMA would like to meet with the ENERGY STAR window, door and skylight team and discuss our unresolved concerns.

Again, we appreciate this opportunity to provide WDMA's comments on EPA's Version 7.0 Draft 2 Specification and Draft 1 Comment Responses. We believe that our requests can be reasonably incorporated into Version 7.0 prior to being finalized. WDMA is as interested as anyone in seeing ENERGY STAR Version 7.0 be successful and believe the actions we are requesting will help ensure widespread participation, significant national energy savings and energy cost savings for consumers. We believe that the actions we are requesting EPA to take will result in a more sound Version 7.0 Specification, and one that is more in-line with ENERGY STAR's Strategic Vision and Guiding Principles.

Please let me know if you would like clarification on any comment we have provided or if there is additional information we may be able to provide as EPA moves toward finalizing the Version 7.0 Specification.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Drumheller', written in a cursive style.

Craig Drumheller
Vice President of Technical Activities