



October 2, 2020

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

Subject: EPA Part 1 Response to ENERGY STAR® Windows, Doors, and Skylights Version 7.0
Specification Discussion Guide Comments

Dear Doug:

Thank you for this opportunity to provide feedback on the component cost data reported in Response to Comments (Part 1) and the proposed use of it by EPA in the three-part product cost methodology research it is performing.

While we understand EPA has specifically asked for feedback on the component cost data in Appendices B and C of the Response to Comments (Part 1), we have additional feedback we wish to provide at this time on EPA's response to stakeholder comments on ENERGY STAR market share data and the energy savings analyses being conducted by Lawrence Berkeley National Laboratory (LBNL) and the National Renewable Energy Laboratory (NREL). That feedback will follow our feedback on the component cost data.

Component Cost Data – Appendices B & C

On the whole, we appreciate EPA's recognition that component costs are only part of the manufacturer's cost and the price ultimately paid by the consumer. Likewise, component costs are also complex in and of themselves and can vary greatly depending upon not just the component materials, but other factors including labor, warranties, distribution, business operations, relationships manufacturers have with suppliers, and market conditions among others. Even if sound component cost data ranges can be confidently determined, they are still of limited use in making assumptions about actual cost increases, product mark-ups and final retail pricing. Recognizing that and given the price ultimately paid by the consumer is the only truly reliable metric that can be used for evaluating cost-effectiveness, we believe that whatever component cost data EPA derives from this exercise, while insightful to product costs in general, should not be used in making determinations of cost-effectiveness.

With respect to the estimated component cost ranges presented in Appendices B & C, we are unable to assess whether the estimated cost ranges for each of the Component Items presented in both charts are reasonable given we do not solicit or maintain this type of component cost data and which we would need in order to make such a determination. However, we and other stakeholders would be able to provide more informed feedback in that

regard based upon a review of all cost data and information EPA has collected from the various sources noted in the Part 1 response, and how it was applied or otherwise considered by EPA in determining the estimated cost ranges presented in the appendices. That information is critical to better understand how EPA arrived at the cost range estimations and to assessing the accuracy of them. For instance, do those cost estimations include the other cost contributing factors noted above? How was the input data collected and how was it used? What other assumptions were made in addition to those noted in the Part 1 response? All of the values also appear to be rounded but there is no explanation of why or how that was done?

In order for stakeholders to provide more detailed and meaningful feedback on the component cost estimations presented in Appendices B and C, EPA should make the base data it collected from the various sources available to stakeholders together with an explanation of how it was collected and used. That information actually needs to be included in any discussion or presentation of component cost data EPA is using in its product cost research and analyses. We are therefore requesting EPA make that information available. We also want to reiterate that regardless of how accurate any component cost estimates are, they are still not appropriate for use in making determinations of cost-effectiveness with respect to proposed ENERGY STAR qualification changes and should not be relied upon for doing so.

Market Share

We appreciate EPA providing additional detail on ENERGY STAR market penetration by product type and climate zone. However, as EPA notes, it is only excerpts from the DuckerFrontier 2019 ENERGY STAR Window & Door Tracking Program report. Further detail on how the findings presented in Appendix A were produced is still needed to assess the accuracy of them, especially with respect to the Northern Zone. That is of particular concern because the market penetration reported for the Northern Zone is significantly higher than what feedback from our manufacturers members indicates.

We understand first-hand how difficult it is, if not almost impossible, to accurately assess the market penetration of ENERGY STAR window, door and skylight products (especially down to single digits) because of the dynamics of this industry and of the new residential construction and renovation markets. We therefore need to understand how such precise findings presented in Appendix A were produced. For instance, were all ENERGY STAR window, door and skylight program partners surveyed? How was the data collected and what questions were asked? What was the response rate? What assumptions were made? Was data collected on product characteristics? Were the eighteen million plus ENERGY STAR windows reported as being sold in the ENERGY STAR Northern Zone in 2018 in fact verified as ENERGY STAR Northern Zone qualified products and if so, how? The same question applies to all products in all zones.

In the interest of transparency, EPA needs to make the full report available to stakeholders so that they have a clear understanding of how the base data was collected and of the methodology that was used to produce the market share data reported in Appendix A.

National Laboratory Energy Savings Analysis

As noted in our comments in response to the Discussion Guide, we support the use of EnergyPlus as the right modeling tool for the national labs to use in performing energy savings analyses for evaluating potential specification changes for Version 7.0. We also appreciate that both LBNL and NREL will be using EnergyPlus Version 8.9 and 9.2 respectively though we would like to have a better understanding of why two versions are being used and hope that will be addressed in the Draft Analysis Criteria Report.

In addition, we support LBNL's eliminating any calibration to RECS data in their analyses. We believe such calibration to RECS data is no longer necessary with the use of the latest versions of EnergyPlus. Accordingly, regarding calibration of the NREL ResStock model to 2009 RECS data, we appreciate the explanation in the Part 1 response for why that was done but want to better understand the need. We are assuming there will be a broader discussion of it in the Draft Criteria Analysis Report which we hope will be helpful in that way.

With respect to the use of TMY 3 weather data, we understand TMY3 is the most comprehensive weather data set readily available at this time, yet it is nonetheless outdated and may not be the latest that LBNL and NREL could potentially obtain. Specifically, more recent comprehensive weather data was used for the latest edition of *ASHRAE 169.1 - Climatic Data for Building Design Standards*. ASHRAE 169.1 was in turn the basis for revising the climate zones in *ASHRAE 90.1 - Energy Standard for Buildings Except Low-Rise Residential Buildings* and in the *International Energy Conservation Code (IECC)*. Those changes shifted portions of some climate zone borders north resulting in roughly ten percent of the over 3100 counties in the U.S. shifting into a warmer climate zone.

Given the ENERGY STAR climate zones are based on those in ASHRAE 90.1 and the IECC, we believe use by LBNL and NREL of the weather data that was used to update 169.1 and leading to the remapping of the ASHRAE 90.1 and IECC climate zones would result in more accurate analyses performed in evaluating potential revisions to Version 7.0. We therefore recommend LBNL and NREL consider reaching out to ASHRAE or the appropriate source to obtain that data.

Conclusion

Again, thank you for this opportunity to provide feedback on EPA's Part 1 response to stakeholder comments on the *ENERGY STAR® Windows, Doors, and Skylights Version 7.0 Specification Discussion Guide*. We look forward to EPA's response.

Sincerely,



Jeffrey T. Inks
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