

November 4, 2019

Mr. Douglas Anderson
ENERGY STAR® Program
US Environmental Protection Agency
Washington, DC 20460

Dear Mr. Anderson:

The Consortium for Energy Efficiency (CEE) respectfully submits the following comments in response to the ENERGY STAR® Version 7.0 Window, Door, and Skylight (WDS) Discussion Guide, released by the Environmental Protection Agency (EPA) on September 4, 2019.

CEE is the binational organization of energy efficiency program administrators and a staunch supporter of the ENERGY STAR® Program. CEE members are responsible for ratepayer-funded efficiency programs in 38 US states, the District of Columbia, and four Canadian provinces. In 2017, CEE members directed over 70 percent of the \$9 billion in energy efficiency and demand response program expenditures in the two countries. These comments are offered in support of the local activities CEE members carry out to actively leverage the ENERGY STAR brand. CEE consensus comments are offered in the spirit of strengthening ENERGY STAR, so it may continue to serve as the national marketing platform for energy efficiency.

CEE highly values the role ENERGY STAR plays in differentiating energy efficient products and services that the CEE membership supports locally throughout the US and Canada. We appreciate the opportunity to provide these comments.

CEE Appreciates the Thoroughness of This Discussion Guide as it Enables a Robust Specification Revision Process

CEE thanks EPA for presenting an in-depth and robust Discussion Guide for industry consideration before committing to any specification revision directions or decisions.

We recognize that windows, doors, and skylights are a particularly unique product category with challenging cost-effectiveness considerations. We appreciate EPA's effort to work with stakeholders and carefully assess next steps through both the release of the detailed Discussion Guide as well as the proposed process for assessing next steps relative to feedback from this stage. CEE finds the contents in the September 4, 2019 document to represent a comprehensive analysis and evaluation of the conditions necessary to evaluate an appropriate course for the ENERGY STAR label relative to this category. Providing a detailed breakdown of program and market developments, in conjunction with ENERGY STAR's brand tenets and Standard Operating Procedures, reinforces the ability for partners to participate in the revision process from a common platform. We view this Discussion Guide as a model for ENERGY STAR stakeholder engagement and encourage EPA to apply similar diligence to all other product areas.

CEE Members are Looking for Meaningful Differentiation of High Efficiency Measures

CEE recognizes that employment of a binary label for the windows, doors, and skylight category remains complex due to local matters of climate, orientation, application, and installation. However, the overall tightness of a home's envelope is the central backbone for ensuring whole house performance, and fenestration is critical to these values. For this reason, utilities continue to need and seek tools or targets to help push the envelope for innovative energy efficiency solutions.

With rising efficiency standards in building codes and climate targets, such as updates to the International Energy Conservation Code® (IECC), Title 24 in California, some Northern climate states or local jurisdictions, and the [Pan-Canadian Framework on Clean Growth and Climate Change](#), current ENERGY STAR qualification criteria for windows, doors, and skylights does not offer significant savings above these evolving baselines. Three CEE Members already incentivize only windows with a U-Factor ≤ 0.22 , which approaches the level of the ENERGY STAR Most Efficient 2019 criteria (U-Factor ≤ 0.20).

Support for More Stringent Energy Efficiency Requirements to Align with ENERGY STAR Brand Tenets

The ENERGY STAR specification for windows, doors, and skylights was last updated five years ago, and yet the market share for each product category that existed prior to the Version 6.0 revision only went *up* after the effective dates. While there are absolutely many factors and variables that impact market share numbers, and it is but one of many market indicators for specification consideration, CEE notes that 62%-84% is much higher than the standard EPA goal of 25% for any given product category. More relevant to this particular end measure is the fact that raising the efficiency criteria in 2014/2015 did not negatively impact the number of available models. Conversely, each of the three product categories actually saw an increase in ENERGY STAR qualified models, and that percent has only increased in the subsequent years (Table 1).

Table 1. ENERGY STAR Market Share of Windows, Doors, and Skylights by Year¹

Product Category	2009	2010	2011	2012	2013	2014	2015	2016	2017
Residential Windows	76%	81%	79%	77%	80%	83%	84%	83%	84%
Hinged Entry Doors	70%	71%	73%	74%	76%	77%	79%	78%	80%
Skylights - All	70%	70%	68%	62%	60%	62%	65%	64%	68%

Given the increasingly high market penetration of ENERGY STAR qualified products, in conjunction with the various rising minimum standards and efficiency goals across the United States and Canada, CEE agrees with EPA that it is time to revisit the specification. We believe that it is important to push efficiency levels for windows where possible, while recognizing cost effectiveness and technological feasibility, in order for the ENERGY STAR label to serve as an effective tool in the market for promoting the highest performing products that save consumers energy. While there is currently a Most Efficient category for windows, doors, and skylights, the traditional ENERGY STAR label holds much more weight and recognition in the market for many end consumers. For this reason, we encourage EPA to pursue revisions through the Version 7.0 specification revision process

¹ ENERGY STAR® Windows, Doors, and Skylights Version 7.0 Specification Discussion Guide. Page 3. September 4, 2019. <https://www.energystar.gov/sites/default/files/asset/document/ENERGY%20STAR%20Version%207%20Window%20Door%20Skylight%20Discussion%20Guide.pdf>

that can effectively differentiate the best performing products while being mindful of cost and technology.

Dynamic Glazing and Shading are Promising Technologies Within an Integrated Home Framework for Utility IDSM Opportunities

CEE has identified the integrated home and connectivity as an opportunity to provide value to utilities beyond traditional energy savings. Members view products that allow for demand response and energy management as critical in the future. Connected functionality affords customers with an extensive number of options to manage energy use wisely, and if desired, allows consumer-authorized third parties to help manage their homes' energy use to save money and reduce the environmental impact to the grid. [CEE comments](#) on the ENERGY STAR Connected Criteria for Large Load Products Discussion Guide from spring 2019 contain further details and explanations of how the entire spectrum of connected products, devices, or components could support our members' vision of an Integrated Home platform that is grid-interactive and efficient. Residential end measures that have sensing and communicating capabilities can deliver savings goals that incorporate time and locational value of energy.

Dynamic glazing and shading may provide such benefits through their ability to send and receive signals or commands, thus allowing optimization of a home's envelope. Research from Lawrence Berkeley National Laboratory suggests that automated controls can result in savings by leveraging sensors (motion, exterior temperature, interior temperature, and solar radiation heat gain) and controls to enable fenestration to actively change states and performance properties as requested². Through our work in other connected product areas, we note that technology evolves, and the market often innovates in manners that cannot be predicted through prescriptive requirements; we therefore advocate the advancement of performance-based objectives in order to maximize savings potential of future commercial products.

CEE looks forward to working with EPA on the prospective role that dynamic glazing and shading could play relative to these integrated demand side management (IDSM) objectives that utilities are working towards. To this end, we support the exploration of including these categories within the Version 7.0 specification revision process.

² Berkeley Lab: Windows & Daylighting – Building Technology & Urban Systems: Highly Insulating Windows with Automated Shading. <https://windows.lbl.gov/highly-insulating-windows-automated-shading>

CEE would once again like to thank the EPA for the opportunity to comment on the ENERGY STAR Version 7.0 Window, Door, and Skylight (WDS) Discussion Guide. Please contact CEE Senior Program Manager Alice Rosenberg at 617-337-9287 with any questions about these comments.

Sincerely,

A handwritten signature in blue ink that reads "Ed Wisniewski". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Ed Wisniewski
Executive Director