Response to Door and Skylight Comments

ENERGY STAR® for Windows, Doors, and Skylights Version 6.0 Criteria Revision

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Responses to Comments on Final Draft Version 6.0 Criteria for Doors

Cost Effectiveness Comments

Comment 1 – Cost Effectiveness

Several commenters believe the door criteria will reduce affordability, offer minimal energy savings, and provide no or minimal payback for the consumer. The commenters also believe the *Cost Effectiveness Review and Analysis* does not address industry comments regarding the lack of payback and cost increases that will result from the proposed door criteria. One commenter believes the lack of energy savings for opaque and greater than half-lite doors means that these criteria should not be revised. One commenter believes the lack of energy savings and long payback periods mean that EPA should not modify any of the door criteria from the current Version 5.0 specification.

EPA Response:

As described in the *Draft 1 Criteria and Analysis Report* and as shown in the table below, EPA selected opaque and less than or equal to half-lite door criteria that match the U-factor and SHGC of manufacturers' best-selling doors under the current criteria. For greater than half-lite doors, EPA has set a U-factor of 0.30 in all zones and an SHGC maximum of 0.40 in the Northern and North-Central Zones, which will allow manufacturers' best-selling doors to continue to qualify under the new criteria. By matching these specifications to the U-factor and SHGC ratings of manufacturers' best-selling doors under the current specification, there is no added incremental cost over Version 5.0. The SHGC criterion for greater than half-lite doors in the Southern and South-Central Zones is the only criterion that exceeds the performance of manufacturers' best-selling products. For this criterion, EPA has opted to match the International Energy Conservation Code (IECC) 2012 SHGC requirement for glazed fenestration in the Southern and South-Central Zones. Raising the greater than half-lite SHGC criteria beyond what EPA has proposed in these zones could result in ENERGY STAR qualified doors that do not meet code.

<table>
<tr><th colspan="2" rowspan="2">Glazing Level</th><th colspan="2">Best-Selling</th><th colspan="2">Final Version 6.0 Criteria</th></tr>
<tr><th>U-Factor</th><th>SHGC</th><th>U-Factor</th><th>SHGC</th></tr>
<tr><td colspan="2">Opaque</td><td>0.17</td><td>N/A</td><td>≤ 0.17</td><td>N/A</td></tr>
<tr><td colspan="2">≤ ½-Lite</td><td>0.25</td><td>0.25</td><td>≤ 0.25</td><td>≤ 0.25</td></tr>
<tr><td rowspan="2">> ½-Lite</td><td>Northern
North-Central</td><td rowspan="2">0.30</td><td rowspan="2">0.26</td><td rowspan="2">≤ 0.30</td><td>≤ 0.40</td></tr>
<tr><td>South-Central
Southern</td><td>≤ 0.25*</td></tr>
</table>

*Matches IECC 2012 SHGC maximum for glazed fenestration

Comment 2 – Cost Effectiveness

Several commenters note that analysis by door manufacturers shows that the incremental cost for changes to the less than or equal to half-lite criteria is nearly double EPA's estimate. One commenter also sees the criteria as offering no energy savings with reasonable payback, which indicates that EPA should not revise the less than or equal to half-lite criteria at this time. The commenter cites industry estimates that payback for the less than or equal to half-lite door criteria is 60 years in Boise, ID, and presents a chart of other payback estimates.

EPA Response:

EPA appreciates the submission of this information; however, the data points provided are missing key information, e.g., how many products are represented by the incremental cost, the specific products represented by the incremental cost, and how the incremental cost was calculated. EPA invited stakeholders to volunteer

incremental cost data early in the Version 6.0 criteria revision process and provided a template to interested parties at that time. The template for windows was published in the *Review of Cost Effectiveness Analysis*, and the template for doors was very similar. When EPA invited stakeholders to volunteer data early in the Version 6.0 criteria revision process, the data volunteered by manufacturers showed that the less than or equal to half-lite criteria selected match the U-factor and SHGC of manufacturers' best-selling doors under the current criteria, which means no incremental cost over Version 5.0.

Criteria Comments

Comment 3 – Criteria (Opaque)

Several commenters suggest that EPA change the U-factor maximum for opaque doors to 0.19. One commenter notes that some doors will require a different type of insulation, which costs 10% more, to achieve a U-factor of 0.17.

EPA Response:

EPA appreciates the submission of this information; however, the data points provided are missing key information, e.g., how many products are represented by the incremental cost, the specific products represented by the incremental cost, and how the incremental cost was calculated. EPA invited stakeholders to volunteer incremental cost data early in the Version 6.0 criteria revision process and provided a template to interested parties at that time. The template was also published in the *Review of Cost Effectiveness Analysis*. Also, as EPA noted in the *Draft 1 Criteria and Analysis Report*, manufacturers who volunteered cost data indicated that their best-selling ENERGY STAR qualified opaque doors already achieve a U-factor of 0.17, which means no incremental cost over Version 5.0.

Comment 4 – Criteria (Less Than or Equal to Half-Lite)

One commenter supports the revised criteria for less than or equal to half-lite doors because it will allow full- and half-lite doors to use the same glass package.

EPA Response:

EPA appreciates the commenter's support of the revision to the less than or equal to half-lite criteria.

Comment 5 – Criteria (Greater Than Half-Lite)

Several commenters request that EPA establish an equivalent energy performance trade-off for greater than half-lite doors in the Northern Zone so that products with a U-factor of 0.32 can qualify if they have an SHGC of 0.40 or more. One commenter notes that this trade-off is necessary because there is increased possibility for color mismatch in whole-home fenestration projects with the expanded trade-offs offered for windows in the Northern Zone. Several commenters request an SHGC maximum of 0.30 for greater than half-lite doors across all climate zones (exclusive of the commenters' recommended trade-off in the Northern Zone).

EPA Response:

EPA is reluctant to add additional zones to the greater than half-lite criteria because several commenters have expressed concerned about the complexity and associated costs of moving from one- to two-zone criteria for greater than half-lite doors. Additionally, several commenters support the greater than half-lite criteria as proposed, specifically because the higher SHGC in the northern zones prevents those manufacturers from having issues of glass color mismatch in whole-home fenestration replacement projects using higher-gain windows. Further, the SHGC cannot be revised to 0.30 for all zones because this criterion exceeds the 0.25 SHGC maximum for glazed fenestration in the southern zones under the 2012 IECC.

Comment 6 – Criteria (Greater Than Half-Lite)

One commenter disagrees with EPA's decision to re-introduce zone-specific criteria for greater than half-lite doors.

EPA Response:

EPA found that zone-specific criteria for greater than half-lite doors resolved two issues. First, the IECC 2012 SHGC requirement for glazed fenestration is much lower in the southern zones than in the northern zones.

Second, manufacturers had some concerns about consumer dissatisfaction with whole-home ENERGY STAR fenestration packages due to differing colors between window and door glass packages.

Comment 7 – Criteria (General)

One commenter supports all criteria as proposed because market share for doors is at 71%.

EPA Response:

EPA appreciates the commenter's support of the door criteria.

Comment 8 – Criteria (General)

One commenter believes that EPA needs to more clearly justify its decisions regarding the door criteria and is concerned about EPA's reliance on conversations and data collection that occur outside of the public process.

EPA Response:

EPA has made every effort to clearly communicate its decisions and the data and analyses underlying those decisions. In addition to the *Draft 1 Criteria and Analysis Report*, EPA held a public stakeholder meeting and offered many formal comment periods to allow commenters the opportunity to seek clarification at every step in the process. EPA used data and analyses as the drivers of the criteria revision process. The primary purpose of EPA's informal conversations with commenters was to confirm the data and analysis EPA has published on the criteria revision website. While EPA relied on proprietary cost data (provided voluntarily from manufacturers) to calculate the cost effectiveness of products at the proposed criteria levels, EPA has shared the results of its analysis with commenters in the *Draft 1 Criteria and Analysis Report.*

Comment 9 – Criteria (Air Leakage)

One commenter requests that EPA lower the air leakage maximum to 0.25 cfm/ft^2.

EPA Response:

EPA appreciates the commenter's suggestion. Currently, NFRC only permits labeling to one significant digit for air leakage. EPA encourages commenters to work with NFRC if they are interested in revisions to NFRC policy.

Responses to Comments on Final Draft Version 6.0 Criteria for Skylights

Cost Effectiveness Comments

Comment 1 – Cost Effectiveness (Analysis)

Several commenters believe that EPA should conduct a cost effectiveness analysis that incorporates data on curb-mount skylights because these products have a 42% market share.

EPA Response:

EPA's cost effectiveness analysis on skylights, summarized in the *Draft 1 Criteria and Analysis Report*, included data on curb-mount skylights.

Comment 2 – Cost Effectiveness (Analysis)

One commenter believes EPA should have used double-pane plastic skylights as the base product for its cost effectiveness analysis because this would have introduced significant marginal cost that would have tilted payback years to higher values than the ones currently presented.

EPA Response:

EPA appreciates the feedback and will consider using another approach for evaluating the cost effectiveness of skylights in future specification revisions.

Comment 3 – Cost Effectiveness (Analysis)

One commenter believes in Comment 5 of the *Responses to Comments on Revised Draft 2 Version 6.0 Criteria for Skylights*, the original commenter was indicating that EPA should update its cost effectiveness analysis for skylights. The commenter sees EPA's response as indicating that EPA does not intend to update its original analysis because, according to the commenter, "the data used by the Agency to justify the revisions is confidential." The commenter believes EPA should demonstrate why the data is confidential and provide basic information about the data on which EPA is relying.

EPA Response:

Based on public comments on the Final Draft specification, EPA's revised Version 6.0 skylights specification will allow best-selling curb-mount product to qualify in the Northern Zone and venting curb-mount product to qualify in the North-Central and South-Central Zones. According to the public comments received on the Final Draft specification, these products are best-sellers under the current specification, which means no incremental cost over Version 5.0. To clarify, EPA did not collect or receive any additional data (confidential or otherwise) for cost effectiveness analysis beyond the initial dataset characterized in the *Draft 1 Criteria and Analysis Report*. With respect to the initial dataset, EPA did not receive cost data from a sufficient number of manufacturers to ensure that any masking or aggregation would provide sufficient confidentiality to our manufacturer partners. The ENERGY STAR manufacturer partners who volunteered cost data have indicated that they believe releasing their cost data would cause competitive harm, so EPA has deferred to the partners' judgment with respect to this issue.

Comment 4 – Cost Effectiveness (Analysis)

One commenter believes that EPA has been reluctant to provide additional information, citing EPA's response to Comment 58 of the *Responses to Comments on Draft 2 Version 6.0 Criteria for Skylights*. The commenter states, "We found EPA's apparent confusion regarding what the stakeholder was requesting quite surprising, because it is common practice when presenting analytical results to explain the underlying data used, methodology, and conclusions of the analysis."

EPA Response:

EPA has responded to specific requests for additional information whenever possible and notes that the original request from Comment 58 of the *Responses to Comments on Draft 2 Version 6.0 Criteria for Skylights* was unclear. The commenter requested "details of the calculation methods and assumptions used to derive the inputs to its models." EPA has provided all calculation methods and assumptions in the *Draft 1 Criteria Revision and Analysis Report* and the *Cost Effectiveness Review and Analysis*.

Comment 5 – Cost Effectiveness (Data)

One commenter does not believe that EPA provided specific responses to cost information offered by public commenters.

EPA Response:

EPA appreciates the submission of this information; however, the data points provided are missing key information, e.g., how many products are represented by the incremental cost, the specific products represented by the incremental cost, and how the incremental cost was calculated. EPA invited stakeholders to volunteer incremental cost data early in the Version 6.0 criteria revision process and provided a template to interested parties at that time. The template was also published in the *Review of Cost Effectiveness Analysis*.

Comment 6 – Cost Effectiveness (Data)

One commenter submitted retailer cost data showing that the incremental cost to move from the best-selling Version 5.0 qualified model to a model qualified under Version 6.0 is $30 and the incremental cost to move from the next poorer performing skylight to Version 5.0 best-selling model is $79.

EPA Response:

EPA appreciates the commenter's submission of detailed cost data for skylights. Based on this and other feedback from commenters, EPA has revised the final skylight criteria.

Comment 7 – Cost Effectiveness (Data)

One commenter believes EPA needs to make the case that the cost of triple-pane products are over-estimated because of additional product features, especially since EPA appears to have already dropped some skylight products from the payback analysis because they have added features. The commenter cites EPA's exclusion of operable, impact-resistant, and snow-loaded products in the *Retailer Sourced Skylight Data*.

EPA Response:

EPA notes that the *Retailer Sourced Skylight Data* was not part of the cost effectiveness analysis. As noted in the *Additional Research on Skylight Availability and Cost* document that accompanied the *Retailer Sourced Skylight Data*, EPA conducted additional research on products available for sale in response to a stakeholder request for additional information about the availability and cost of skylight products at the Final Draft criteria levels proposed by EPA.

Comment 8 – Cost Effectiveness (Data)

One commenter believes EPA should attempt to aggregate or mask the skylight data received to enable its release. The commenter also believes that EPA needs to support its claim of confidentiality.

EPA Response:

EPA notes that due to the small number of skylight manufacturers that provided cost data, EPA is not confident that any masking or aggregation would provide sufficient confidentiality to our manufacturer partners. The ENERGY STAR manufacturer partners who volunteered cost data have indicated that they believe releasing

their cost data would cause competitive harm, so EPA has deferred to the partners' judgment with respect to this issue.

Comment 9 – Cost Effectiveness (Data)

One commenter believes EPA's data does not accurately reflect the cost of skylights because separate installation kits are required. The commenter notes that the incremental cost for these products has been significantly understated because the cost of these kits has been excluded. Another commenter believes the cost estimates are unreasonable because they do not include shipping or delivery costs.

EPA Response:

EPA does not include product installation costs in its cost effectiveness analyses. EPA only focuses on the incremental cost to improve product energy efficiency because the ENERGY STAR program focuses on consumers who have already made the decision to purchase a new product. This means that base product cost, which includes shipping or installation costs, is not included in the analysis.

Comment 10 – Cost Effectiveness (Data)

One commenter believes EPA has not thoroughly assessed and responded to data provided through the public comment process. Specifically, the commenter cites EPA's response to Comment 19 in the *Responses to Comments on Draft 2 Version 6.0 Criteria for Skylights*. The commenter believes EPA failed to even acknowledge the data provided and should have provided direct feedback on the commenter's data. The commenter also believes EPA's responses to data provided by commenters indicate that EPA has not reviewed the data provided and instead has relied on confidential conversations with manufacturers to determine whether the proposed skylight criteria are cost effective. As an example, the commenter references Comment 18 of the *Responses to Comments on Draft 2 Version 6.0 Criteria for Skylights*. The commenter believes EPA should have responded to the specific information provided about the incremental cost levels at which consumers will no longer be willing to purchase ENERGY STAR products. The commenter believes EPA's use of boilerplate language about the general goals of ENERGY STAR and payback within the lifetime of the product fails to acknowledge the concerns raised by the commenters. The commenter goes on to note that EPA claims it worked closely with manufacturers, but provides no detailed information on EPA's reasoning, which raises significant concerns regarding EPA's process for developing the specifications. The commenter also believes that EPA's engagement with public input has been limited, which is inconsistent with the intent of a public comment process.

EPA Response:

EPA appreciates the commenter's feedback on EPA's initial responses to the cost data provided and would like to clarify that EPA reviewed all the data provided by commenters. EPA appreciates the submission of this information; however, the data points provided are missing key information, e.g., how many products are represented by the incremental cost, the specific products represented by the incremental cost, and how the incremental cost was calculated. EPA invited stakeholders to volunteer incremental cost data early in the Version 6.0 criteria revision process and provided a template to interested parties at that time. The template was also published in the *Review of Cost Effectiveness Analysis*. Based on public comments on the Final Draft specification, EPA's revised Version 6.0 skylights specification will allow best-selling curb-mount product to qualify in the Northern Zone and venting curb-mount product to qualify in the North-Central and South-Central Zones. According to the public comments received on the Final Draft specification, these products are currently best-selling models under the current specification, which means no incremental cost over Version 5.0. EPA has made these revisions primarily in response to the detailed public comments provided in response to the Final Draft Version 6.0 Criteria for skylights.

Comment 11 – Cost Effectiveness (Payback Periods)

Several commenters believe that payback within the lifetime of the product is not reasonable or acceptable to consumers. One commenter believes EPA should consider revising the definition of "reasonable payback" presented in the *ENERGY STAR Products Program Strategic Vision and Guiding Principles* to ensure that specifications offer shorter payback periods for qualifying products.

EPA Response:

EPA accepted comments on the *ENERGY STAR Products Program Strategic Vision and Guiding Principles* when the document was revised in 2012. Although the Version 6.0 criteria revision process does not encompass revisions to the *ENERGY STAR Products Program Strategic Vision and Guiding Principles*, EPA will consider the commenter's feedback about payback within the lifetime of the product.

Comment 12 – Cost Effectiveness (Payback Periods)

One commenter believes that the phrase "generally between 2 to 5 years" in the third guiding principle of the *ENERGY STAR Products Program Strategic Vision and Guiding Principles* is a caveat, indicating that the ENERGY STAR program did not originally envision payback periods of 10, 15, or 20 years.

EPA Response:

The term "generally between 2 to 5 years" was meant to be illustrative of products with much shorter lifetimes, such as lighting and consumer electronics. Skylights are fundamentally different from other ENERGY STAR product categories because skylights do not consume energy.

Comment 13 – Cost Effectiveness (Payback Periods)

One commenter believes EPA has been reluctant to take commenters' concerns about skylight payback periods seriously. The commenter believes EPA's response to Comment 17 of the *Responses to Comments on Draft 2 Version 6.0 Criteria for Skylights* indicates that EPA is unwilling to engage in this issue.

EPA Response:

EPA appreciates the commenter's feedback on earlier EPA responses and notes that EPA has engaged with many stakeholders on the skylights criteria throughout this process on a number of issues, many of which directly impact payback periods. It is on the basis of this stakeholder engagement that EPA has revised the skylight criteria in the final specification.

Comment 14 – Cost Effectiveness (General)

One commenter believes the cost increase associated with the proposed specification levels may limit consumers' willingness to upgrade ENERGY STAR, which will erode the brand.

EPA Response:

Based on public comments on the Final Draft specification, EPA's revised Version 6.0 skylights specification will allow best-selling curb-mount product to qualify in the Northern Zone and venting curb-mount product to qualify in the North-Central and South-Central Zones. According to the public comments received on the Final Draft specification, these products are currently best-selling models under the current specification, which means no incremental cost over Version 5.0.

Criteria Comments

Comment 15 – Criteria (Northern Zone)

One commenter believes the Northern Zone U-factor maximum should be no lower than 0.49. The commenter provided data illustrating that the U-factor maximum of 0.48 will increase the incremental cost of purchasing an ENERGY STAR skylight by $30. Several commenters recommend a U-factor maximum of 0.50, which maintains a 10% improvement over IECC 2012.

EPA Response:

EPA has revised the U-factor maximum in the Northern Zone to 0.50 in light of the numerous specific examples provided by one commenter documenting the potential incremental costs to achieve the U-factor originally proposed in the Final Draft Version 6.0 criteria. The commenter also indicated that setting a less stringent U-factor maximum would allow its best-selling curb-mount skylight to qualify, resulting in no incremental cost over Version 5.0. Further, the revised criteria will improve product availability for both curb- and deck-mount skylights. According to the Products Available for Sale Database, this change will triple the number of product models available in the Northern Zone.

Comment 16 – Criteria (North-Central Zone)

One commenter notes that setting a U-factor maximum below 0.53 virtually eliminates venting curb-mount skylights and recommends that EPA reconsider a U-factor of 0.53 in the North-Central Zone. Several commenters proposed U-factor maximum of 0.50.

EPA Response:

EPA has revised the U-factor maximum in the North-Central Zone to 0.53 based on commenter feedback indicating that a U-factor maximum of 0.53 would allow venting curb-mount skylights to qualify. Additionally, the revised criteria will generally improve product availability for both curb- and deck-mount skylights. According to the Products Available for Sale Database, this change will more than quadruple the number of available product models in the North-Central Zone.

Comment 17 – Criteria (North-Central Zone)

Several commenters request that EPA raise the SHGC maximum to 0.40 in the North-Central Zone.

EPA Response:

Although EPA thanks the commenter for this suggestion, no data or information was provided to support this recommendation.

Comment 18 – Criteria (South-Central Zone)

Several commenters suggest that EPA raise the U-factor maximum to 0.55 in the South-Central Zone.

EPA Response:

Although EPA thanks the commenters for this suggestion, the commenters did not provide any data or information to support this recommendation. EPA has revised the U-factor maximum in this zone to 0.53 because one commenter indicated that this criterion level would allow venting curb-mount skylights to qualify. The revised criteria will also improve product availability for both curb- and deck-mount skylights. According to the Products Available for Sale Database, the number of available product models in the South-Central Zone will increase by more than a third with this change. Lastly, aligning the South-Central U-factor maximum with the U-factor maximum in the North-Central Zone simplifies the specification, allowing manufacturers to qualify a single product over a larger geographic area.

Comment 19 – Criteria (South-Central Zone)

Several commenters request that EPA raise the SHGC maximum to 0.30 in the South-Central Zone.

EPA Response:

Although EPA thanks the commenter for this suggestion, no data or information was provided to support this recommendation.

Comment 20 – Criteria (Southern Zone)

Several commenters suggest that EPA raise the U-factor maximum to 0.65 in the Southern Zone.

EPA Response:

According to the Products Available for Sale Database, 98% of skylight models marketed in 2011 could already achieve a U-factor of 0.60 and only four product models are excluded with a U-factor maximum of 0.60 rather than 0.65.

Comment 21 – Criteria (Southern Zone)

Several commenters request that EPA raise the SHGC maximum to 0.30 in the Southern Zone.

EPA Response:

Although EPA thanks the commenter for this suggestion, no data or information was provided to support this recommendation.

Comment 22 – Criteria (General)

One commenter believes the proposed SHGC criteria are difficult to achieve without major reductions in visible light transmittance.

EPA Response:

As shown in Figure 30 of the *Draft 1 Criteria Revision and Analysis Report*, the vast majority of skylights in the Products Available for Sale database have SHGCs of 0.35 or less and a significant number have an SHGC of 0.25 or less. Based on this, EPA infers that consumers are satisfied with the visible transmittance (VT) of low-SHGC skylights because manufacturers are currently marketing products with SHGC ratings under 0.35. Additionally, when EPA analyzed the relationship between center-of-glass (COG) VT and SHGC in the *Draft 1 Criteria Revision and Analysis*, the Agency found that even with SHGCs as low as 0.25 (below the most stringent skylight SHGC maximum), more than 95% of products had COG VT of 0.50 or more.

Comment 23 – Criteria (General)

One commenter supports the criteria as proposed.

EPA Response:

EPA appreciates the commenter's support of the skylight criteria.

Comment 24 – Criteria (General)

Several commenters believe that EPA needs to establish separate criteria for Tubular Daylighting Devices (TDDs). The commenters note that a new test method is coming online and believe that EPA needs to establish TDD criteria after performing a study on light-to-solar gain ratios for TDDs using the new test data.

EPA Response:

After results from the new test method are available for review, EPA will consider setting separate criteria for TDDs in future revisions.

Comment 25 – Criteria (General)

Several commenters believe that EPA needs to justify the methodology used to calculate the percentage of qualifying TDDs presented in the response to comments on the Draft 2 Version 6.0 criteria for skylights. The commenters do not believe it is apparent how the percentages can be added without knowing the numbers in each climate zone.

EPA Response:

As stated in the *Responses to Comments on Revised Draft 2 Version 6.0 Criteria for Skylights*, EPA downloaded all TDD data (15 products) from the National Fenestration Rating Council (NFRC) Certified Products Directory (CPD), verified this data directly with manufacturers, and then calculated the percentage of products that would qualify at varying specification levels. A revised table is included below that includes the product counts. EPA has also added another set of columns to show the percent of TDDs qualifying under the final Version 6.0 criteria as of January 2013 (when the original dataset used for the other columns was downloaded).

Number and Percent of Qualifying TDDs in the NFRC CPD								
Zone	**Draft 2 Version 6.0**		**Revised Draft 2**		**Final Draft**		**Final**	
Northern	0	0%	3	20%	3	20%	4	26.7%
North-Central	3	20%					2	13.3%
South-Central	1	7%	1	7%	1	7%		
Southern	3	20%	3	20%	3	20%	3	20%
Total	**7**	**47%**	**7**	**47%**	**7**	**47%**	**9**	**60%**

Note: EPA removed two products with very low U-factors from the dataset before performing the analysis to be conservative. Manufacturers indicated that these products may have erroneous test results.

Comment 26 – Criteria (General)

Two commenters want EPA to justify why it has chosen to exceed the IECC 2012 SHGC criteria in the Southern and South-Central Zones.

EPA Response:

According to the Products Available for Sale Database, 57% of skylight models marketed in 2011 could already meet an SHGC of 0.28.

Product Availability Comments

Comment 27 – Product Availability (Additional Research)

Two commenters note that in EPA's *Additional Research on Skylight Availability and Cost*, two products are erroneously listed as curb-mount, leaving only one curb-mount skylight that meets the final draft Version 6.0 U-factor maximum in the Northern and North-Central Zones. The commenter goes on to point out that this product is not the lower cost model usually stocked in home center stores.

EPA Response:

EPA appreciates commenters bringing this issue to EPA's attention and providing additional insight on the products listed in the *Retailer Sourced Skylight Data*.

Comment 28 – Product Availability (Triple-Panes in Northern Zones)

One commenter notes that based on Figure 30 of the *Draft 1 Criteria Revision and Analysis Report*, 80% of the products that qualify in the Northern and North-Central Zones (U-factor maximum of 0.48) have a U-factor of 0.43 or below. According to Figure 28 of the report, these products are likely triple-pane.

EPA Response:

Based on public comments on the Final Draft specification, EPA has revised the U-factor maximum to 0.50 in the Northern Zone and increased the U-factor maximum to 0.53 in the North-Central Zone. According to public comments received on the Final Draft specification, these changes will allow best-selling double-pane curb-mount product to qualify in the Northern and North-Central Zones. Based on the revised specification and the Products Available for Sale Database, 75% of products have U-factors above 0.43 in the Northern Zone and 81% of products have U-factor above 0.43 in the North-Central Zone.

Comment 29 – Product Availability (Northern and North-Central Zones)

Several commenters believe that a U-factor maximum of 0.48 will disqualify 80%-85% of double-pane curb-mount skylights available in the Northern and North-Central Zones. One commenter believes that double-pane argon-filled skylights with low-e will no longer qualify for ENERGY STAR under the new criteria, which runs counter to the ENERGY STAR guiding principles because consumers will opt for less efficient plastics skylights due to limited availability. Another commenter is concerned that curb-mount skylights will not be able to qualify at U-factor levels less than 0.49. One commenter estimates that 1,000 retailers will stop carrying ENERGY STAR skylights due to cost, which one retailer echoed in its comments.

EPA Response:

EPA understands that some commenters have concerns about product availability with a U-factor maximum of 0.48 in the Northern and North-Central Zones. To alleviate these concerns, EPA has revised the U-factor maximum to 0.50 in the Northern Zone and increased the U-factor maximum to 0.53 in the North-Central Zone. These changes have been made in response to public comments. The revised criteria will improve product availability for both curb- and deck-mount skylights (see Comment 30). In addition, the public comments received on the Final Draft specification indicate that these changes will allow best-selling double-pane curb-mount product to qualify in the Northern Zone and venting curb-mount product to qualify in the North-Central Zone.

Comment 30 – Product Availability (Northern and North-Central Zones)

One commenter believes the *Additional Research on Skylight Availability and Cost* document does not show any change to product availability with the increase in U-factor from 0.47 to 0.48 in the Northern and North-Central Zones. Another commenter notes that according to Figure 30 of the *Draft 1 Criteria Revision and*

Analysis Report, raising the U-factor to 0.48 in the northern zones increases product availability by less than 2%. Several commenters note that increasing the U-factor maximum to 0.50 will double the number of qualifying products in the NFRC CPD, bringing the percent qualifying to 12%, and another commenter notes that this change will allow a wider range of skylights to qualify.

EPA Response:

EPA understands that some commenters have concerns about product availability with a U-factor maximum of 0.48 in the Northern and North-Central Zones. To alleviate these concerns, EPA has revised the U-factor maximum to 0.50 in the Northern Zone and increased the U-factor maximum to 0.53 in the North-Central Zone. The revised criteria will improve product availability for both curb- and deck-mount skylights. According to the Products Available for Sale Database (Figure 30 of the *Draft 1 Criteria Revision and Analysis Report*), these changes will add nearly 50 product in the Northern Zone (tripling the number of product models available) and add over 100 products in the North-Central Zone (more than quadrupling the number of available product models available).

Comment 31 – Product Availability (Determination of Availability)

One commenter notes that the availability of a product on a website is not the same as having sufficient quantities of that product to meet consumer needs following an ENERGY STAR revision. The commenter wants EPA to explain how sufficient product will be available when it is needed. The stakeholder wants EPA to explain this in such a way that stakeholders can evaluate EPA's decision-making process.

EPA Response:

EPA understands that the availability of products on a website today does not necessarily translate to wide product availability when the specification takes effect. Based on public comments on the Final Draft specification, EPA's revised Version 6.0 skylights specification will allow best-selling curb-mount product to qualify in the Northern Zone. This best-selling product will also qualify in all other climate zones, which means consumers will see little to no change in product availability under the Version 6.0 specification.

Comment 32 – Product Availability (Analysis)

Two commenters believe EPA should have performed separate availability analyses for curb- and deck-mount skylights at various U-factors.

EPA Response:

EPA appreciates the feedback and will consider this approach in future specification revisions.

Comment 33 – Product Availability (Analysis)

One stakeholder wants EPA to update its product availability analysis for skylights so that commenters can evaluate the implications of EPA's proposed specification revisions and ensure that the EPA conducted a proper review and arrived at appropriate conclusions.

EPA Response:

Based on public comments on the Final Draft specification, EPA's revised Version 6.0 skylights specification will allow best-selling curb-mount product to qualify in the Northern Zone. This best-selling product will also qualify in all other climate zones, which means consumers will see little to no change in product availability under the Version 6.0 specification.

Comment 34 – Product Availability (Data)

One commenter requests that EPA make additional information available regarding its skylights data and analysis to enable commenter review of Agency decisions.

EPA Response:

EPA has posted the Products Available for Sale Database for skylights to the criteria revision website for commenters' review. The *Draft 1 Criteria Revision and Analysis Report* describes the product availability analysis.