MATHEWS BROTHERS
MANUFACTURING WINDOWS SINCE 1854

September 21, 2012

Mr. Doug Anderson
Project Manager
Energy Star Program
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC, 20460

Emily Zachery
D& R International
1300 Silver Spring, MD, 20901

Dear Doug and Emily,

Mathews Brothers Company, a long time Energy Star Partner, appreciates the opportunity to provide the following comments regarding the proposed 6.0 Version of Energy Star Performance Criteria for windows, doors, and skylights.

Mathews Brothers fully supports EPA's efforts to have Energy Star products represent the top 25%-30% of performing products, and would like to submit the following comments in the endeavor to have the Energy Star Label be meaningful to consumers when they make their buying decisions.

1. Mathews Brothers agrees with the proposed Version Six criteria which proposes U factors in the 0.25-0.27 (or lower) range is necessary to keep consumers confident that the Energy Star Label represents products that are among the best at reducing energy consumption.

2. Mathews Brothers has heard comments expressed by some manufacturers that January 2014 does not give manufacturers sufficient time to comply with the proposed Version 6 standards. We would suggest that this is not in fact the case. As far back as August of 2008, D & R published a Draft Criteria Analysis for Energy Star stake holders, which in the executive summary states;
"Recognizing it takes manufacturers time to design new products and adopt and optimize new technologies and production methods, DOE is proposing to roll out new criteria in two phases"
"Phase 2, (Version Six) beginning in 2013, will establish higher levels of performance well beyond current building codes. Products qualifying in all zones are currently available. However, most manufacturers will need to alter product designs and upgrade manufacturing processes to produce qualified windows. For example, manufacturers will need to develop new triple-pane products to meet the most stringent criteria for northern climates." Again, this quote is from an Energy Star document to stakeholders dated August 2008, letting manufacturers know that in 2013 (five years) the performance criteria would be significantly more demanding.

22 Perkins Rd. | PO Box 345 | Belfast ME | 04915
207.338.3360 phone | 207.338.6300 fax
www.mathewsbrothers.com

3. It seems that those who argue against the proposed more stringent performance standards in Version Six use an argument regarding amount of time it will take for the energy savings to be realized, ie, the payback for the extra cost of more efficient products. Most of the payback studies we have seen don't take into account the fact that energy costs go up faster than the rate of inflation, and all indications show these energy costs will continue to do so. We would suggest that when payback calculations are run with a factor that includes the quickly rising cost of energy over the life of a product, those payback arguments aren't valid.

4. Mathews Brothers feels that Equivalent Energy Performance criteria which recognizes higher solar heat gain values for the northern zone SHOULD be included in the 2013 criteria for the following reasons;

   First, Energy Star is a program that rates products on their energy consumption. Currently, products in the southern zones which have identical U factors but lower solar heat gain values are recognized as using less energy. The same should be true in the northern zones where two products might have identical U factors but different Solar Heat Gain values. Today, one with a similar U factor, but with a higher solar heat gain is not currently recognized as using less energy than one with a lower solar heat gain. A case in point is as follows; Most national manufacturers make a window with a 0.30 U factor typically puts the Low-e on surface 2 which will result in a SHGC value of about 0.28, which is helpful in cooling dominated climates. If another manufacturer makes the same window with a U factor of 0.30 and puts the low-e on surface three, the SHGC value increases to 0.35. Currently, there is no recognition given to the fact that the window with the same U factor, but higher solar heat gain will use less energy in the northern zone. This difference in solar heat gain can become even greater when the many combinations of tri-pane glass are considered.

   Secondly, market forces and products from Europe and Canada put great emphasis on the importance of a high solar heat gain number for Northern climates. In fact we have heard that DOE is working on a partnership program with Germany's PassivHaus. We feel Energy Star has to include the equivalent performance criteria in order to be in step with other countries now selling products in the United States that include this information.

5. The growing drive to reduce U factors in windows has resulted in glass combinations that while mathematically computing to lower U factors, result in unintended consequences in practical use. The most notable of these is the use of a dual IG unit which uses Low-e on surfaces 2 and 4. This combination of glass does offer reduced U factors, but, because of the physics of heat energy being reflected back into a room rather than absorbed, it results in an inside glass surface temperature that is about 10 degrees cooler than a standard (one Lite Low-e) insulated glass unit. This reduced surface temperature can lead to condensation on the glass, which then reduces the performance of the window, and can also lead to mold growth and other problems. While Mathews Brothers products have been simulated with this surface four Low-e glass combination, and it does compute mathematically to give us better U factor numbers, we will not offer this glass combination to our customers, as we feel an Energy Star Labeled product that is supposed to represent higher performance, should not be more prone to condensation than the current Energy Star window.

   Currently the average NFRC Condensation Resistance Factor (CRF) for the dual pane, surface 4 Low-e glass option runs between 45 and 50, where today's conventionally glazed Energy Star window with one layer of low-e and Argon has an average NFRC Condensation Resistance Factor of 60.

We would suggest that to maintain the integrity of the Energy Star Program that Version Six include a requirement of a minimum NFRC condensation rating at least as good as the current average Energy Star dual glazed window (about 60).
The NFRC Certified product directory already includes condensation ratings for all glazing options, so a requirement for a minimum CRF rating involves no additional testing or expense for manufacturers, and would certainly help to provide consumers with the information to make an informed buying decision.

6. Mathews Brothers strongly supports the development of a "Highest Performing" product category that represents highly efficient products, and applauds the recent announcement that this program will be introduced in January 2013. This action will encourage the development of new products and technologies that reduce energy consumption while reducing the cost of these higher performing products. A case in point is DOE's R5 program with PNNL. Just a few years ago there were only a handful of manufacturers making products that had a U factor of 0.22 or lower. Today Mathews Brothers is one of 169 companies listed in the NFRC directory that build an R5 (or better) double hung.

7. Some comments have been submitted to EPA expressing concerns about the cost of higher performing (U @ 0.27) products. This is not necessarily the case. PNNL recently released information regarding the R5 program, which stated that to date in Phase 2, over 13,000 windows had been sold with an average price of about $240.00 per window. If one goes to the website of Home Depot, they will find that this $240.00 price is in line with the average price of today's Energy Star windows.

8. We feel that structural testing to AAMA and NAFS standards should be included in the program. While some have commented that structural performance doesn't affect energy usage, the test protocol also includes testing for air and water infiltration as well. While not all manufacturers have gone to full certification and labeling to the AAMA/NAFS standard, most have had their products tested, and have certified reports regarding the performance their products.
Another consideration is that the 2012 IRC standards now include a requirement for products to be tested to the AAMA/NAFS standard. It would make sense for there to be one recognized standard referenced for air, water and structural performance.

While Mathews Brothers is a relatively small company employing about 120 people, we have invested significant time, dollars and energy into developing more energy efficient products that meet the new standards rather than lobbying to delay or water down the proposed new standards. We already have products going out the door that meet not only the Version Six Criteria but also the "Most Efficient " proposed standards.

Mathews Brothers Company feels the suggestions above will help to insure that The Energy Star Program maintains its credibility with consumers and we appreciate the opportunity to submit these comments for consideration.

Respectfully
Steven E. Hart
Steven E Hart
Sr. Vice President Research and Development
Mathews Brothers Company