

## Julia Madey

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**From:** Ray Garries <raygarries@gmail.com>  
**Sent:** Monday, March 28, 2022 11:31 PM  
**To:** windows@energystar.gov; Doug Anderson  
**Subject:** Energy Star Window, Doors and Skylights V7- D2 comments

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Environmental Protection Agency

To: EPA via representative Doug Andersen  
Subject: Comments and adjustment requests for Energy Star Program for Windows/Doors/Skylights  
Version 7 - Draft 2  
Date: 3/28/2022

Thank you for the adjustments revising the Northern zone window criteria tradeoffs. We appreciate your work to save energy and enhance affordability. Our ability to sell the energy benefits to customers depends on realistic and sensible affordability. Make no mistake, most of the real work of selling the Energy star program is done on a B to B format. Retailers and distributors must be able to justify the price increases that V7 will require. These adjustments take us in the right direction.

As you know, the window and door program is not like the 57 other Estar programs. We must change materials and not just adjust programming or controls to use less energy. We must certify millions of options through a separate and complicated rating program that itself costs millions of dollars. And we must be constantly audited by two programs with zero failure tolerance. One strike and you are out. The EPA continues to recognize this and its representatives do strive to be create realistic program requirements.

We must continue to strive for better performance through physics and material break throughs. We ask EPA to task the National Labs with a new project to create the next breakthrough to allow even more efficient windows to be affordable. We must also push for reasonable rating programs that do not additionally burden our costs, but deliver real energy savings.

In our view the V7 draft 2 program proposal still needs some tweaking to allow better affordability and required energy savings increases.

The changes we should agree on are as follows;

**1. The SHGC values in the Northern trade off zones should be adjusted downward by .08 to .10.** The reasoning is that a darker glazing will allow some improvement in both availability of glazing and an improvement in summertime heat gain. Justification for this move is to be found in your chart, duplicated below, showing a \$108 annual savings for .35 and a \$104 savings for a .27. A homeowner will not realize this \$4.00 annual savings and may actually see an increase in energy use in a real home that does not match the simulated home. Another example is the .25U solar heat gain setpoints at the recommended .40 are only \$2.00 per year different than setting the limit at .30! These small savings decision points should be changed to broaden the availability of glazing options and allow more affordability. In summary we request EPA to change the tradeoff chart to:

.23U and greater/equal to .27 SHGC

.24U and greater/equal to .27 SHGC

.25U and greater/equal to .30 SHGC

.26U and greater/equal to .30 SHGC

2. **The U values of the NC zone should be .26 not the .24.** The reasoning is that the proposed .24 is now a step lower than the trade off .26 in the Northern zone. A check of the energy savings numbers you created in the latest V7 D2 show that the change to the .26 with the SHGC value of .30 will only effect savings by \$1.50 per month!

3. **The Door criteria needs adjustment to .28U from a .25U.** The reasoning for this change is to allow matching with the window criteria, and to keep clear logic in the steps between levels of criteria.

4. **The program start date should change to January 2025.** The reasoning is based on our current chaos in the market, chaos in pricing, and chaos in supply chain. More time is needed to spread out the required investment of millions of dollars. I do not believe EPA has completely grasped the real cost of infrastructure to achieve the V7 levels. Glass suppliers must drastically increase low e coating capacity and interior coating capacity, as they also must produce much more float glass to allow triple pane growth. Component suppliers must increase capacity of IG spacers, balancers, redesign support systems, and retool new extrusions and do it during the high volume demand. Window manufacturers must redo multiple ratings and tests, Redesign products, build new fabrication equipment , create new selling tools and marketing, Redo thousands of displays across the country, and do so in a way that still allows no greater disruption to customers. All this must be invested two or more years before any payback can be realized and with the uncertainty of success of Energy Star. EPA may decide to pull window Estar at any time and it is not known if V7 will be acceptable to end consumers. The investment across the industry is in the 100's of millions all financed by our manufacturers. This is why we are so concerned about timing

5. **Embodied carbon reduction and circular life** should be part of the Estar program. We realize that EPA has explained recently that EStar does not consider these factors, but this seems in conflict with EPA directives. The reasoning is that by simply chasing U and SHG we are missing an important part of the quest to reduce energy. Recently the NGA has noted that the paybacks for an additional third lite of glass are under one year. This simplified analysis does not consider a system approach to fenestration energy management. Window are made up of many components not just glass. Fabricating, glazing, transport, installation and use are important considerations to truly understand total carbon.

6. **EPA should require NAFS certification for all Energy Star Fenestration products.** We have consistently asked for this inclusion for more than 15 years and it is now time to increase the safety of all these glazed products. Only NAFS certification requires the ASTM glazing rules that set the safety requirements for glass thickness at pressure. This also sets the minimum quality of a built product. Other Estar categories have adopted safety and quality requirements and we should also.

7. **EPA should modify its Fenstar testing program** to keep pace with this V7 program and the experience we have. First the Fenstar program should adopt a retest protocol that allows an error or tolerance to be investigated and redone. Many other Estar programs offer this and the "One Strike" rule that is now in place for windows is not appropriate. As the U vales are lowered, the tolerances must be considered. Secondly, we request that EPA initiate a program to eventually eliminate Fenstar and declare the extensive and proven NFRC process take its place. Fenstar was created out of a reaction to possible misleading results. That time is past and NFRC is more than capable of managing this system

Please accept these adjustments and continue to help us deliver both the energy savings and the affordability consumers really want. Our partnership is essential to reaching these goals

Sincerely

Ray Garries

Annual Energy Cost Savings (Green shading indicates higher numbers while red shading indicates lower numbers)													
Energy Star Zone	Northern												
	SHGC												
U-Factor	0.13	0.15	0.17	0.19	0.2	0.21	0.23	0.25	0.27	0.3	0.32	0.35	0.37
0.2	\$109	\$114	\$118	\$121	\$123	\$124	\$127	\$129	\$132	\$134	\$135	\$136	\$136
0.21	\$99	\$104	\$108	\$112	\$113	\$115	\$118	\$120	\$122	\$125	\$126	\$127	\$127
0.22	\$90	\$95	\$98	\$102	\$104	\$105	\$108	\$111	\$113	\$115	\$116	\$117	\$117
0.23	\$80	\$85	\$89	\$93	\$94	\$96	\$99	\$101	\$104	\$106	\$107	\$108	\$108
0.24	\$71	\$76	\$80	\$83	\$85	\$87	\$89	\$92	\$94	\$97	\$98	\$99	\$99
0.25	\$61	\$66	\$70	\$74	\$76	\$77	\$80	\$83	\$85	\$88	\$89	\$90	\$91
0.26	\$52	\$57	\$61	\$65	\$67	\$68	\$71	\$74	\$76	\$79	\$80	\$81	\$82
0.27	\$43	\$48	\$52	\$56	\$57	\$59	\$62	\$65	\$67	\$70	\$71	\$72	\$73
0.28	\$33	\$39	\$43	\$47	\$48	\$50	\$53	\$56	\$58	\$61	\$62	\$64	\$64
0.29	\$24	\$30	\$34	\$38	\$39	\$41	\$44	\$47	\$49	\$52	\$53	\$55	\$55
0.3	\$15	\$21	\$25	\$29	\$30	\$32	\$35	\$38	\$40	\$43	\$45	\$46	\$46
0.31	\$6	\$12	\$16	\$20	\$22	\$23	\$26	\$29	\$32	\$34	\$36	\$37	\$38
0.32	-\$2	\$3	\$7	\$11	\$13	\$15	\$18	\$21	\$23	\$26	\$27	\$29	\$29
0.33	-\$11	-\$6	-\$2	\$2	\$4	\$6	\$9	\$12	\$14	\$17	\$19	\$20	\$21
0.34	-\$20	-\$15	-\$11	-\$7	-\$5	-\$3	\$0	\$3	\$6	\$9	\$10	\$12	\$12
0.35	-\$29	-\$24	-\$19	-\$15	-\$13	-\$12	-\$8	-\$5	-\$3	\$0	\$2	\$3	\$4

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Ray Garries



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