March 19, 2004

Mr. Richard H. Karney, PE
Energy Star Program Manager
United States Department of Energy
Office of Building Technologies Program
1000 Independence Avenue, SW
Washington, DC 20585

Dear Rich:

Simonton Windows strongly supports the Energy Star Program and DOE's initiative to implement a performance based method of compliance for windows. We believe that it is important to implement a trade-off method for the northern and southern zones today. In time, perhaps a similar concept can be developed for the other zones, but the data presented by LBNL suggests that the solution could be complex and is better left untouched at this time. Last September you shared DOE's vision of how the Energy Star requirements will tighten in the near future, so perhaps the next evolution can contain some geographical changes to support a new approach for the central zones.

The analysis by LBNL suggests that a trade-off in the northern zone would not meet code. That is not true; the IECC has always allowed multiple paths to code compliance such as the performance-based approach. It makes no sense to have two glass packages available for the north and have the less efficient version able to be labeled as Energy Star compliant. Also, LBNL chose to multiply electrical energy by a factor of 3.22 to account for efficiency and transmission losses, but no factor was used for other energy sources. Personally speaking, as an owner of natural gas production facilities, there are lots of losses associated with bringing the fuel to the consumer.

Zone Details:

<u>South</u>
I agree with LBNL in concept, but I think the trade-off might be slightly too lenient. I think the problem arises from only four cities as data points and two of those cities (Miami and Brownsville) are geographically at the extreme edge of the zone. I don't

think that averaging the data is appropriate if we wish to imply that this trade-off will give equal or better performance than the existing requirements for the entire zone. I would suggest that we use either Lake Charles or Jacksonville to make the trade-off more conservative. I think this issue is more pronounced in the southern zone because of the small data set and the 40% variation in type of energy load.

South Central

I know that the line for a high gain advantage versus a low gain advantage for real and actual products when evaluated for energy consumption runs through this zone. Thus, LBNL is exactly right when they say that the trade-offs need to be in different directions for discrete locations within this zone. Although the difference in the energy consumed probably wouldn't be significant, the statement made last September was that neither the criteria nor the map would be changed. Since the trade-offs needed must move in opposite directions, we need to set this one aside for a long-term approach.

North Central

I agree with LBNL's conclusion of no recommended trade-offs but not because of their argument presented. I think the thresholds are fine because I don't know of a product commercially available that would have a high enough SHGC to allow a higher U-factor. It's possible that a triple glazed clear window might fall into that category but it is not a commercially viable product.

North

The northern zone is probably the most important of all of the zones addressed by a performance-based approach. It is *the* zone where the new construction market has products that can offer increased energy performance and has the most potential for implementation. LBNL used SHGC=.4 for establishing their base case, but I would suggest SHGC=.32 as the real world value. Today I can sell an energy star rated product with a U=.34 and SHGC=.32 or I can provide a product with U=.37, SHGC=.53 that will yield nearly 7% better performance on average for the entire zone. The following table shows the results for the northern zone cities using those glass options.

LOCATION	Low Gain Cardinal LE2 (Mbtu)	High Gain LOF Energy Adv. (Mbtu)	DIFFERENCE (Mbtu)	%
Anchorage, AK	118.1	113.4	4.7	4.1
Denver, CO	58.02	52.44	5.58	10.6
Boise, ID	63.86	59.35	4.51	7.6
Chicago, IL	77.81	74.18	3.63	4.9
Boston, MA	73.57	68.87	4.7	6.8
Portland, ME	81.69	75.79	5.9	7.8
Minneapolis, MN	98.29	93.92	4.37	4.7
Great Falls, MT	91.33	86.23	5.1	5.9
Omaha, NE	75.55	72.00	3.55	4.9
Buffalo, NY	84.09	80.56	3.53	4.4
New York, NY	63.65	59.81	3.84	6.4
Reno, NV	51.22	45.59	5.63	12.4

Bismarck, ND	100.92	95.97	4.95	5.2
Portland, OR	46.15	43.26	2.89	6.7
Medford, OR	45.73	43.02	2.71	6.3
Dayton, OH	71.61	67.89	3.72	5.5
Philadelphia, PA	61.64	58.02	3.62	6.2
Salt Lake City, UT	57.70	53.60	4.1	7.7
Burlington, VT	91.39	86.73	4.66	5.4
Madison, WI	86.92	82.43	4.49	5.5
Seattle, WA	52.23	48.25	3.98	8.3
Cheyenne, WY	81.74	74.74	7.0	9.4

The trade-offs suggested by LBNL are fine for this zone, the data set had 23 entries and the maximum variation in heating and cooling percentages was only 17%. I could also support using the trade-offs for Anchorage if the desire is to make the trade-off more conservative.

Final Thoughts

The performance-based approach is the right thing to do. These changes to the program do not lessen the requirements for compliance; they merely allow an alternate path. This alternate path does not remove any products from the market; it allows competition. Competition is good for the consumer and will promote advancements in competing technologies within the industry. Our National Energy Policy is full of recommendations to remove barriers to markets for technologies that offer energy efficiency.

Sincerely,

Chuck Anderson, PE

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Testing, Code, & Regulatory Affairs Manager
Simonton Windows