BRICKFIELD BURCHETTE RITTS & STONE, PC

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To: Joe Huang, Robert Clear, Robin Mitchell, Steve Selkowitz and Dariush Arasteh

From: Garrett Stone

CC: David Garman, Mike McCabe, Rich Karney, Marc LaFrance

Comments on January 23, 2004 Draft "Analysis Results for Performance Based Ratings for the Energy Star Windows Program" from LBNL

Per the request of the Department of Energy, I have set forth below our comments on the LBNL Draft Analysis:

I. Energy Star Windows Must Meet IECC Minimum Requirements

We agree with the conclusion in the LBNL Draft Analysis that the Energy Star program must always meet or beat energy code requirements. We suggest that the 2000 IECC, currently formally endorsed by DOE under the Energy Policy Act of 1992, is the obvious standard. Because the IECC replacement window requirements are entirely prescriptive (and cannot be traded off), in our view, these are the best benchmark.

Recommendation # 1: We suggest that the report refer to and incorporate the map and information in Figures 1 and 2 below. This info should also be spelled out clearly in the Executive Summary.

As a result of the IECC requirements, the following conclusions must be reached and should be spelled out in the Draft Analysis:

- There can be no north zone trade-off involving U-factors above 0.35.
- There can be no north central trade-off involving U-factors above 0.40.
- There can be no south central trade-off involving either U-factors above 0.50 or SHGCs above 0.40.
- There can be no south zone trade-off involving U-factors above 0.75 or SHGCs above 0.40.

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Recommentation # 2: Realistically, IECC requirements leave the potential for trade-off only in the south central and south zones. As a result, the Draft Analysis should not even address potential trade-offs in the other zones, which can only create confusion.

Figure 1 -- IECC Replacement Window Climate Zones

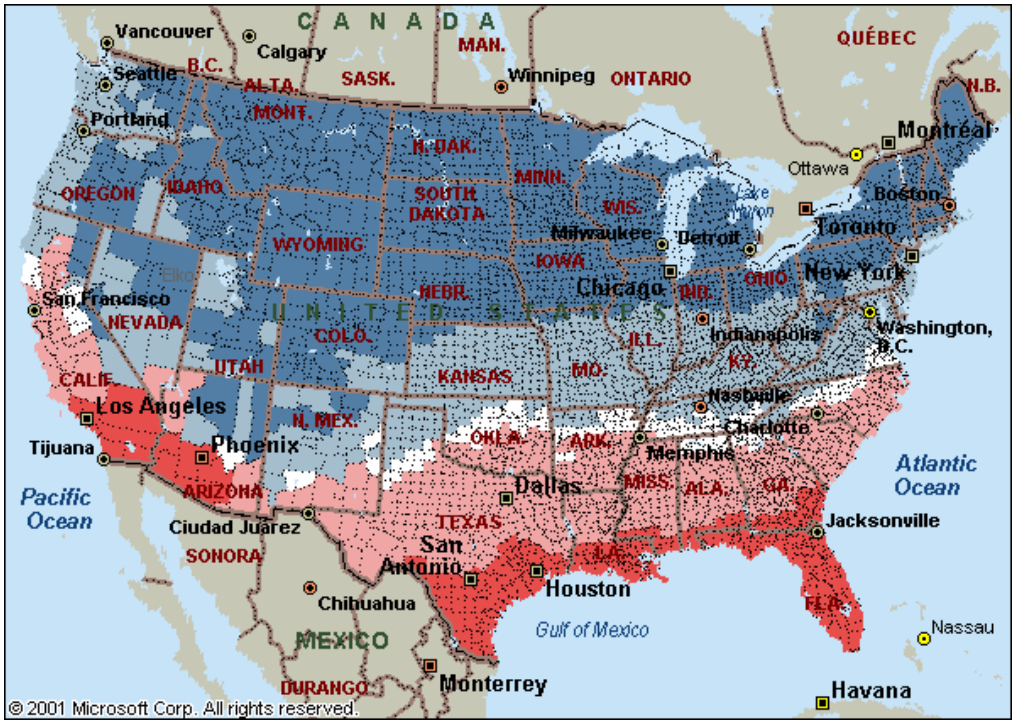

Figure 2 – IECC Replacement Window Prescriptive Requirements by Climate Zone

IECC Climate Zone	Approximate Energy Star Region	IECC Window & Skylight SHGC	IECC U-factor	
			Window	Skylight
● 0 – 1,999 HDD	***South***	0.40	0.75	0.75
● 2,000 – 3,499 HDD	***South Central***	0.40	0.50	0.60
O 3,500 – 3,999 HDD	***North Central***	NR	0.50	0.60
● 4,000 – 5,999 HDD	***North Central***	NR	0.40	0.60
● 6,000 and above HDD	***North***	NR	0.35	0.60

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II. Energy Star Windows Must Properly Recognize Other Trade-Off Constraints: Peak Demand, HVAC Sizing, Comfort, and Condensation Resistance

We strongly agree with the conclusion in the LBNL Draft Analysis that other considerations are also important limitations on trade-offs. For the most part, the code limits (which, in part, implicitly recognize these considerations) make it unnecessary to place significant emphasis on these issues.

Recommendation # 3: The Draft Analysis should clearly note that absent the code limitations, these other constraints would severely limit any trade-offs from existing Energy Star criteria.

For example, trading off the Energy Star SHGC requirement in the south would be unwarranted even if the code limit of 0.40 SHGC did not exist. A similar conclusion applies to trading off the Energy Star 0.35 U-factor in the north. (The Draft Analysis at page 9 suggests that maximum allowable values have been proposed to address these issues in Table 3, but it is unclear to us in reviewing the paper what those proposed values are.)

III. A Baseline for the North Region Should Not Be Established at This Time

Recommendation # 4: No baseline or trade-off method should be established for the north zone at this time; the issue is premature given the code limit of 0.35 U-factor and expectations as to future research.

Any selection of a northern baseline is arbitrary given that there is no SHGC criterion for the north region. After all, the baseline for all other regions is the specific maximum U-factor or SHGC established by Energy Star. Moreover, the Draft Analysis cites no basis for the choice of 0.40 SHGC. We suspect the majority of Energy Star windows sold in the north region are far below 0.40 SHGC. To use 0.40 SHGC as the baseline undercuts the Department's original decision not to set an SHGC value for the north region.

Moreover, no baseline is necessary at this time since there can be no trade-off given the constraints of energy codes. There is little point in speculating about a trade-off for the north zone under such circumstances. While the Department may wish to establish a trade-off mechanism in the future if it establishes new northern requirements below code, it can address the baseline issue at that time. To decide the issue now is simply premature. If needed in the future, the north baseline and the trade-off can be developed with the benefit of future research.

IV. The Draft Analysis Fails To Address The Fundamental Reason For This Effort, To Address The Issue Of The Exclusion Of Aluminum Products From The South Central Region

The real reason for this exercise in evaluating a so-called performance trade-off approach are the concerns raised by the aluminum window industry. The industry claims that it

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cannot cost effectively produce a 0.40 U-factor window and that a 0.42 U-factor is close enough. Yet the Draft Analysis fails to come to grips with this problem. While we agree with many of the conclusions reached, we believe that the Department should squarely come to grips with the policy issue of potential exclusion of aluminum windows from the south central region. While the code would preclude a U-factor higher than 0.40 in the north central and north regions, the code is not an impediment in the south central. We understand that the hope was to resolve this question through a performance or trade-off approach. However, based on the existing RESFEN input parameters (which, I continue to have concerns about and which are under study by the NFRC), LBNL's analysis suggests that a trade-off approach is not feasible in the south central region (new RESFEN inputs might change this result).

As a result, we are back to the original policy question. The policy question that must be answered is whether it is appropriate to exclude a 0.42 U-factor aluminum window (which has an adequate SHGC and utilizes low e glass) from the program in the south central simply because it is 5% or 0.02 over the standard. We think there are legitimate arguments both ways. However, if the Department wishes to redress this problem, there are other ways than the complexity of the performance approach. For example, U-factor clearly is not as important in the south central. The Department could adopt a 0.02 U-factor exception for these products. Rather than spend more resources on a "performance" or trade-off method at this time, we urge the Department to squarely address this issue (one way or another, once and for all) and not let the issue be obscured by an argument over performance trade-offs.

Recommendation # 5: The Department should squarely address and resolve the aluminum window issue in the south central region.

V. Further Action On A Performance Trade-Off Can Wait Until The RESFEN Input Parameters Are Fully Evaluated

If the Department directly addresses the policy question as to aluminum windows discussed above, there will no longer be any burning need to establish a performance or trade-off method. Instead, the Department could wait on the NFRC analysis, research and recommendations as to updated RESFEN input parameters and until DOE establishes a new Energy Star program that is stricter than code.

Recommendation # 6: The Department should not establish performance or trade-off approaches at this time – instead, it should address the aluminum window/south central issue directly and wait until NFRC research is complete and a new Energy Star program stricter than code is adopted in the north region to justify developing a trade-off approach.

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