



January 15, 2010

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Mailstop EE-2J  
1000 Independence Avenue, SW  
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Via:

**Re: Refrigerator-Freezers, and Freezers, EERE-2008-BT-STD-0012**

### **Introduction**

Consumers Union of United States, Inc.,<sup>1</sup> publisher of *Consumer Reports*®, submits the following comments in response to the U.S. Department of Energy (“DOE”) in the above-referenced matter.

### **Background**

Consumers Union has been a long-time advocate of enforcing and improving Energy Guide and Energy Star labeling for appliances and electronics. During routine

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<sup>1</sup> Consumers Union of United States, Inc., publisher of *Consumer Reports*®, is a nonprofit membership organization chartered in 1936 to provide consumers with information, education, and counsel about goods, services, health and personal finance. Consumers Union’s publications and services have a combined paid circulation of approximately 8.3 million. These publications regularly carry articles on Consumers Union’s own product testing; on health, product safety, and marketplace economics; and on legislative, judicial, and regulatory actions that affect consumer welfare. Consumers Union’s income is solely derived from the sale of *Consumer Reports*®, its other publications and services, fees, noncommercial contributions and grants. Consumers Union’s publications and services carry no outside advertising and receive no commercial support.

product testing, Consumers Union has discovered large discrepancies between the claims made in energy-usage labeling for several appliance models and the energy actually expended and has brought these matters to the attention of the Department of Energy. Some Consumers Union's tests have been identical to those required under DOE testing protocols while other tests have diverged from the agency's protocol in ways that we believe are more representative of how consumers actually use these appliances. In both cases, however, our results raise significant questions about the enforcement of the Energy Star program as well as casting doubt on whether certain appliances should in fact qualify.

Consumers rely on energy-usage labeling in choosing energy efficient products, but such labels are only effective if they are reliable and verifiable. Consumers Union advocates for third-party certification of compliance conducted by independent, accredited testing laboratories combined with DOE spot checking of Energy Star and Energy Guide manufacturer labels. However, even these measures will not protect consumers from misleading Energy Guide and Energy Star labels if the test procedures do not accurately reflect true energy use in consumers' homes. Indeed, our tests have suggested that some manufacturers may have engineered their products to "recognize" the DOE test protocol and perform in ways that save energy during the testing procedure, but are unlikely to be duplicated once in a consumer's home where such conditions will rarely pertain. Below are the key findings from our test results and our recommendations for preventing manufacturers from "building to the test."

## **Findings from Test Results<sup>2</sup>**

During Consumers Union's routine testing in 2006, we discovered that some French-door, LG-branded refrigerators used less energy than predicted. The DOE test protocol required tests to be run at a 90°F ambient temperature without opening the refrigerator or freezer door, and we found that the refrigerator's sensors monitored for such conditions and then turned off a door gasket heater, lowering the electricity consumption, at only that condition. As a consequence, these refrigerators consumed less energy in the test than consumers would experience in their own kitchens where such high temperature conditions would seldom if ever occur. The result was a misleading Energy Guide label and qualification for the Energy Star that we did not believe was deserved. Indeed, DOE subsequently dealt with this issue by revising the test procedure to require uniformity of functionality between testing and typical operating temperatures.

Two years later, in 2008, Consumers Union discovered that the labeled energy use of some French-door refrigerators with through-the-door ice and water dispensers was based on energy consumption measured when the cold air to the ice maker's storage compartment was turned off. Although the test procedure allowed for this, the ice maker would not normally be turned off when in typical use since this would cause the ice to melt. The test procedure had been developed when through-the-door ice and water dispensers were found mostly on side-by-side refrigerators. In a side-by-side, the ice-storage compartment is in the freezer, and so "turning off the ice maker" only referred to the mechanical harvesting of the ice and had very little, if

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<sup>2</sup> The *Consumer Reports* articles describing these findings are attached as an appendix.

any effect on energy consumption. But, with French-door models, the through-the-door ice and water dispenser is located in the refrigerator (not the freezer). Some manufacturers interpreted “turning off the ice maker” as turning off the cold air to this area. If a consumer were to do this, their ice would end up on their kitchen floor as a puddle of water. Once again, the test conditions and results used to qualify for an Energy Star label did not reflect what consumers would experience in their own homes.

In 2009, Consumers Union reported on a Haier freezer that used significantly more energy in our tests than claimed on its Energy Guide label. Our test results indicated that the model exceeds the U.S. Department of Energy’s allowable energy use and should not qualify for the Energy Star. Neither of the two samples reached 0° F in our energy tests, and both used 70 percent more energy than the amount indicated on their Energy Guide labels. Our findings were recently confirmed in a consent decree between DOE and Haier, which noted that a defective part caused the freezer to consume more energy than identified on its label.

This year, we reported that some refrigerator brands were taking further liberties with the test procedures – liberties that might not be expressly prohibited by the DOE’s outdated test procedures, but nonetheless resulted in misleading reports of energy usage when viewed in the context of real-life usage, thus undermining the spirit if not the letter of the Energy Star and Energy Guide programs. The DOE refrigerator test procedure is run by setting the temperature controls at “mid / mid” and then at “warm / warm” to bracket a refrigerator / freezer temperature of 45° / +5°. When the controls were set to their warmest setting, some refrigerators shut off

electrical components, lowering energy consumption. However, since a consumer would rarely if ever set the controls to the warmest setting, the touted energy savings are unlikely to be achieved by consumers; once again, the labels do not reflect what consumers are almost certain to see in their own kitchens.

### **Recommendations**

Refrigerator test procedures should reflect typical consumer conditions. One important change would be to explicitly forbid any special energy savings at test temperatures, settings, or conditions that consumers themselves will not see (or are very unlikely to see). Typical consumer conditions include operating the refrigerator at an ambient temperature of 70°F, many door openings, settings that result in box temperatures near 37°F / 0°F, and normal operation of any special compartments such as icemaking compartments.

Another test change that we recommend is to require compartment temperatures to be within a smaller range of acceptable values, such as within  $\pm 2^\circ\text{F}$  of ideal storage values. This is the more typical temperature refrigerators use in a consumer's home and narrows the inaccuracies associated with interpolation to estimate energy usage. Alternatively, only a single test would need to be run if 37°F / 0°F is achieved in the first trial. This would be simple for models with digital controls and probably not onerous for models with mechanical controls.

If they are to remain useful, test procedures need to keep up with developments in products and must be continually updated and strengthened. Regulations should explicitly provide a procedure for DOE to quickly close testing

loopholes that manufacturers can exploit simply to attain better test results that are unlikely to be experienced by consumers, and should also hold manufacturers accountable for any intentional manipulation of test procedures. Although we realize that DOE is under lengthy statutory notice and comment requirements, the normal regulatory process takes years and is simply too long to be effective in maintaining the integrity of the test procedures. Testing procedures must be updated more frequently, especially when new trends and technologies arise.

### **Conclusion**

For the foregoing reasons, Consumers Union urges DOE to adopt these recommendations in its implementation of new refrigerator conservation standards and testing procedures.

Respectfully submitted,

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