

Position of Whirlpool Corporation Regarding 2007 ENERGY STAR® Qualifying Levels for Clothes Washers

**(Prepared as Comments to the
Department of Energy—Submitted September 13, 2004)**

Background: Whirlpool Corporation appreciates the opportunity to provide input to the Department of Energy regarding this subject. We are sure that all of our competitors are also deeply interested in this matter, however, as the world's leading manufacturer and marketer of home laundry equipment, Whirlpool is uniquely positioned to comment. We produce approximately one out of every two washers sold in the U.S., with the majority of those coming from our manufacturing facility in Clyde, Ohio.

The ENERGY STAR program has served as an excellent means of voluntary market transformation. We agree that the ENERGY STAR qualifying level for clothes washers should be raised effective January 1, 2007 when the minimum federal energy efficiency standard increases. We further agree that the qualification level should incorporate a maximum water factor (WF) at that time. As noted by the Department, increasing MEF alone does not guarantee a level of decline in WF. The addition of a WF should further increase the interest of water utilities in incentivizing the purchase of more water efficient appliances.

The energy performance and water performance of the appliance should be communicated to prospective purchasers on one label. This will allow the consumer to look at one place to determine both aspects of product efficiency. It minimizes product "clutter", given that manufacturers also have additional product labels for features and other point-of-purchase marketing messages. Finally, one label is a more cost-effective approach for manufacturers.

The Department of Energy has gained considerable experience and familiarity with the program and the various stakeholders as well as with the practical considerations (timing, investment, etc) faced by the home appliance industry. Consequently, we feel that the Department is best suited to manage a combined Energy and water labeling program going forward.

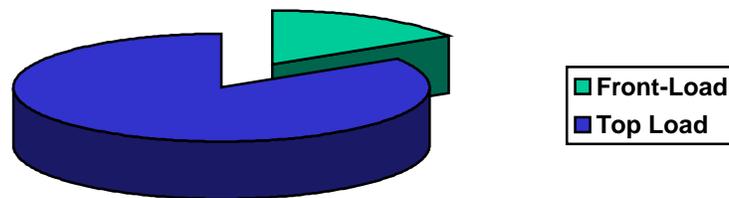
We believe that the goal of the ENERGY STAR program to provide recognition to that volume which represents the 20-25% most efficient products offered in the marketplace continues to be effective in many respects: manufacturers strive to provide high-utility products which achieve this recognition, consumers recognize the ENERGY STAR mark as an indication that they will incur lower operating costs with these products, and the continued success of the program demonstrates the value of market-based transformation initiatives.

The *Market Impact Analysis of Potential Changes to the ENERGY STAR Criteria for Clothes Washers* states that the current penetration of ENERGY STAR washers is 28%, somewhat above the stated target. We respectfully take a different view. Whirlpool has proprietary information which indicates the ENERGY STAR (MEF of at least 1.42) portion of washer sales has just moved above 20% in 2004. Thus, the program is operating on target. Upward revisions to qualifying levels must not be too dramatic in order to maintain performance in the desired 20 –25% range.

Consumer Utility Requirements: It is important that the Department continue to recognize that the qualification level be set in a manner which will allow the manufacture and sale of products which meet consumers performance and utility expectations. Specifically:

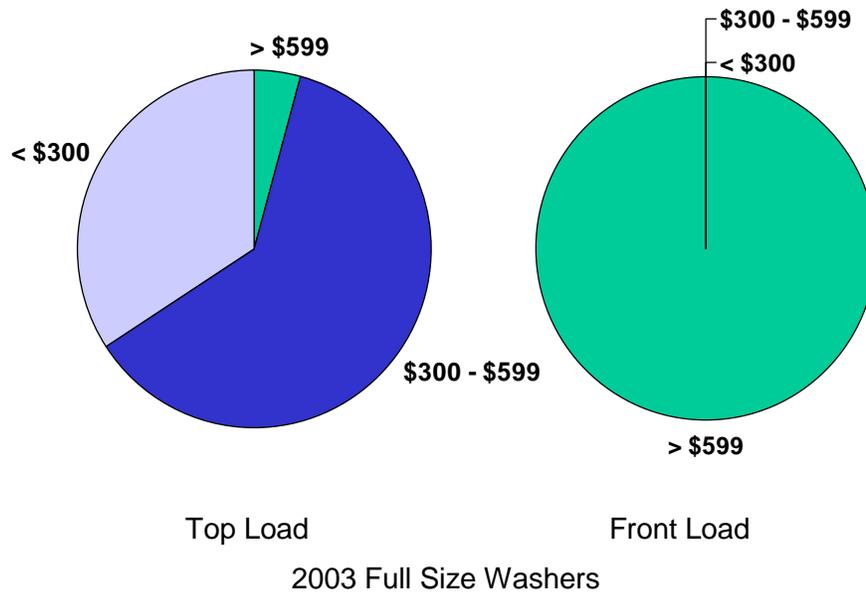
- Consumer behavior shows that they require the flexibility of purchasing either top-loading or front-loading washers. Chart 1 shows that 85% of consumers continue to purchase top-load washers, despite the introduction of more front-load washers over the past several years.

Chart 1: The Vast Majority of U.S. Consumers Continue to Prefer Top-Load Washers (2003 Data)



- Also note in Chart 2 that top-load machines cover a broad array of price points, while front-load machines are more costly. The ENERGY STAR qualification level needs to be set in a manner which allows both types of machines to achieve ENERGY STAR ratings so that consumer choice and utility are retained.

**Chart 2: The Price Mix Differences
Between TL & FL are Significant**



- Consumers require full-size washers, generally in excess of 3.0 cubic feet, in order to meet the demands of busy families. Several factors demonstrate this point:
 - Each year since 1995 a leading consumer magazine has indicated that capacity is the number one driver of consumer purchase decisions
 - Recent Whirlpool market research shows this continues to be true
 - Research further indicates that consumers increasingly desire to wash more bulky items (pillows, comforters, etc) at home rather than taking time to go to a Laundromat in search of a larger machine

While washers with smaller baskets can more readily achieve higher MEF's and lower WF's, it is important that the ENERGY STAR qualifying level be set in a fashion that allows full-size washers to achieve ENERGY STAR status.

- Consumers require the cleaning performance provided by hot and warm water washes. In order to achieve higher levels of energy efficiency, manufacturers have reduced the wash water temperatures. Taken to an extreme a washer could be produced which does not utilize hot/warm water. However, such a unit would not provide the

cleaning performance consumers demand. Similarly, reducing the water levels in a top-load washer will reduce the WF, but at the risk of increased fabric wear, insufficient rinsing of detergent and soils, and poor cleaning performance. The ENERGY STAR qualifying levels need to be set in a manner which allows qualification to be achieved while retaining the cleaning performance that consumers demand.

Position—MEF: The MEF is an excellent measure of laundry energy consumption, developed through collaboration between the Department, energy advocates and the appliance industry. Because it captures the system-wide energy use, it allows manufacturers to make tradeoffs between the washing and drying process that improve both product performance and energy efficiency.

When the ENERGY STAR qualifying levels were increased in response to the 2004 increase in the minimum energy efficiency level, the Department adopted the second tier of the Consortium for Energy Efficiency (CEE) specification. That reflected an MEF of 1.42. Again, Whirlpool has substantial reason to believe that the percentage of ENERGY STAR qualified washers shipped in the first half of 2004 has exceeded 20% for the first time, just now meeting the Department's goal of 20 – 25%.

Whirlpool recommends that the new ENERGY STAR MEF qualification level be set at 1.60, consistent with the current CEE Tier 2 level. This will provide a substantial increase in the qualification level (12.7%) while retaining washer utility demanded by consumers as discussed above. Whirlpool's product development and engineering expertise suggest that any MEF in excess of 1.60 would significantly adversely impact these consumer utility issues.

Position—WF: While specific industry data is unavailable, Whirlpool believes that in 2003 the average washer WF was approximately 12.0. Whirlpool recommends that the 2007 ENERGY STAR qualification include a WF of 10.0, a 16.7% reduction from today's average water consumption. Our engineering analysis suggests that this level will allow select models of the top-load, agitator-based washer preferred by 85% of American consumers to continue to qualify. Additionally, ENERGY STAR washers would be able to meet the other important consumer utility points mentioned above.

A key design consideration for top load washers is to assure adequate rinsing of the washed clothes in order to flush away all detergent and soil. Traditionally, this is done in a deep-fill rinse. One method of reducing WF is to utilize a spray rinse approach. While this uses less water, it also prohibits the use of liquid fabric softeners, as there is insufficient water to properly disperse the softener. This is an example of the design and consumer utility tradeoff issues that must be evaluated by manufacturers and consumers alike when developing or purchasing more energy and water efficient appliances.

Whirlpool and other manufacturers have been working with the MEF for some time. Because of this experience, we are quite familiar with how various design, feature and engineering options will affect product performance and consumer utility. On the other hand, our experience with WF is much less. Because the relationship between design options and product performance is less well known for WF, we request that the initial level-setting efforts not be overly aggressive. This will allow manufacturers to improve water efficiency while maintaining high consumer utility. As a result, we recognize that the WF qualifying level may go through more frequent adjustment as all interested parties climb the learning curve.

Result: The ENERGY STAR data (as of August 24, 2004) lists 185 qualifying models. If one eliminates machines with: (i) baskets under 3.0 cubic feet, (ii) MEF under 1.60, (iii) and WF over 10.0, only 47 of those models would qualify for ENERGY STAR status. This suggests that the above proposal would continue to target only the elite performing washers. Considerable volume growth would be required before the target range of 20 – 25% of total volume meeting ENERGY STAR qualification would be exceeded. (Note: These comments reflect only the number of models, not the volume of those models. However, based on an empirical assessment of the remaining 47 models, Whirlpool believes the current volume of these units to be substantially below the 20% threshold.)

Energy Savings: In the *Market Impact Analysis of Potential Changes to the ENERGY STAR Criteria for Clothes Washers* the Department provides Tables 4, 5, and 6 which show the potential savings at various MEF's. The incremental savings and percent change are summarized below:

Table	MEF	Aggregate Savings (MW h/yr)	Percent Change
4	1.60	397,515	--
5	1.70	415,436	4.5%
6	1.80	426,840	2.6%

The theoretical savings at higher MEF levels are quite modest, as shown in the last column above. Further, these tables assume that the ENERGY STAR program achieves 20% penetration in all cases. Yet the only washers capable of achieving higher MEF's are more expensive front-load machines (see Chart 2). Hence, it is highly unlikely that a 20% penetration would be achieved at MEF's above 1.60. As penetration levels decline, the savings at higher MEF levels would be less than those projected at an MEF of 1.60.

Other Points: In the *Market Impact Analysis of Potential Changes to the ENERGY STAR Criteria for Clothes Washers* the number of ENERGY STAR

qualifying models are shown at different MEF levels. It is important to note that the number of models is not necessarily reflective of volume. The recent increase in the number of qualifying models reflects the creation of variation lines by manufacturers as well as the introduction of truly differentiated product offerings. Further, an analysis of the ENERGY STAR website data shows that many of the higher MEF machines have basket volumes well under 3.0 cubic feet. Baskets of this size do not provide the load capacity that consumer's demand in today's washers.

Whirlpool urges the Department to move forward promptly with the decision on 2007 ENERGY STAR qualifying levels. Resources are already being dedicated to the design and development of the 2007 model line required to meet the new minimum energy efficiency standard. Scarce engineering resources will need to be dedicated to meeting the new ENERGY STAR levels. Should tooling or other long lead-time items be required as well, specifications must be developed promptly and orders placed soon thereafter. Finally, adequate time for consumer testing is required to assure that these products meet the consumer performance and usability requirements. The sooner we know what the ENERGY STAR qualifying levels will be, the greater the likelihood that Whirlpool can have appropriate product in the marketplace in a timely manner.

Summary: Whirlpool Corporation supports the raising to the 2007 ENERGY STAR qualification level for washers. Further, we support the inclusion of a water factor in the qualifications. Care must be taken in establishing the levels to retain consumer utility in: machine configuration (top-load and front-load), full-size capacity and use of hot/warm water washes.

Specifically we recommend a qualification level of $MEF = 1.60$, $WF = 10.0$. This will incent the creation of products which meet the ENERGY STAR criteria of being: among the most efficient, commercially available and not dependent on proprietary technology, cost-effective price premium, and performance meeting or exceeding that of existing products

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