



June 30, 2022

Ms. Ga-Young Park
Product Manager for Appliances
Environmental Protection Agency
ENERGY STAR Products Program
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Re: Whirlpool Supplemental Comments to AHAM - ENERGY STAR Dishwashers Version 7.0 Final Draft Specification

Dear Ms. Park:

Thank you for the opportunity to comment on the Environmental Protection Agency's (EPA) Final Draft Version 7.0 ENERGY STAR Dishwasher Specification, published on June 2, 2022.

Whirlpool Corporation (NYSE: WHR) is committed to being the best global kitchen and laundry company, in constant pursuit of improving life at home. In an increasingly digital world, the company is driving purposeful innovation to meet the evolving needs of consumers through its iconic brand portfolio, including *Whirlpool*, *KitchenAid*, *Maytag*, *Consul*, *Brastemp*, *Amana*, *Bauknecht*, *JennAir*, *Indesit* and *Yummly*. In 2021, the company reported approximately \$22 billion in annual sales, 69,000 employees and 54 manufacturing and technology research centers. Additional information about the company can be found at WhirlpoolCorp.com.

Whirlpool Corporation (Whirlpool) has recently announced a global commitment to reaching net-zero emissions in our plants and operations by 2030. Additionally, Whirlpool has already committed to achieving a 20% reduction in emissions linked to the use of its products across the globe by 2030, compared to 2016 levels. This is to say that Whirlpool continues to strongly believe in the mission and goals of DOE, and specifically with the appliance and equipment standards program. We look forward to many more years of continued partnership and collaboration between EPA and Whirlpool in improving appliance efficiency and reducing the emissions associated with use of appliances.

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As a very active member of the Association of Home Appliance Manufacturers (AHAM), Whirlpool has worked closely with them in the development of the industry comments they submitted (under separate cover) on this draft specification. **Please be advised that we continue to support and echo the AHAM positions, particularly that the proposed ENERGY STAR specification will likely have a negative impact on manufacturers, our customers, and on the ENERGY STAR brand itself. Based on current data we have, there is no reasonable payback period expected for customers purchasing a new ENERGY STAR dishwasher meeting the proposed specification. Core performance of the product will also suffer. Further, EPA should not use the flawed and highly variable performance test method. It will not produce the effect that EPA intends by its reference. We continue to strongly agree with AHAM that EPA should sunset the ENERGY STAR specification for dishwashers, and that the resources of EPA and its stakeholders are better directed towards increasing dishwasher ownership and promoting optimal use.** Our below comments expand on AHAM's comments and provide additional detail or data to reinforce our industry positions; as well as to comment on areas where AHAM cannot comment.

Thank you again for your consideration and we look forward to continued discussion on this topic.

Best regards,

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**Whirlpool Corporation Supplemental Comments to AHAM
ENERGY STAR Version 7.0 Final Draft Dishwashers Specification
June 30, 2022**

We continue to strongly disagree with EPA's intention to move forward with an ENERGY STAR Version 7.0 specification for dishwashers. Moving forward with this specification presents several issues for EPA, manufacturers, and for our consumers, and which have been discussed at length in our past comments and in meetings with EPA. These issues include:

- Expected and documented performance issues with dishwashers meeting the proposed Version 7.0 specification energy and water levels, including drying performance, cleaning performance, noise, and cycle time;
- Data from the US Department of Energy (DOE) indicates that consumers purchasing dishwashers meeting the proposed Version 7.0 specification will not receive a reasonable payback period on their investment of purchasing a new ENERGY STAR-certified appliance;
- A potentially significant price increase for consumers, especially from low-income households, to purchase a new dishwasher certified to the proposed Version 7.0 specification. This would happen at a historically-challenging moment for our country with inflation levels the highest they have been in about 40 years. This administration has already taken several strong actions and made commitments to counter this inflation; and
- Statistically-significant variation with the ENERGY STAR Test Method for Determining Residential Dishwasher Cleaning Performance, and a lack of correlation between scores from this cleaning index and actual consumer satisfaction, which render it as a very poor metric to be referenced by ENERGY STAR in this specification.

The ENERGY STAR product labeling program is a private-public partnership of manufacturers (and other stakeholders) with the EPA and DOE federal government agencies. A partnership means that all parties work together towards a common goal, which in this case is improving the energy and water efficiency of products, reducing greenhouse gas emissions, and removing barriers that deter consumers and businesses from identifying and purchasing the most energy efficient product that meets their needs. Performance specifications (standards) are established to recognize products that are cost-effective for the purchaser, are commercially-viable and broadly-available, and offer at least equivalent features and functionality as standard products.

Together with EPA, our partnership has already resulted in reductions of the energy and water usage of dishwashers by over 50% over the last 25 years. In short, it has been a successful partnership for nearly three decades and we genuinely hope that it continues to be successful for many years into the future. Key to a continued successful partnership, however, is appreciating and addressing the nuanced concerns presented by partners (and supported by data), especially the manufacturers who design, test, certify, and manufacture ENERGY STAR-certified dishwashers. To date, we do not believe that these concerns have been adequately addressed by EPA in prior discussions and in the stakeholder comment response matrices.

For the issues raised above, EPA has not been able to adequately present evidence to counter the position of manufacturers that the ENERGY STAR Products Program Strategic Vision and Guiding Principles will be violated by moving forward with the Version 7.0 specification. In particular, the core tenets of cost-effectiveness and equivalent performance will be violated for dishwashers meeting the proposed ENERGY STAR Version 7.0. Our data, and the data from DOE, clearly show this.

Cost-effectiveness

DOE's preliminary analysis and technical support document (TSD) for the rulemaking for possible energy conservation standards for dishwashers, released in January 2022, indicates a lack of cost-effectiveness for consumers purchasing a dishwasher meeting the proposed Version 7.0 specification. As EPA is aware, DOE and their contractors interview manufacturers, perform product teardowns, test models on the market, and develop cost modeling as part of their intensive regulatory analysis process. DOE uses all of this data to develop efficiency levels (ELs), upon which their analysis and selection of possible amended standards are based. DOE selects the energy conservation level that gives the maximum energy/water savings possible while still meeting various criteria, including cost-effectiveness, impacts to manufacturers, impacts to product utility and performance, lessening of competition, etc. This is to say that the 341-page analysis published by DOE is a very comprehensive data package, which should ultimately form the foundation for further analysis, investigation, and data collection by EPA for ENERGY STAR specification development work.

As we stated in our comments to the Draft 2 specification, DOE's EL 3 corresponds to the Final Draft Version 7.0 levels, while EL 1 equals current ENERGY STAR Version 6.0 levels. DOE estimates an incremental manufacturing cost of \$71 to improve a dishwasher from current DOE standard levels (baseline) to EL 3. This is still \$53 when considering the incremental cost between EL 1 and EL 3. None of these figures include a manufacturer and retailer markup estimate, which DOE uses to maintain similar per-unit operating profit for manufacturers and retailers/distributors before and after amended standards. Applying markups would ultimately raise the estimated price paid by the consumer for an ENERGY STAR Version 7.0-compliant dishwasher by DOE's own estimate of \$110.

EPA's estimated *consumer purchase cost* increase from the Draft 1 data package is less than half of this (\$48). EPA's cost analysis selects a very limited number of models with "similar characteristics" from possibly different manufacturers, and analyzes online retail pricing at one point in time (February 2020), to determine the difference in price between models meeting the current Federal Standard levels and models meeting the proposed Version 7.0 levels.

It is not fair to EPA's manufacturer partners to discount and ignore the data that was gathered by DOE, because again, this is largely developed with the input and data provided by manufacturers to DOE and their contractor(s). The end purpose and application of the data does not ultimately matter. The data speaks for itself, and conclusions that can be drawn from it will be the same regardless of whether those are applied in the federal energy conservation standards context for DOE, or with "voluntary" standards for ENERGY STAR.

EPA's goal with ENERGY STAR is to ultimately drive higher adoption of appliances certified to the program, which further reduces greenhouse gas emissions for the planet through energy savings. To say that ENERGY STAR is only recognizing the top performers that are currently on the market is simply not true. EPA knows that, historically, manufacturers have responded to amended specifications by redesigning and relaunching models to eventually meet the new criteria. So DOE's cost estimates, which include product conversion costs, capital conversion costs, manufacturer production costs, and stranded assets are entirely salient for ENERGY STAR specification development.

EPA correctly recognizes that DOE has not finalized their analysis for this energy conservation standard rulemaking, and in fact, manufacturers are in process of participating in interviews with DOE's contractor to review and update the Manufacturer Impact Analysis (MIA). This gives even more justification for EPA to, at a minimum, hold off on publication of a final specification here while DOE considers and makes any updates to this existing analysis. It would be in the best interest of the agency, as well as the ENERGY STAR partners and stakeholders, for EPA to have the best and most updated data available to make decisions that impact its consumers and partners.

We also disagree with EPA's decision to base their analysis on the higher average annual cycles for dishwashers (215 cycles per year), based on older data, instead of the updated figure (184 cycles per year) that will be used for compliance with any amended standards under the proposed Appendix C2 DOE test procedure. DOE is delaying the use of the updated annual cycles because of the impact to measured energy and complications with updating product certified energy/water ratings and EnergyGuide labels. DOE is appropriately delaying the implementation of the updated cycles until the compliance date of any amended standard. However, DOE's data that is used to lower the average annual cycles still remains relevant for use and reference by EPA in their analysis for this Version 7.0 specification development, just as DOE is using it in their analysis for any amended standards. The fact remains that consumers are using that many average annual cycles *today*, and this is not an estimate of the cycles per year that they will use in several years at the compliance date of any amended DOE standard. EPA should update their analysis with the most current consumer data available to them, because this will give the best picture of energy and water savings to the consumer from the proposed Version 7.0 specification.

Updating this information on cycles per year will lower the average annual energy savings from 67 kWh/yr to 55 kWh/yr, between a model meeting the DOE baseline level and the proposed ENERGY STAR Version 7.0 level. The water savings would be reduced from 387 gallons/yr to 331 gallons/yr. This is a loss of at least \$2.15 in energy and water savings per year for the consumer when using the updated data, which would correspond to a decrease in EPA's estimated annual operating cost savings from \$12.78 per year to \$10.63 per year. This would increase the payback period from 3.7 years in EPA's existing data to 4.5 years.

Again, if EPA recognizes DOE's updated and comprehensive data, the consumer payback period will be far beyond the acceptable limits for ENERGY STAR to consider moving forward with this Version 7.0 specification. DOE estimates a 12.9 year payback period for a consumer purchasing a dishwasher meeting the proposed Version 7.0 specification, which is even beyond EPA's estimated 12 year lifetime of a dishwasher. DOE also estimates that about 77% of consumers would experience a net cost from purchasing a dishwasher meeting the proposed Version 7.0 specification. We know that many of those consumers experiencing a net cost will be from low-income households. We may not be able to offer an affordable ENERGY STAR-certified plastic tub dishwasher model to these consumers anymore. This will be counter to the goals of this administration, including the EPA, to address issues related to environmental justice.

Product Performance

We continue to strongly believe that the guiding principle of ENERGY STAR to offer labels for energy- and water-efficient products that maintain equivalent performance of non-qualifying models, will be violated if EPA decides to move forward with a final specification. As we have shared with EPA in our comments during this Version 7.0 specification development process, our data shows that dishwashers may not have consumer-acceptable performance when meeting these lower energy and water levels.

These performance issues include cleaning performance, drying performance, detergent effectiveness, cycle time increases, and noise. We will not reiterate all of our comments and data that have already been submitted to EPA during this specification development process. However, EPA should consider these impacts, supported by our data, in relation to the guiding principle of ENERGY STAR to maintain performance with enhanced water- and energy-efficiency. Violating this principle will hurt our consumers and the ENERGY STAR brand, if consumers lose that trust they have today in the ENERGY STAR label. We do not want consumers to come to associate the ENERGY STAR label and brand with poor performance. It only takes one bad experience, in some cases, for a consumer to lose all trust in a brand, and that is why EPA should never make exceptions to that guiding principle for product performance maintenance.

Finally, we point out that EPA cannot rely on the proposed reference of the ENERGY STAR Test Method for Determining Residential Dishwasher Cleaning Performance, and the proposed minimum cleaning index requirement, as any guarantee of consumer-acceptable performance with dishwashers meeting the proposed Version 7.0 specification. First, there is no correlation between scores generated using this cleaning index and actual consumer satisfaction. In data submitted to DOE for the Notice of Proposed Rulemaking (NOPR) on the dishwasher test procedures, we provided real-world consumer wash satisfaction data compared to lab-tested scores from the AHAM dishwasher performance standard (AHAM-DW-1-2010, which was recently revised as DW-2-2020). A model with a score of around 50 has nearly equivalent consumer wash satisfaction as models with scores of 90 or more. In order to be a good metric to be referenced by ENERGY STAR and used by manufacturers, there must be strong correlation between the test and actual consumer satisfaction. Otherwise, tested scores and a minimum cleaning index threshold are meaningless to our consumers, and a waste of time and resources for manufacturers.

Second, there are repeatability and reproducibility issues with this performance test, which we have documented to EPA for many years. Repeatability issues show up as run-to-run variation in a single lab, as a technician/grader may grade the same soil level on a dish differently between runs, or multiple technicians in a single lab grade dishes differently. Reproducibility shows up as lab-to-lab variation where technicians in different labs produce different scores. Any performance test where a human performs grading and scoring will have variation. People see and interpret the same spots and soils differently, even in the same lab with the same test conditions, which leads to wildly different scoring. It is very difficult to control this within a single manufacturer's lab, let alone with several different labs.

It is not appropriate for EPA (or DOE) to use any test method with unresolved variation on the order of over 13 points, using this cleaning index. This variation can and will lead to competitive imbalance in the marketplace, depending on how a manufacturer's models perform in their chosen lab. A manufacturer testing and certifying their ENERGY STAR dishwasher through a lab that consistently runs on the high end of the scoring (e.g. 75 score) will be able to get any competitive advantages of certifying ENERGY STAR dishwashers over a manufacturer who does not utilize a lab that consistently tests high for the scoring (e.g., 62 score). So EPA could unintentionally create competitive imbalance in the marketplace just based on this unresolved variation in the performance test. While it's not a guiding principle for ENERGY STAR, per se, competitiveness appears to be a key consideration for EPA in the specification development process, as EPA considers the number of manufacturers that manufacture qualifying models and the proprietary nature of any technologies in use.

Conclusion

We again appreciate the opportunity to provide comments on this final draft specification. We believe that moving forward with a final specification at this point will violate the core guiding principles of ENERGY STAR for cost-effectiveness and maintained performance for amended specifications. The data submitted by us and AHAM through this specification development process, as well as the data published by DOE in their preliminary analysis for the dishwasher energy conservation standards rulemaking present a compelling case for EPA to take the only correct course of action here: sunset the ENERGY STAR program for dishwashers.

At a minimum, EPA should wait for any updates to the DOE data in their rulemaking process. EPA cannot ignore this data and proceed with their own contradictory data, especially when this data comes from another government agency with particular expertise on appliance efficiency standards. The differences between the EPA data and the DOE data are not meaningless. They are substantial, and are grounds for EPA to pause this Version 7.0 specification development effort before moving to finalization.

We do not, however, think that our partnership with ENERGY STAR on dishwashers ends at a program sunset. The most recent data from the Energy Information Administration (EIA) indicates that a significant

number of households still do not own a dishwasher (27%), and about 40% of households total either do not own or own but do not use their dishwasher. These are significant opportunities for us to partner together with other stakeholders and figure out how we can get more dishwashers in homes and get consumers to use them, and use them optimally without wasting water with pre-rinsing.

However, we do see these opportunities as mutually exclusive to a specification revision. Consumers may be less willing or unable to afford a new ENERGY STAR dishwasher if the specification is revised, with significant increases to product cost (per DOE's own data). Lower performance overall (drying, cycle time, cleaning, noise, etc.) may mean that consumers are less willing to use at all, or optimally use, their new dishwasher meeting the Version 7.0 levels. It will be more difficult to convince consumers who already see dishwashers as a luxury appliance to use it instead of handwashing dishes or skipping pre-rinsing, if they are not completely satisfied with the product performance. So we do not see this the same as EPA as potentially compatible actions and projects that can happen together with a specification revision.

As always, please do not hesitate to reach out for continued discussion on these topics.