

# ENERGY STAR® Criteria for Dishwashers Revision Meeting Notes

U.S. Department of Energy Headquarters  
Forrestal Building, Room 1E245  
July 13, 2005

## Speakers:

Michael McCabe, U.S. Department of Energy  
Richard Karney, P.E., U.S. Department of Energy  
Bill McNary, D&R International, Ltd.  
Michael Beyerle, GE Consumer & Industrial  
Rebecca Foster, Consortium for Energy Efficiency  
Ed Osann, Steering Committee for Water Efficient Products  
Al Dietmann, City of Seattle  
Larry Wethje, Association of Home Appliance Manufacturers  
Bryce Wells, Fisher & Paykel  
Wayne Klug, Whirlpool Corporation  
David Steiner, Maytag Corporation

## Attendees:

**Richard Allen**, AM; Appliance Group  
**Debra Bengston**, Maytag Corporation  
**Michael Beyerle**, GE Consumer & Industrial  
**Erica Brown**, Association of Metropolitan Water Agencies  
**Kevin Brown**, Maytag Corporation  
**Josh Butzbaugh**, D&R International  
**David Calabrese**, Association of Home Appliance Manufacturers (AHAM)  
**Mary Ann Dickinson**, California Urban Water Conservation Council  
**Al Dietemmann**, City of Seattle, Washington  
**Maureen DesMarais**, Procter & Gamble  
**Mike Edwards**, BSH Home Appliances  
**John Flowers**, U.S. Environmental Protection Agency  
**Rebecca Foster**, Consortium for Energy Efficiency  
**Anthony Fryer**, D&R International  
**Susan Gardner Zartman**, D&R International  
**Tony Gregg**, City of Austin, Texas  
**Earl Jones**, GE Consumer & Industrial  
**Chris Kaeser**, Ultra 8 International  
**Richard Karney**, U.S. Department of Energy  
**Wayne Klug**, Whirlpool Corporation  
**Matthew Kueny**, Miele

**Sean Mackay**, Whirlpool Corporation  
**Donald Mauritz**, Lawrence Berkley National Lab.  
**Michael McCabe**, U.S. Department of Energy  
**Bill McNary**, D&R International  
**Jenny Moe**, Procter & Gamble  
**Renata Mortazavi**, Natural Resources Canada  
**Ed Osann**, Steering Committee for Water Efficient Products  
**Steve Polinski**, Miele  
**Ramona Saar**, Association of Home Appliance Manufacturers (AHAM)  
**Rachel Schmeltz**, U.S. Environmental Protection Agency  
**Annie Scott**, D&R International  
**James Siegel**, D&R International  
**David Steiner**, Maytag Corporation  
**Scott Thigpen**, D&R International  
**Jennifer Thorne-Amann**, American Council for an Energy-Efficient Economy (ACEEE)  
**Michael Wasson**, AM; Appliance Group  
**Bryce Wells**, Fisher & Paykel  
**Heather West**, Whirlpool Corporation  
**Larry Wethje**, Association of Home Appliance Manufacturers (AHAM)

## **Introduction:**

The notes below are from a stakeholder meeting held on July 13, 2005 to discuss the market impacts of revising the ENERGY STAR criteria for dishwashers. The meeting consisted of topical presentations, open discussion and then closing remarks from the U.S. Department of Energy.

The title and a brief summary are provided for each formal presentation below. Comments that immediately followed the presentations are listed under the presentation summary.

The stakeholder discussion section contains the comments shared with the group. The individual and his/her corresponding organization are attributed to each comment. (Flip chart notes written during the meeting are summarized by topic in Appendix A.)

The topical presentations and other materials pertaining to this meeting can be accessed at the following URL: [http://www.energystar.gov/index.cfm?c=revisions.dishwash\\_spec](http://www.energystar.gov/index.cfm?c=revisions.dishwash_spec).

## **1. Presentations**

### **Opening Remarks**

#### **Michael McCabe, U.S. Department of Energy**

Mr. McCabe indicated that the ENERGY STAR qualified dishwasher program has been successful over the years, which is supported by the current high saturation of qualified dishwashers in the market. DOE wants to continue to recognize the most energy-efficient products on the market; therefore, the purpose of today's meeting is to discuss potential changes to the ENERGY STAR dishwasher criteria and to discuss all dishwasher issues. DOE is mindful that the ENERGY STAR program needs to provide ample opportunity for all manufacturers and does not want only niche products to be part of the program. After today's meeting and once comments are submitted to Richard Karney, we will make recommendations on potential criteria changes.

Mr. McCabe stated that this meeting is timely, considering Congress is currently debating a comprehensive energy bill. The bill contains tax credits for dishwashers, and this meeting on the ENERGY STAR dishwasher criteria will help determine the credit levels for the bill.

### **Comments**

*Richard Karney, U.S. Department of Energy:* The format of the meeting will be to listen to presentations and to debate the relevant discussion points.

*Ed Osann, Steering Committee for Water Efficient Products:* Asked if there has been a final decision made on the ENERGY STAR criteria for clothes washers.

*Richard Karney, U.S. Department of Energy:* Indicated that DOE is meeting with its counterparts at EPA on this subject. DOE received great comments from stakeholders and DOE wants the criteria finalized as soon as possible to allow enough lead-time for 2007.

Mr. Karney also stated DOE plans to host a partner and stakeholder meeting on September 20, 2005 to discuss potential changes to the ENERGY STAR criteria for CFLs. Additionally, DOE will be hosting the ENERGY STAR National Appliance Partner Meeting in Saratoga Springs, NY in late September, and all stakeholders are invited.

### **Overview of ENERGY STAR Criteria Setting Process and History of Clothes Washer Criteria Richard Karney, P.E., U.S. Department of Energy**

*This presentation discussed the Six Guiding Principles of ENERGY STAR criteria development. The Department would like to set an improved efficiency level that captures the top 25% of energy-efficient products. The success of the ENERGY STAR dishwasher program has created an oversaturated market of ENERGY STAR qualified dishwashers and therefore, the ENERGY STAR label does not currently provide differentiation between qualified and non-qualified products.*

*Mr. Karney indicated he is looking for stakeholders to comment on the following issues:*

- *Design/Engineering considerations*
- *Standby power*
- *Water factor*
- *Timing*
- *Any other pertinent issues*

*Mr. Karney also discussed the topic of pre-rinsing. Mr. Karney stated that DOE is in agreement with several organizations that pre-rinsing dishes before placing them into the dishwasher is an issue that needs to be addressed. Consumers do not need to “wash before washing.” DOE has already started the process of implementing a consumer education campaign on this issue and addressed that today’s meeting should focus on potential changes to the ENERGY STAR criteria and not on the pre-rinsing issue.*

### **Review of Market Impact Analysis of Potential Changes Bill McNary, D&R International, Ltd.**

*This presentation explained the Market Impact Analysis on the Potential Revision of the ENERGY STAR Criteria for Dishwashers (DOE Analysis Paper) that was distributed to stakeholders on June 10, 2005. The presentation provided background on:*

- *The dishwasher Federal standard*
- *How the ENERGY STAR criteria for dishwashers had changed over time*
- *ENERGY STAR Qualified dishwasher market and efficiency trends*
- *Water Use Analysis*
- *Standby Power*

*Mr. McNary also indicated that the effects of the new DOE test procedure did not impact the majority of dishwasher’s energy use (i.e., energy consumption did not increase significantly for all soil sensing models). Mr. McNary also asked manufacturers whether they planned on submitting sales-weighted data to DOE to assist with further market analysis.*

## **Comments**

*Earl Jones, GE Consumer & Industrial:* Asked for the source for the average non-qualified water consumption in the presentation (i.e., 9 gallons per cycle). Mr. Jones also asked if the data analysis separated the ENERGY STAR qualified models from the non-qualified models.

*Bill McNary, D&R International:* Indicated the source of the 9 gallons/cycle is from the ACEEE fact book.

*Larry Wethje, Association of Home Appliance Manufacturers (AHAM):* Clarified the standby power number on one of the slides.

*Tony Gregg, City of Austin:* Asked if the drying cycle was factored in to the Federal test procedure. Mr. Gregg also asked if the drying cycle needs to be selected every time when using the average product.

*Bill McNary, D&R International:* Answered that the drying cycle is covered in the test procedure and that the normal cycle is defined in the test procedure.

*Michael Wasson, AM: Appliance Group (AM):* Added that drying is an important part of the cycle. Consumers need their dishwashers to do three things: wash, rinse and dry. Drying is a very important part of performance. Without a drying cycle, the consumer will be upset with performance.

*Ed Osann, Steering Committee for Water Efficient Products (SCWEP):* Asked if the consumer can choose to turn off the drying cycle.

*Michael Beyerle, GE Consumer & Industrial:* The majority of products allow consumers to use their dishwashers without the drying cycle.

*Earl Jones, GE Consumer & Industrial:* Consumers make several choices when using their dishwashers. The drying cycle is something manufacturers assume consumers want.

## **Department of Energy Dishwasher ENERGY STAR Review Michael Beyerle, GE Consumer & Industrial**

*This presentation focused on basic dishwasher functions and various data tables explaining the characteristics of the U.S. dishwasher market. Wash performance, dry performance and capacity are important features that consumers demand. These features cannot be ignored in the criteria revision process.*

*Michael Beyerle stated that GE has some concerns with the data presented in the DOE Market Analysis Paper; mainly that the analysis aggregates models without looking at capacity and that the efficiency numbers are not shipment weighted. The paper also includes 18" dishwashers, which inflate the number of available models with high Energy Factors (EF). These units account for only 2-3% of the market.*

*Mr. Beyerle indicated that it can be tempting to compromise wash performance as one attempts to increase energy efficiency, but performance should not be sacrificed. A leading consumer magazine*

*claims that 20% of available models have less than excellent wash performance and GE's analysis indicates that a high Energy Factor strongly correlates with low wash performance.*

*Mr. Beyerle continued to say that most consumers want a self-cleaning filter, which is another feature that consumes energy. Capacity is also an important feature for consumers. Americans still want things "super-sized" and size is the most important feature after performance. Energy consumption on smaller capacity models should be calculated by looking at the energy consumption per place setting.*

*Mr. Beyerle's final thoughts were that current dishwasher technology holds promise and that manufacturers can continue to refine it and help reestablish the ENERGY STAR dishwasher product category. GE proposes increasing the Energy Factor to 0.65, effective in mid-2007.*

### **Comments**

*Ed Osann, SCWEP:* Asked if GE has data to support its claim that a high Energy Factor is strongly correlated with low wash performance (20% of models), as indicated in the presentation. Michael Beyerle stated he does not have that analysis on hand.

*Kevin Brown, Maytag Corporation:* Asked about the standby power section of the energy consumption chart at the end of Beyerle's presentation.

*Michael Beyerle, GE Consumer & Industrial:* Stated that products can have a higher percentage of standby power energy and the chart is meant to represent a typical dishwasher.

*Tony Gregg, City of Austin:* Asked about a cycle memory option in dishwashers.

*Michael Beyerle, GE Consumer & Industrial:* Stated his concerns over design and the cycle memory. Consumers have so many choices that they forget the original intent of the cycle.

*Debra Bengston, Maytag Corporation:* Stated that consumers can choose any cycle option that prefer.

*Ed Osann, SCWEP:* Commented about GE's proposed level and how it fits into the context of Mr. Beyerle's presentation. Mr. Osann asked if GE is proposing all dishwasher models be included at 0.65 (i.e., all capacities and all levels of wash performance).

*Michael Beyerle, GE Consumer & Industrial:* Responded that GE will consider a capacity measure in the ENERGY STAR criteria. There are a number of issues that DOE needs to consider during this criteria revision process.

*Tony Gregg, City of Austin:* Asked if GE has any data about running the dishwasher with a full load. Mr. Gregg also asked if all GE dishwashers have a pre-rinse option on them.

*Michael Beyerle, GE Consumer & Industrial:* Explained that GE's data counts on consumers not pre-rinsing in the sink and that GE encourages consumers to run full loads. Most GE dishwashers do have a pre-rinse option.

**Proposal to DOE: ENERGY STAR Dishwasher Criteria**  
**Rebecca Foster, Consortium for Energy Efficiency**

*CEE shared the following information from its committee on why the dishwasher market is ready for a criteria change now:*

- *86% market penetration*
- *High number of available models from large manufacturers*
- *Over 25% of products rebated by PG&E have EFs of 0.62 or better*

*CEE has proposed new Energy Factor levels for its dishwasher program (which will go into effect on January 1, 2006) and recommends DOE expedite its process.*

*CEE plans to implement the following, and recommends DOE adopt Tier 1 as a minimum starting point:*

- *Tier 1: EF = 0.62, Maximum kWh/year = 355*
- *Tier 2: EF = 0.62, Maximum kWh/year = 325*

*CEE also recommends incorporating standby power in the ENERGY STAR criteria, collecting information on water efficiency and considering an educational campaign to address pre-rinsing.*

**Potential Changes to ENERGY STAR Criteria for Residential Dishwashers**  
**Ed Osann, Steering Committee for Water Efficient Products**

*Mr. Osann discussed the purpose and goals of the Steering Committee for Water Efficient Products (SCWEP) and discussed several reasons dishwashers are a target product for the committee.*

*Stated that recent data indicates that energy and water use in dishwashers is not as strongly correlated as originally assumed. The Oregon Department of Energy lists the water consumption of the dishwashers that qualify for its program, and in some cases, water efficiency decreases as energy efficiency increases.*

*The Steering Committee recommended DOE take the following steps:*

- *Post water consumption data for all dishwashers with an EF greater than 0.62 on [energystar.gov](http://energystar.gov)*
- *Integrate a water efficiency messaging requirement in the ENERGY STAR Dishwasher Partner Commitments*
- *Consider an EF of 0.62 and a maximum of 6.25 gallons/cycle as a criteria level*
- *Adopt a water factor*
- *Consult with EPA's water office*
- *Consider a second stage ENERGY STAR criteria to take effect in 2008*

Mr. Osann also commented on the savings potential of an educational campaign designed to end pre-rinsing and suggested manufacturers include a DVD with consumer tips in product packaging. Mr. Osann also suggested greater integration of "pre-rinsing" messages into manufacturer point-of-purchase materials and other marketing materials.

## **Comments**

*Earl Jones, GE Consumer & Industrial:* Questioned the 75% spread comment in slide 5 of the presentation (i.e., “of the models on Oregon DOE’s list with an EF of 0.62, the water consumption of the models that use the most water is 75% higher than the models that use the least amount of water). Mr. Jones indicated that is not the case in a typical dishwasher.

*Ed Osann, Steering Committee for Water Efficient Products (SCWEP):* Clarified that one can review the Oregon list to see these data. Several major manufacturers are included in this spread.

*Earl Jones, GE Consumer & Industrial:* The numbers refers to “a lot of 18” models” and major manufacturers make 18” models too.

*David Calabrese, AHAM:* Requested more information on why DOE should consult with EPA Water Office as it develops the dishwasher criteria. Specifically, what role will the EPA Water Office play in the development process?

*Ed Osann, SCWEP:* Answered that EPA is developing a water efficiency market enhancement program and that there is value in consulting with the EPA Water Office to coordinate on recommendations and/or outreach activities.

*Larry Wethje, AHAM:* Questioned the 3.75 gallons in incremental water savings that is stated as potential water savings on slide 11. Mr. Wethje indicated that AHAM’s 2004 shipment-weighted average for dishwasher water consumption is 6 gallons/cycle, so 3.75 gallons/cycle in savings seems high.

*Ed Osann, SCWEP:* Commented that the 3.75-gallon number is from the DOE Market Analysis Paper, which refers to the “most inefficient non-qualified dishwashers,” which use 10 gallons/cycle.

*Michael Beyerle, GE Consumer & Industrial:* Requested information on the issue of energy in municipal water. Mr. Beyerle asked if there are energy efficiency requirements for pressurized water.

*Ed Osann, SCWEP:* Industries like water companies typically do not have energy efficiency requirements.

*Rebecca Foster, Consortium for Energy Efficiency (CEE):* Reported that CEE is starting up an initiative to address water/wastewater energy use.

## **Seattle Public Utilities ENERGY STAR Dishwasher Recommendation Al Dietemann, City of Seattle**

*Al Dietemann’s presentation recommended a minimum EF of 0.62 and 6.1 gallons/cycle for the future ENERGY STAR criteria. Mr. Dietemann also stated that over 35% of the qualified dishwashers rebated in Washington State had a minimum EF of 0.62. Since ENERGY STAR aims to capture the most energy efficient 25% of the market, DOE should consider 0.62 as the minimum EF.*

*Mr. Dietemann presented water efficiency data from the Oregon DOE program and reported that there are several available products with low water consumption. Mr. Dietemann believes ENERGY*

*STAR should include a water efficiency metric in its criteria to help attract water utilities to become partners or collaborate on educational activities.*

*Mr. Dietemann's recommendations are as follows:*

- *DOE should implement an EF of at least 0.62 as soon as possible and consider future phasing*
- *Cleaning performance should be considered for inclusion into the future ENERGY STAR criteria*
- *Compact and single drawer models should be included in the ENERGY STAR criteria (since many consumers will run a dishwasher when it is not completely full)*
- *Require manufacturers to report per-cycle energy and water consumption*
- *ENERGY STAR should encourage the promotion of smaller capacity dishwashers, full loads, and no pre-rinsing to save additional energy and water.*

### **Comments**

*Earl Jones, GE Consumer & Industrial:* Raised the issue of consumers running a dishwasher when it is not full.

*Al Dietemann, City of Seattle:* Stated that he has survey data to confirm this consumer habit. The data is not national.

*Michael Beyerle, GE Consumer & Industrial:* Asked about the number of models rebated on slide (around 10,000 models in 2004). Mr. Beyerle indicated that the number seemed small for the state of Washington.

*Al Dietemann, City of Seattle:* Clarified the numbers were from only the Puget Sound Energy utility territory.

*Michael Beyerle, GE Consumer & Industrial:* Identified the 10,000-model number is a small percentage of total dishwashers sold in the state. Mr. Beyerle asked if Washington would extend more rebates if a water efficiency metric were included. Mr. Dietemann stated that it is highly likely.

*Bryce Wells, Fisher & Paykel:* Shared that rebates on product water use will become an issue. Mr. Wells also indicated that Fisher & Paykel provides a cold-water fill as an option.

*Earl Jones, GE Consumer & Industrial:* Asked how that was relevant to ENERGY STAR.

*Bryce Wells, Fisher & Paykel:* Wanted to confirm that Fisher & Paykel dishwashers use small quantities of water.

### **DOE Workshop on Potential Revisions to the ENERGY STAR Criteria for Dishwashers Larry Wethje, Association of Home Appliance Manufacturers**

*AHAM indicated it is not going to recommend a potential efficiency level, but would comment on several other issues, particularly standby power, water efficiency and timing.*



*Mr. Wethje indicated that if standby power is included in the ENERGY STAR criteria, it should not be a prescriptive limit. The criteria should not limit manufacturers ability to innovate. The issue of energy management was mentioned as an innovation example that might be hindered by a prescriptive limit.*

*AHAM is extremely supportive of a pre-rinsing campaign targeting consumers. However, AHAM is against a prescriptive limit on water use since it is unnecessary. Energy use and water use are strongly correlated; therefore, if the energy efficiency is increased, then the water efficiency will increase as well. The effective date is a critical issue and that DOE should allow for enough lead time so manufacturers can revise product lines and marketing strategies. ENERGY STAR is a critical piece of appliance manufacturer marketing.*

*AHAM stated the following recommendations:*

- ***IF*** standby power is included, incorporate it in the total kWh/year and not separately
- No need for a prescriptive water requirement
- Allow 24 months lead time

### **Comments**

*Tony Gregg, City of Austin:* Asked about the correlation on the “Dishwasher Energy and Water” chart on slide 5 and suggested there is a significant amount of variability that is not accounted for.

*Larry Wethje, AHAM:* Stated the variability is an insignificant factor. The lines are shipment-weighted averages and the outliers are insignificant.

*Tony Gregg, City of Austin:* What if AHAM wants to take into account the average consumer’s concern about water efficiency?

*Earl Jones, GE Consumer & Industrial:* Consumers can get better water efficiency from their dishwashers by buying a more energy-efficient dishwasher. If a consumer is concerned about water efficiency, then he or she should buy the most energy-efficient dishwasher.

*Tony Gregg, City of Austin:* Why there is opposition to a water efficiency metric in the criteria? Particularly one that would omit the outlying water inefficient models from qualifying for ENERGY STAR?

*Larry Wethje, AHAM:* There is no need for a water efficiency metric. To influence the trend on water efficiency, simply increase the energy efficiency requirement.

*Ed Osann, SCWEP:* What is the harm in including a water efficiency metric, especially a metric that would omit the outlying water inefficient models from the ENERGY STAR program? It would add credibility to the ENERGY STAR label.

*Larry Wethje, AHAM:* A water efficiency metric would limit a manufacturer’s ability to innovate.

## **ENERGY STAR for Compact Dishwashers**

### **Bryce Wells, Fisher & Paykel**

*Fisher & Paykel presented several comments in support of expanding the ENERGY STAR criteria to include compact dishwashers. Fisher & Paykel has an unusual situation in that it manufactures only one dishwasher product (i.e., a dish drawer), but it is credited as manufacturing five different models. This is attributed to OEM agreements as well as the circumstances that the dish drawer is sold as both a single drawer application and double drawer application.*

*The unusual aspect is that the double drawer—which fits into a traditional 24” cavity—is considered eligible for ENERGY STAR qualification, but the single-drawer rendition—24” wide but does not hold 8 place settings—is not eligible because it is considered a compact model. The double-drawer model consumes twice as much energy as the single-drawer model, yet the single-drawer model is not eligible. This situation can be similar to refrigerators in that the larger appliances were the first products eligible for ENERGY STAR qualification, but ultimately the compact models became eligible.*

*In response to the following household trends, Fisher & Paykel began producing and marketing the dish drawer products:*

- *Modularization in households (2 kitchens, in-laws quarters, etc.)*
- *Consumers using both drawers, although one specifically for pots and pans and the other used near the food prep area*
- *Basically anything that results in the convenience that appliances produce*
- *Ergonomical Advantages (i.e., people with disabilities, back problems and older people)*
- *Capacity flexibility (there are instances when you should not encourage more capacity and more consumption)*

*Fisher and Paykel stated its preferred options for how to proceed are:*

- *Change classification of dishwashers from standard and compact system to a place setting system (i.e., maximum energy per place setting)*
- *Expand criteria to include compact models or amend the definition of compact from “less than 8 place settings” to “less than 6 place settings”*

### **Comments**

*Tony Gregg, City of Austin:* Why are place settings used to establish the standard and compact sized dishwashers? What about using cubic feet?

*Bryce Wells, Fisher & Paykel:* The physical size of a dishwasher does not necessarily translate to the capacity because of the different shapes and sizes of dishes, pots, pans, etc.

*Earl Jones, GE Consumer & Industrial:* There are two Federal standards for compact and standard dishwashers. Will Fisher & Paykel make a suggestion to change the Federal standard?

*Bryce Wells, Fisher & Paykel:* Fisher & Paykel submitted public comments about three options DOE should consider. However, Fisher & Paykel will make a formal recommendation in its final comments to DOE.

*Ed Osann, SCWEP:* What is the market share for compact dishwashers?

*Michael Beyerle, GE Consumer & Industrial:* The compact market is around one-percent.

*Ed Osann, SCWEP:* I have wondered about ENERGY STAR including compact models before and asked Richard Karney if there was a particular reason they were excluded.

*Richard Karney, DOE:* There is no reason, but the Department would like to see data first on why it makes sense to include compacts within the program.

*Bryce Wells, Fisher & Paykel:* Compact dishwashers include other products beyond the drawer products. Manufacturers also produce counter-top dishwashers.

*Michael Wasson, AM Appliance Group:* If DOE looks at compact dishwashers, it should consider a “place setting per kWh” metric.

*Earl Jones, GE Consumer & Industrial:* ENERGY STAR is bound by product categories established by DOE and the Federal standard. ENERGY STAR cannot re-define the Federal standard.

*Bryce Wells, Fisher & Paykel:* The official dishwasher definition for standard and compact capacity was recently changed. Fisher & Paykel’s product is unique and falls within a gray area between the standard and compact definitions.

*Earl Jones, GE Consumer & Industrial:* One possibility is to petition DOE for a separate product category for dish drawers. The product does not fall within the standard capacity or compact capacity dishwasher. It is a drawer. Setting a criterion for compact dishwashers is more complex than assumed.

*Bryce Wells, Fisher & Paykel:* The Energy Factor (EF) rating of the Fisher & Paykel double drawer is 0.72 and the single drawer model has an EF of 1.50.

*Michael Beyerle, GE Consumer & Industrial:* The product’s energy efficiency is not as strong if you factor in capacity. The proper metric for the drawer product is energy consumption per dish.

*Michael Wasson, AM Appliances Group:* Is CEE is considering including drawer products in their program?

*Rebecca Foster, CEE:* CEE is not considering these products at this time because of the small market share, but will relay this discussion to CEE members.

### **Proposed ENERGY STAR Criteria for Dishwashers Wayne Klug, Whirlpool Corporation**

*Whirlpool agreed that the ENERGY STAR dishwasher criteria should be revised and offered the following suggestions to DOE:*

- *Standby power should be included in the ENERGY STAR criteria, but not in the Energy Factor measurement.*

- *ENERGY STAR* criteria should be based on a kWh/year criterion that includes both EF and standby power.
- No water efficiency metric should be included; water use in dishwashers is strongly correlated with energy use.
- There is a bigger benefit to be gained from a campaign to change pre-rinse habits. Nearly all-current models in the market offer the rinse-and-hold feature, which can use 6.5-7 quarts of water, versus pre-rinsing that can use roughly 16 gallons.
- Manufacturers need sufficient time to react to any new dishwasher criteria.

## Comments

*Ed Osann, SCWEP:* Do all Whirlpool models have a pre-rinse option?

*Michael Wasson, AM Appliance Group:* 99.9% of all available dishwashers have a “rinse and hold” feature.

*Wayne Klug, Whirlpool Corporation:* Most Whirlpool dishwashers have a pre-rinse option, but Whirlpool does not have data on how frequently consumers use the rinse features. Since EF is not well understood by consumers, ENERGY STAR may want to consider using a metric that couples the kWh consumed for dishwasher operations with the kWh used for standby power to indicate total energy consumption simply in kWh.

*Tony Gregg, City of Austin:* Why are manufacturers opposed to the inclusion of a water factor? Are there certain outlier models (i.e., certain models that use excessive amounts of water) that the manufacturers are protecting? Water-conscious consumers would like to be able to see the water consumption figures. Also, the water consumption unit “gallons” actually resonates more strongly with consumers than “kWh”. One of the benefits of a water factor in the ENERGY STAR criteria for dishwashers is that water utilities have a tangible reason to support the program with marketing funds.

*David Calabrese, AHAM:* It is not as simple as attaching a water efficiency level to the ENERGY STAR criteria.

*Earl Jones, GE Consumer & Industrial:* We are here to discuss the ENERGY STAR program and the program’s focus is on energy. The ENERGY STAR criteria for clothes washers example is unique because of the correlation between energy use and water use is not as strong as it is here. As a result, manufacturers were agreeable to include a Water Factor in the criteria for clothes washers. This is not the case with dishwashers.

*Michael Wasson, AM Appliance Group:* Americans are a unique culture. Typically, Americans believe that “bigger is better.” If consumers see a maximum of “6.1 gallons used”, they may assume the dishes are not getting clean.

*Debra Bengston, Maytag Corporation:* The average consumer has no basis for water use in a dishwasher, so seeing a maximum gallons/cycle estimate is probably not going to alter behavior.

*Kevin Brown, Maytag Corporation:* The “bigger is better” statement indicates that the average consumer is going to want better performance.

*Richard Karney, DOE:* Consumers will likely not see the water consumption numbers for their dishwasher. What the consumer will see is ENERGY STAR label, the symbol of energy efficiency.

### **ENERGY STAR Qualified: Ensuring ENERGY STAR Relevance in the Marketplace** **David Steiner, Maytag Corporation**

*Maytag decided to take a different approach in its recommendation to DOE. David Steiner's presentation indicates that DOE has a problem with the high level of ENERGY STAR qualified dishwashers available in the market. Maytag proposed several criteria ideas that can be implemented over a multi-year period.*

*Maytag's key recommendations are as follows:*

- *Raise the Energy Factor (EF) to 0.64 for products with minimum capacity of 12 place settings and an EF of 0.66 for products that hold less than 12 place settings.*
- *Standby power requirement of less than 1 Watt.*
- *Implement a maximum water consumption level of 1,400 gallons per year (any cycle with any option).*
- *Mandate a minimum AHAM DW-1 score of 85.*

*Mr. Steiner commented on GE's earlier recommendation of a minimum EF of 0.65 and stated that Maytag can agree with that EF proposal. Stated that a minimum EF of 0.62 would be too low considering the current availability of models at that level.*

*With regard to a water efficiency metric, Mr. Steiner stated that there is a correlation between energy and water consumption, but the correlation should be tighter. Most water consumption numbers only look at the normal cycle.*

### **Comments**

*Matthew Kueny, Miele:* Is there a correlation between the Oregon dishwasher list of water efficient dishwashers and the DW-1 scores? This might be a critical correlation for enacting a water performance standard.

*Michael Beyerle, GE Consumer & Industrial:* Who would be responsible for administering the DW-1 scores?

*Debra Bengston, Maytag Corporation:* DOE would need a third party testing entity to manage the DW-1 testing and information.

*Kevin Brown, Maytag Corporation:* There are pros and cons to this approach. Performance is an important feature and the program needs to ensure it does not impact performance with a criteria level.

*Earl Jones, GE Consumer & Industrial:* Questioned the idea of third party testing and asked Maytag to elaborate. Would all dishwashers seeking ENERGY STAR qualification need to go through this testing process?

*Kevin Brown, Maytag Corporation:* Third party testing would ensure better performance for ENERGY STAR qualified dishwashers and overall market saturation would likely go down as a result.

*Earl Jones, GE Consumer & Industrial:* Who would pay for this additional testing?

*David Steiner, Maytag Corporation:* The manufacturer would pay.

*Debra Bengston, Maytag Corporation:* Another option is to have the manufacturer self-test and report the information to DOE, much like the current process for manufacturers to report Energy Factor information to DOE.

*Earl Jones, GE Consumer & Industrial:* How long would it would take for models to go through this new testing regime? It might create an incredible weight on the qualification process.

*David Steiner, Maytag Corporation:* Maytag is proposing a multi-pronged approach to the criteria revision. DOE could implement increase the EF requirement to 0.65 in the short term and then address some of the other issues in 2010. Maytag is very cognizant of the weight manufacturers would incur if all of these recommendations were implemented in the short run.

*Rachel Schmeltz, U.S. Environmental Protection Agency:* Asked David Steiner to clarify which initiatives from his presentation should be implemented in the short run and which in the long run.

*David Steiner, Maytag Corporation:* Energy Factor is the only component that should be implemented in the short run. The rest of the suggestions are for the long-term discussion.

*Jenny Moe, Procter & Gamble:* Performance is a large concern. We do not want consumers to demonstrate compensatory behavior that results in more energy and water consumption. Some of Procter & Gamble's products can contribute to better overall performance.

*Earl Jones, GE Consumer & Industrial:* Should a performance measure be included in the ENERGY STAR criteria? The ENERGY STAR program is critical for advancing energy efficiency, but at the end of the day, the manufacturer has to stand behind its product. ENERGY STAR cannot take responsibility of all issues.

*Kevin Brown, Maytag Corporation:* Maytag's proposal is for the longer term.

*Earl Jones, GE Consumer & Industrial:* Manufacturers do not need ENERGY STAR to protect their brands.

*Mike Edwards, BSH Homes Appliances Corporation (BSH):* The AHAM DW-1 performance measure may not be the best thing for consumers and it may not benefit energy efficiency.

*Debra Bengston, Maytag Corporation:* ENERGY STAR must stand for something – Maytag completed an internal survey and it indicates that consumers expect ENERGY STAR to save energy but also to give them the best performance. With the ENERGY STAR brand, consumer expectations are vast.

*Mike Edwards, BSH:* Does not think the AHAM DW-1 is the best measurement of performance.

*Earl Jones, GE Consumer & Industrial:* The performance discussion is not relevant to everyone. Everyone agrees that the ENERGY STAR dishwasher program is degraded with such high market saturation and GE recommends that DOE propose an aggressive Energy Factor (EF). GE is recommending an EF of 0.65 and other manufacturers have recommended EF of 0.64. Products will not sell if the performance is weak.

*Debra Bengston, Maytag Corporation:* All manufacturers are capable of meeting the proposed EF level. Maytag would like ENERGY STAR to be seen in a different light and meet all of the consumers needs. Consumers that demand ENERGY STAR qualified products want energy efficiency, but they also want high quality wash performance and large capacity and product options.

*Earl Jones, GE Consumer & Industrial:* If manufacturers want a performance measure, then they should debate it.

*Jenny Moe, Procter & Gamble:* There are two issues to be discussed: the first issue being whether performance should be included and the second issue is the AHAM DW-1 test procedure. For now, stakeholders should focus on the first issue.

*Bryce Wells, Fisher & Paykel:* ENERGY STAR is the “de facto best buy” label.

*Earl Jones, GE Consumer & Industrial:* There are still questions and concerns on how long it would take and how much it would cost manufacturers to set up a third-party testing authority and procedure.

*Heather West, Whirlpool Corporation:* Including a performance qualification requires much more debate. Need to keep in mind that consumers consider several other product features when purchasing a product, such as the retailer and price.

## **2. Stakeholder Group Discussions**

*Below is a meeting discussion summary. The discussion was structured based on the suggestions from the meeting attendees. Many of the discussion topics overlapped.*

*Richard Karney, DOE:* Wanted to share a few general thoughts about other ENERGY STAR product criteria. ENERGY STAR typically covers only the energy efficiency aspects of a product, but there are certain precedents already in place for including a performance-based metric in ENERGY STAR criteria for other products. ENERGY STAR criteria for compact fluorescent light bulbs (CFLs) take into account performance, efficiency and longevity. ENERGY STAR qualified windows take into account performance and the proposed ENERGY STAR criteria for clothes washers includes a water efficiency metric.

*Earl Jones, GE Consumer & Industrial:* The ENERGY STAR CFL and Windows criteria include performance but it is directly tied to energy efficiency. With ENERGY STAR qualified dishwashers, it would require more data.

*Ed Osann, SCWEP:* The ENERGY STAR CFL criterion also includes color requirements. The CFL criterion takes into account several attributes that consumers find valuable.

*Jenny Moe, Procter & Gamble:* There have been two separate discussions that demonstrate the need to launch a “no pre-rinsing” campaign and to consider a water efficiency metric. DOE should not do both since it will consume a large amount of stakeholder resources and send mixed messages to the consumer.

*Richard Karney, DOE:* Acknowledged those two issues as separate and potential solutions.

*Jenny Moe, Procter & Gamble:* If DOE institutes a water factor for dishwashers and sets the level too low, it could potentially affect performance.

*Matthew Kueny, Miele:* If these two potential solutions are enacted together (i.e., a “no pre-rinse” campaign and a stringent water efficiency metric), it could be catastrophic for consumers.

*Jenny Moe, Procter & Gamble:* There is much more potential water savings through encouraging consumers to stop pre-rinsing dishes.

*Earl Jones, GE Consumer & Industrial:* Everyone is in agreement that consumers should cut down on pre-rinsing and that DOE should focus on that aspect alone to address water efficiency. There is still concern over implementing a water factor – a stakeholder meeting should not produce restrictions on manufacturers, limitations on consumers and limitations on the machines.

*David Steiner, Maytag Corporation:* Maytag has been able to easily offer a complete line of ENERGY STAR qualified dishwashers. Adding these additional attributes to the ENERGY STAR criteria will make ENERGY STAR the premium on the sales floor. DOE is only defining the energy efficiency of the dishwasher “normal cycle,” and that more cycles need be considered for analysis. The Energy Factor level should be raised in the near term to protect the ENERGY STAR brand and then DOE should consider these other issues to enhance the ENERGY STAR program.

*Kevin Brown, Maytag Corporation:* With an future EF of 0.65 will result in lower ENERGY STAR qualified dishwasher saturation, but it can also create products with an EF of 0.65 that are lacking basic consumer options.

*Michael Wasson, AM Appliances:* It is inconceivable to use 10 gallons/cycle with an EF of 0.65. We cannot determine what a consumer will buy; if a consumer buys a dishwasher with great performance, he or she will tell another person. But, if a consumer buys a dishwasher with lousy performance, they will not be happy and will most likely tell everyone. Need to enhance products to meet customers’ needs. Perhaps the program needs to identify an EF level for 2007 and then look at 2010 to include performance measurements.

*Matthew Kueny, Miele:* ENERGY STAR should not be “penalized” and forced to develop criteria that includes these additional issues (i.e., performance, water, standby power, etc.). The extra burdens would be unfair to ENERGY STAR.

*Kevin Brown, Maytag Corporation:* The additional criteria considerations are not intended to be a burden to manufacturers or ENERGY STAR.



*Earl Jones, GE Consumer & Industrial:* Adding too many considerations to the ENERGY STAR criteria for dishwashers may overburden the best dishwashers. Non-qualified products can be energy hogs and the purpose of ENERGY STAR is not to “reduce the saturation,” but to encourage the production of highly efficient dishwashers. The ENERGY STAR dishwasher program should be celebrated that it reached this market saturation, but if the goal of the program is to increase efficiency and technology, then it is time to set higher efficiency levels.

*Kevin Brown, Maytag Corporation:* Agrees with Earl Jones’ “purpose” statement.

*Earl Jones, GE Consumer & Industrial:* It costs merely \$25 a year to operate a dishwasher, which is much lower than the operating cost of a typical dishwasher 10 years ago. Inclusion of standby power is not cost effective - annual standby power operating costs of typical dishwasher is about as much as a coke at McDonald’s. Limiting standby power might inhibit manufacturers’ ability to find and use other energy-reducing technologies.

*Ed Osann, SCWEP:* Are GE’s comments consistent with the Ecomagination initiative?

*Earl Jones, GE Consumer & Industrial:* A dishwasher product with an EF of 0.65 falls under the Ecomagination initiative “in spades,” and that it is very “Ecomaginative.”

*Ed Osann, SCWEP:* The goal is not to kick out a few machines. The goal is to provide security, reliability and predictability to the ENERGY STAR dishwasher program. Water utilities will be attracted to the ENERGY STAR program if there is a water metric, as it will provide a method to deal with demand issues.

*Earl Jones, GE Consumer & Industrial:* GE’s machines will beat the water efficiency metrics that are on the table, but that is not the point. The correlation between energy efficiency and water efficiency is absolute and therefore, there is no need for a water efficiency metric.

*Ed Osann, SCWEP:* Then why are the manufacturers not willing to supply specific data?

*Larry Wethje, AHAM:* The manufacturers have already met the objective of the water efficiency advocates and with a potential EF of 0.62 or 0.65, manufacturers will only be saving more water. Instituting a water efficiency requirement will hurt innovation. For example, in Oregon, there are machines that miss qualifying for the rebate by one liter of water. These machines are penalized because of prescriptive criteria.

*David Steiner, Maytag Corporation:* The Oregon data looks at the normal cycle. Manufacturers can design a product to run on the normal cycle and meet 0.62, but the same product can use 10 gallons or more on different cycles.

*Earl Jones, GE Consumer & Industrial:* I think we need to remember that dishwashers now cost \$25 per year to operate and we should celebrate the success. We need to set an aggressive level and then move on to bigger issues.

*Kevin Brown, Maytag Corporation:* Agreed – we do not want to set a criteria level and need to revisit the criteria in a year or two.

*Renata Mortazavi, Natural Resources Canada:* What is the minimum limit of water use in a dishwasher? (5 gallons, 2 gallons, etc.)

*Michael Beyerle, GE Consumer & Industrial:* There is a practical limit in effect.

*David Steiner, Maytag:* Maybe there is or could be other technologies that revolutionize the dishwasher market? Perhaps in the future there will be models that use no water.

*Richard Karney, DOE:* The program has been immensely successful at an EF of 0.58. Now it is time to look forward. This is an opportunity to redefine ENERGY STAR for dishwashers to better differentiate models in the marketplace.

*Heather West, Whirlpool Corporation:* One option to address the saturation issue is to introduce a two-phase system. Stakeholders can agree on an Energy Factor for 2007 and another level to be effective in 2010 or 2011.

*Richard Karney, DOE:* I am not against a phased approach. From the discussion, it appears to be support throughout the group that a step process might be a worthwhile approach.

*Kevin Brown, Maytag Corporation:* We can consider 0.64 or 0.65 now, but we need to consider the long-term suggestions too.

*Jenny Moe, Procter & Gamble:* If you push the criteria level too high, there will be no water left to do what you need the dishwasher to do – wash the dishes.

*Matthew Kueny, Miele:* Miele markets several water-efficient products in Europe. If DOE is going to look at water efficiency, it must incorporate performance and define the water use limits.

*Michael Wasson, AM Appliance Group:* How many water utility rebates would manufacturers see if a water efficiency metric is included in the ENERGY STAR dishwasher criteria?

*Ed Osann, SCWEP:* If there is an assured water factor, then more water utilities could contribute resources to result in more ENERGY STAR rebates and brand promotions.

*Michael Wasson, AM Appliance Group:* Does AHAM have data that will identify the water usage per product?

*Tony Gregg, City of Austin:* The City of Austin offers two ENERGY STAR qualified clothes washer rebate lists - one for ENERGY STAR qualified clothes washers and a second list of ENERGY STAR qualified clothes washers that meet our requirements. We are not in support of integrating a “restrictive” water factor to the criteria. Rather, the inclusion of a water factor in itself would be sufficient. One purpose is to give water utilities the assurance that there are water savings associated with ENERGY STAR qualified dishwashers.

*Earl Jones, GE Consumer & Industrial:* There is an issue of proportionality. There are only a handful of isolated water utilities that are interested in instituting a water factor. The need is not national. The

water utilities and efficiency advocates are requesting the appliance industry to concentrate on isolated utilities in remote parts of the country. It does not make sense for the 90% to change for the 10%.

*Tony Gregg, City of Austin:* Is New York City was considered a remote part of the country? My point is that we do not want to offer incentives for ENERGY STAR qualified dishwasher products that consume 10 gallons/cycle.

*Earl Jones, GE Consumer & Industrial:* Are there dishwashers that use 10 gallons/cycle?

*Ed Osann, SCWEP:* My organization would like to see water and energy consumption data for each available dishwasher currently in the marketplace.

*Kevin Brown, Maytag Corporation:* indicated that there may be statistical data that AHAM can distribute that will satisfy the water advocates without necessarily listing model numbers. Mr. Brown suggested a standard deviation.

*Michael Beyerle, GE Consumer & Industrial:* commented that he assumes Mr. Osann makes his annual plans based on averages and not standard deviations.

*Ed Osann, SCWEP:* stated that it is easier to present clear plans to a board when there is a concrete water efficiency metric integrated in the criteria.

*Earl Jones, GE Consumer & Industrial:* stated that the water efficiency advocates should make their decisions based on the averages. The “outliers” (i.e., small percentage of dishwashers that consume more water than the shipment weighted average) are not the basis for public policy decisions. This discussion is a distraction from the facts.

DOE may want to focus on changing the Federal standard to 0.58. This EF will satisfy the water efficiency community by ensuring a more solid baseline for energy efficiency and water efficiency in the market. If an EF of 0.58 does not mean anything anymore, then the likely scenario is that manufacturers will not make products that achieve an EF of 0.58. Instead, manufacturers will go lower.

*Richard Karney, DOE:* The Federal standard inquiries should go to Michael McCabe. The Federal standard will not change or improve under the current ENERGY STAR criteria change timeframe. It will take much longer.

*Bill McNary, D&R International:* Obtaining water data from manufacturers for all of the currently available models would assist the Department’s decision-making process. Is it possible to collect similar data to what Oregon collects for its rebate program?

*Matthew Kueny, Miele:* If we are going to look at the correlation between energy efficiency and water efficiency, we need to factor in performance.

*Mike Edwards, BSH Home Appliances Corporation:* You do not need to see the specific model numbers to assess water consumption of the outliers. A weighted-average would meet stakeholder needs.

*Bill McNary, D&R International:* AHAM shipment weighted average for water consumption (i.e., roughly 6 gallons per cycle) is likely a product with a strong Energy Factor. The water efficiency advocates are interested in seeing the water consumption of a product that barely meets the minimum Federal standard.

*Earl Jones, GE Consumer & Industrial:* What is the point for revealing this water efficiency data?

*Bill McNary, D&R International:* The two main reasons to release the water efficiency data for the outliers: 1) Appease the water utilities and assure them that there are water savings associated with ENERGY STAR qualified dishwashers and 2) Ensure consumers that they will save both water and energy when they choose an ENERGY STAR qualified dishwasher.

*Richard Karney, DOE:* ENERGY STAR clothes washer partners report both the Modified Energy Factor (MEF) and the water factor (WF) for their qualified clothes washers. Is this information too sensitive for dishwashers?

*Renata Mortazavi, Natural Resources Canada:* The Canadian program has water efficiency data.

*Larry Wethje, AHAM:* Submission of the clothes washers water factor is voluntary.

*Earl Jones, GE Consumer & Industrial:* If manufacturers report all of the water data, it will cause the blacklisting of certain models.

*Ed Osann, SCWEP:* The information should not be shared with the public - it should be used to make a policy decision. Data needs to be acquired to help facilitate a decision since the information will demonstrate if there is a correlation between energy and water efficiency.

*Richard Karney, DOE:* Does CEE have dishwasher water usage data? Rebecca, what are CEE's members looking for in terms of data?

*Rebecca Foster, CEE:* CEE members would want to be able to help define what kind of data is needed to help analyze the correlation. They do not need to participate in the actual analysis. Members just want to know what information DOE needs to be able to assess if there is an energy and water consumption correlation.

*Richard Karney, DOE:* Can AHAM provide the data to this question?

*Larry Wethje, AHAM:* AHAM can provide data if the organization's members agree. The members would need to caucus to discuss this issue.

*Mike Edwards, BSH:* What type of water data is DOE is interested in receiving? Manufacturers can give data based on the DOE test standard, but we can also report typical consumer water use data.

*Debra Bengston, Maytag Corporation:* Water data should be taken from the DOE test procedure, but we should also consider reviewing the water data using normal cycle with sensor, normal heavy cycle, medium cycle, and light cycles. From this data, we should be able to derive the EF and annual water consumption.

*Mike Edwards, BSH:* Would that data correlate with what the water efficiency advocates seek? BSH can report water data, but it may not correlate to real-world scenarios.

*Al Dietemann, City of Seattle:* Water utilities will need quantifiable water savings before they agree to promote ENERGY STAR qualified dishwashers.

*Earl Jones, GE Consumer & Industrial:* What level of data is good enough? Utilities are free to offer rebates on whatever they want and the interests of a utility in Seattle may differ from the interests of a utility in Austin. Manufacturers need to make products that will satisfy the nation.

*Al Dietemann, City of Seattle:* This meeting is a national forum to discuss ENERGY STAR qualified dishwashers.

*Earl Jones, GE Consumer & Industrial:* The dishwasher shipment-weighted water consumption average from AHAM is a national number.

*Kevin Brown, Maytag Corporation:* One possible solution is to include an additional statistic in the correlation analysis, such as a standard deviation. The correlation coefficient would actually be the best statistic to prove the strength of the correlation. Maytag is concerned more about the water consumption in the normal cycle versus the water consumption when running other cycles.

*Debra Bengston, Maytag Corporation:* Some dishwasher use and care manuals will list the water consumption.

*Kevin Brown, Maytag Corporation:* AHAM will meet to see if they have the aggregate and standard deviation numbers. AHAM will review how the correlation coefficient and standard deviation stack on top of each other.

*Tony Gregg, City of Austin:* The use and care manual for my personal dishwasher states the product uses 6.9 gallons/cycle. Perhaps inclusion of water information in each dishwasher manual should be standardized.

*Scott Thigpen, D&R International:* DOE is planning to increase the minimum EF level and also preparing to launch a “no pre-rinsing” campaign. Is there are any performance issues that will arise if DOE moves forward with both actions? Is this approach “too much too soon”? DOE does not want ENERGY STAR to offer sub-par products.

*Jenny Moe, Procter & Gamble:* Adding a stringent water restriction to the criteria may affect performance. Pre-rinsing is unnecessary for the highly efficient models available today (with EFs of 0.62 or higher) and there are no performance issues. Do we know how much water is used for a dishwasher with an EF of 0.65? Are there potential issues?

*Mike Edwards, BSH:* That it is a complex issue. Some manufacturers use their internal tests for cleanliness performance.

*Richard Karney, DOE:* DOE plans to move forward with the “no pre-rinse” campaign and will raise the minimum Energy Factor for dishwashers. Will a minimum EF of 0.65 jeopardize the “no pre-rinse” campaign?

*Scott Thigpen, D&R International:* Does the group envision performance being compromised at a minimum EF of 0.65? Is there is 100% confidence in the performance of a 0.65 EF dishwasher?

*Earl Jones, GE Consumer & Industrial:* ENERGY STAR should not go beyond its learning curve. With the clothes washer criteria development, ENERGY STAR put a ban on a level, as if a manufacturer would put its name on it.

*Kevin Brown, Maytag Corporation:* Price point is also an issue.

### **3. Closing Remarks**

*Richard Karney, DOE:* All of the presentations and materials from this stakeholder meeting will be on the ENERGY STAR Web site in one to two weeks. The materials can be found within the Partner Resources area, Revision to Existing Specifications section.

I would like to thank all of the meeting participants and the eight presenters. DOE will review all of the submitted comments over the next few weeks. Partners still have until August 15, 2005 to submit comments on the dishwasher analysis.

## **APPENDIX:**

### **GE Consumer and Industrial Recommendations:**

- 0.65 Energy Factor, effective in two years

### **Consortium for Energy Efficiency Recommendations:**

- 0.62 Energy Factor or higher
- Include standby power within the criteria
- Collect water use information
- Initiate a consumer educational campaign on pre-rinsing dishes

### **Ed Osann, Steering Committee for Water Efficient Products Recommendations:**

- Post water consumption data for all machines with an Energy Factor greater than 0.62
- Develop a regression analysis on energy and water use data
- 0.62 or higher Energy Factor + 6.25 gallon minimum Water Factor to go into effect in 2008
- Consult with EPA's Water Office
- Identify better options for pre-rinse education to consumers
- Incorporate water information requirements into the ENERGY STAR Program Requirements
- Conduct pre-rinse water use studies
- Look at waste water use

### **Seattle Public Utilities Recommendations:**

- 0.62 Energy Factor + 6.1 gallon minimum Water Factor
- 2005 Rebates – 37% of products rebated in Puget Sound territory had a EF of 0.62 or higher
- Add compact and single drawer products into the ENERGY STAR program
- Consider dish cleaning performance requirements
- Require reporting of maximum energy and water use per cycle per product
- Compare pre-rinse vs. hand-washing

### **Association of Home Appliance Manufacturers (AHAM) Recommendations:**

- Consider maximum allowable energy use in kWh – this would include energy use and standby
- A water use requirement is not needed – more energy-efficient dishwashers use less water
- Set an effective date to provide at least 24 months lead time for manufacturers

### **Fisher & Paykel Recommendations:**

- Fisher & Paykel manufacturers a 'dish drawer' which when two models are stacked, it qualifies for ENERGY STAR
- Single drawer design should be added into the ENERGY STAR criteria for dishwashers since:
  - Trends show that homes are installing multiple appliances

- Place settings
- Used more frequently
- Top drawer used more than the bottom
- Usage Patterns – standard use (pots, pans, etc.) + single drawer (special items, etc.)
- Ergonomic benefits
- Will fit better in apartments, small homes, 2<sup>nd</sup> area of home, etc.
- Design compact dishwasher criteria for ENERGY STAR
  - Per place setting – set it as 6 place settings instead of the current standard size of 8 settings
  - Set criteria on energy use by total place settings
    - 12 settings use 323 kWh
    - 6 settings use 173 kWh
- Ask for separate Federal standard for “dish drawers”

### **Whirlpool Recommendations:**

- If standby power is added to the criteria, it should be incorporated into the total energy consumption since consumers can relate to kWh and not EF
- Water requirement should not be incorporated into the criteria
- Effective Date – need to provide ample time for manufacturers to design new products
- Research the pre-rinse and hold option

### **Maytag Recommendations:**

- Short Term: 0.64 or 0.65 Energy Factor for minimum capacity of 12 place settings
- Short Term: 0.66 Energy Factor for less than 12 place settings
- Long Term: If standby power is incorporated into the criteria, then it should be a requirement of less than 1W.
- Long Term: Set a maximum water use of 1,400 total gallons (all cycles with any options)
- Long Term: Require products to be tested against the AHAM DW-1 and must score a minimum of 85 or higher
  - This could be facilitated through a third-party testing entity
  - Manufacturer would be responsible to pay for the testing