

**American Rivers
Association of Metropolitan Water Agencies
Austin Water Utility
California Urban Water Conservation Council
East Bay Municipal Utility District
Seattle Public Utilities**

May 11, 2006

Ms. Brenda Edwards-Jones
Buildings Technology Program
AHAM Products Standards
U.S. Department of Energy
1000 Independence Ave. SW
Washington, DC 20585

Re: Docket number EE-2006-STD-0127 – Energy Conservation Standards

Dear Ms. Edwards-Jones:

Please accept these comments for the record of the Department of Energy's Framework Document and April 27, 2005, public meeting regarding the issues to be considered during rulemaking to establish new efficiency standards for residential electric and gas ranges and microwave ovens, dehumidifiers, dishwashers, and commercial clothes washers. These comments will be directed toward dishwashers and commercial clothes washers.

Commercial Clothes Washers

1. Product classes. We support the Department's initial determination to maintain one product class, and not divide the class between front-loading and top-loading machines. The 2005 statute establishing the initial national standards for this product makes no such distinction, nor do consumers who use commercial clothes washers.
2. Technology Options. Several key technology options are missing from DOE's currently published list. These include:
 - spray rinse features;
 - nutating agitator, peripherally mounted rotating discs, or other components that replace a conventional agitator;
 - advanced power supplies that can minimize standby consumption of electricity.

- Steam cleaning, such as the energy and water saving Tromm Washer by LG (LGWM2688)

3. Efficiency levels. Efficiency levels for analysis should include an efficiency level with an MEF of 2.0 and an efficiency level with a water factor of 6.0 (the latter has been adopted by the California Energy Commission and contained in the CEC’s residential clothes washer waiver

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petition to DOE). Also, although one stakeholder may be urging DOE not to increase the water factor at all, we recommend that each efficiency level consist of a stepwise improvement in both energy and water efficiency. Regarding the max tech level, we believe the Department’s approach is reasonable, but note that single machine values of MEF 2.48 and WF 3.5 would still represent a substantial upper bound for purposes of DOE’s engineering analysis.

4. Engineering Analysis data request. We support the request for data that DOE has made to manufacturers, and we urge the Department to work with the companies to ensure the timely submission of this data. We also recommend that the data be made public when received, rather than being held for 15 months until the release of the advance notice of proposed rulemaking (ANOPR).

5. Energy and Water Use. The Department should ensure that assessments of product energy consumption include the energy embedded in water supply and wastewater treatment service. Huge amounts of energy are currently used to pump and treat water and wastewater. For example, the CEC’s residential clothes washer waiver petition contains estimates of 4.1 kWh to 8.4 kWh per 1,000 gallons of conventional supply, and 11 kWh per 1000 gallons for supplies at the margin. (CEC, pp. 14-15) A more detailed review of energy consumption in water supply

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and wastewater treatment can be found in Arpke and Hutzler.

6. Life-Cycle Cost Subgroup Analysis. When evaluating impacts on subgroups, the Department should take note of the commercial contractual relationship between route operators and property owners. The Department’s analysis should note that contracts are subject to revision and renewal, and that the division of coin box revenue may be negotiated to allow for the real savings achieved by cost-effective efficiency improvements in commercial clothes washers to be equitably shared between the purchasers/owners of the machines (route operators) and the parties responsible for paying electric, gas, water, and sewer bills (property owners).

Dishwashers

1. Product classes. With the decline in residential dishwasher use and smaller household sizes, a review of dishwasher product classes is appropriate. Currently, compact dishwashers are defined

as having a capacity of less than eight place settings, and all larger machines are categorized as “standard.” One or more additional product classes could be designed to accommodate machines with different capacities, and would provide more flexibility for manufacturers to make smaller or larger machines. This has the potential to save energy, since it could encourage consumers to wash full loads, rather than run partial loads or multiple loads in either an “oversized” or undersized machine.

2. Technology Options. DOE should consider the two-drawer design or similar technology that would improve the efficiency of performance under partial loads. DOE should also consider any design options that would tend to reduce consumer pre-rinse activity, which manufacturers believe is an unnecessary use of energy and water.

3. Efficiency levels. Two key issues arise here. First, the base model machine should not be established at the current DOE minimum standard level (EF 0.46), when over 90% of models currently offered, and perhaps 80% of sales, already achieve the current Energy Star level (EF 0.58). The engineering and economic analyses would be better supported by establishing a base model that more accurately reflects current production and sales. Use of the current DOE minimum standard will distort the analyses by making it appear that higher standard levels are more costly and burdensome to achieve compared to the baseline than they really are.

Secondly, the Department should assign a water factor to each of the proposed dishwasher efficiency levels, and substantiate the relationship between energy and water consumption at the current baseline (adjusted as recommended above) and at each efficiency level in the analysis. There is evidence that water consumption is not so tightly correlated with energy consumption as to obviate the need for or value of a separately stated water factor. For two extensive databases of residential dishwashers and their energy and water consumption, see sites maintained by

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Natural Resources Canada and the Oregon Department of Energy.

For further discussion of correlation, including a graphic depiction of data from the Oregon

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database, see the letter from Maytag to DOE Energy Star.

4. Engineering Analysis data request. We support the data requested of dishwasher manufacturers, and urge the Department to work with the companies to ensure the timely submission of this data. We also recommend that the data be made public when received, rather than being held for 15 months until the release of the ANOPR.

5. Energy and Water Use. As with commercial clothes washers, DOE should consider the embedded value of energy associated with the water use of dishwashers. Reduction in machine water use provides quantifiable energy savings to water and wastewater providers, as well as to

consumers. Additionally, we support the use of 215 cycles per year in the DOE analysis, as established by the revised DOE test procedure.

Thank you for your attention to these views and recommendations.

Sincerely,

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California Energy Commission, “Petition to Exempt from Preemption California’s Water Conservation Standards for Residential Clothes Washers,” September 13, 2005, available at <http://www.eere.energy.gov/buildings/appliance_standards/pdfs/petition_clothes_washers_2005-09-13.pdf>.

[2]

Arpke, A. and N. Hutzler, “Domestic Water Use in the United States: A Life-Cycle Approach,” *Journal of Industrial Ecology*, Vol. 10, No. 1-2, Winter/Spring 2006.

[3]

Natural Resources Canada database: <http://oee.nrcan.gc.ca/energystar/english/consumers/dishwashers-results.cfm?PrintView=N&Text=N&last_row=1&sr=1>.

[4]

Oregon Department of Energy database: <<http://oregon.gov/ENERGY/CONS/RES/tax/appdish.shtml>>.

[5]

Letter from Steiner, D., Maytag Corp., to Richard Karney, Energy Star program manager, Department of Energy, August 15, 2005, available at <http://www.energystar.gov/ia/partners/prod_development/revisions/downloads/dishwashers/Maytag_Comments081505.pdf>.