

Appliance Standards Awareness Project  
California Energy Commission  
Consumer Federation of America

October 17, 2019

Mr. Bryan Berringer  
U.S. Department of Energy  
Office of Energy Efficiency and Renewable Energy  
Building Technologies Office, EE-5B  
1000 Independence Avenue SW  
Washington, DC 20585

**RE: Docket Number EERE–2017–BT–STD–0014: Request for Information for Energy Conservation Standards for Residential Clothes Washers**

Dear Mr. Berringer:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), California Energy Commission (CEC), and Consumer Federation of America (CFA) on the request for information (RFI) for energy conservation standards for residential clothes washers. 84 Fed. Reg. 37794 (August 2, 2019). We appreciate the opportunity to provide input to the Department.

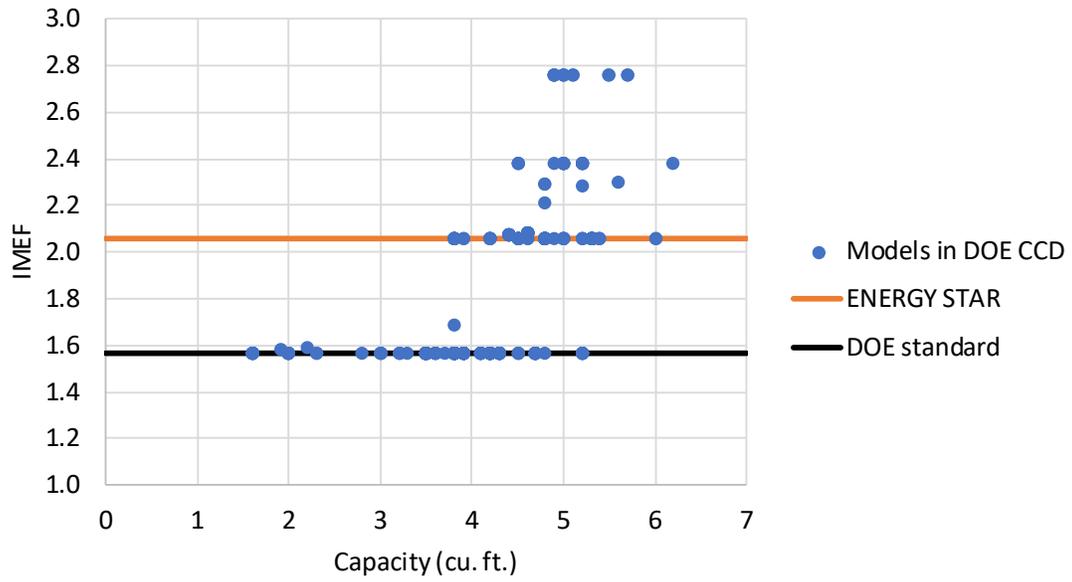
**DOE should conduct a full analysis to evaluate potential amended standards for residential clothes washers.** The RFI suggests that DOE is specifically seeking information that would allow the Department to propose a ‘no new standard’ determination.<sup>1</sup> However, available data suggest that there is clear opportunity for very large potential energy and water savings and associated bill savings for consumers from amended standards for clothes washers. As shown in Figures 1-4 below, there are a wide range of both top-loading and front-loading models that significantly exceed not just the DOE minimum efficiency standards, but also the current ENERGY STAR levels.<sup>2</sup>

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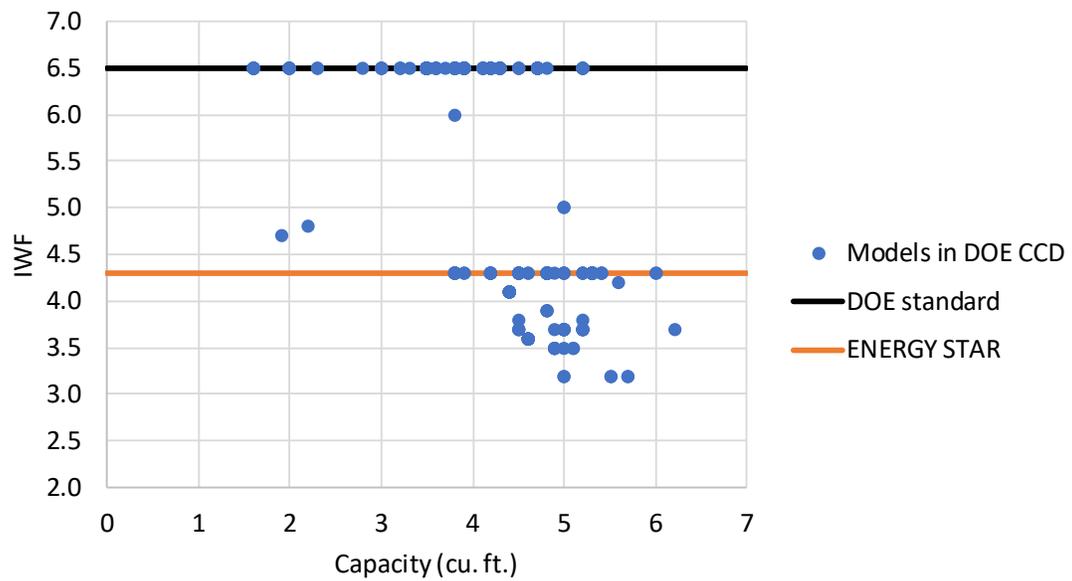
<sup>1</sup> 84 Fed. Reg. 37796.

<sup>2</sup> Models in the DOE Compliance Certification Database (CCD) as of 8/14/19.

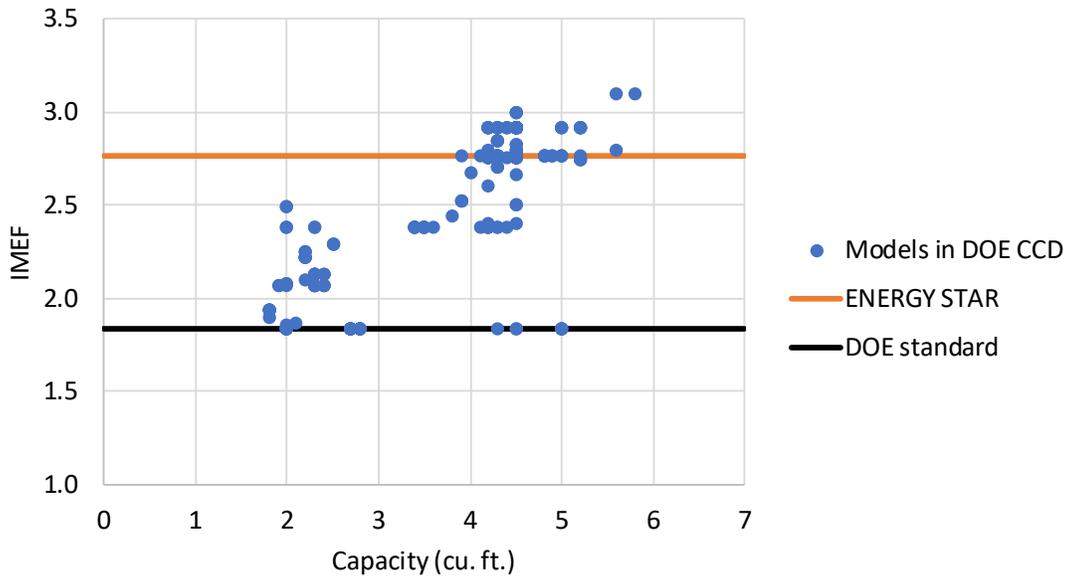
**Figure 1. IMEF ratings of top-loading clothes washers certified to DOE**



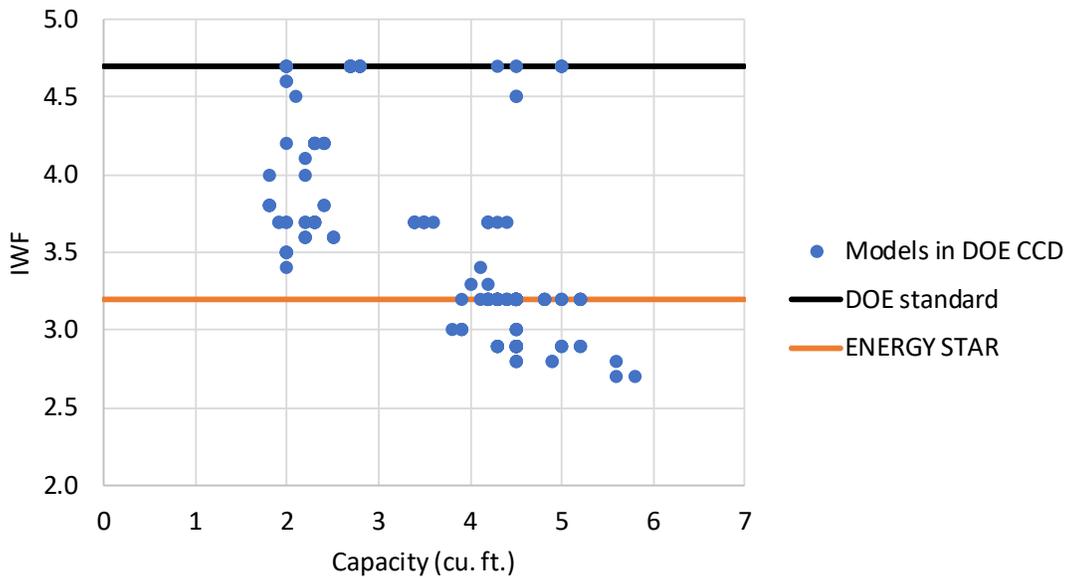
**Figure 2. IWF ratings of top-loading clothes washers certified to DOE**



**Figure 3. IMEF ratings of front-loading clothes washers certified to DOE**



**Figure 4. IWF ratings of front-loading clothes washers certified to DOE**



Furthermore, as of 2018, almost half of all residential clothes washer shipments met the ENERGY STAR levels.<sup>3</sup> DOE should conduct a full analysis to evaluate potential amended standards for residential clothes washers.

<sup>3</sup>

[https://www.energystar.gov/ia/partners/downloads/unit\\_shipment\\_data/2018/2018%20Unit%20Shipment%20Data%20Summary%20Report%20.pdf?a6f8-5338](https://www.energystar.gov/ia/partners/downloads/unit_shipment_data/2018/2018%20Unit%20Shipment%20Data%20Summary%20Report%20.pdf?a6f8-5338).

**DOE should not consider a separate product class based on cycle time.** In the RFI, DOE requests comment on whether shorter cycles for clothes washers would affect consumer utility and whether the creation of a separate product class would enable the availability of clothes washers with shorter cycles.<sup>4</sup> A separate product class would be unwarranted because consumers have the option today of purchasing a clothes washer with a short cycle time. For example, there are washers rated by *Consumer Reports* with cycle times on the normal cycle as short as 35 minutes.<sup>5</sup> We also note that washers with short cycle times often sacrifice other attributes that are important to consumers. For example, according to *Consumer Reports*, while agitator top-loaders generally have the shortest cycle times, they typically score only “Good” on cleaning, are “tough on fabrics,” have longer dryer times, and are noisy.<sup>6</sup> In contrast, high-efficiency (HE) top-loaders typically score “Very Good” on cleaning and are “relatively quiet.” While front-loading models generally have the longest cycle times, they typically score “Excellent” or “Very Good” on cleaning, are “gentler on fabrics,” and have shorter dryer times. Nevertheless, for consumers who value a short cycle time over other features, they have the option today of purchasing a clothes washer with a short cycle time on the normal cycle.

**DOE must evaluate whether there are technologies that would allow for achieving higher efficiency levels than those currently available in the market.** In the RFI, DOE requests comment on whether the Department should consider max-tech efficiency levels different than the current maximum available efficiency levels. In many cases, even the most-efficient products on the market do not incorporate all potential technology options for improving efficiency. For example, DOE notes in the RFI that for the 2012 direct final rule (DFR), the max-tech levels were equivalent to the maximum available efficiency levels.<sup>7</sup> As shown in Table 1 below, the current maximum available efficiency levels are significantly higher than the max-tech levels in the 2012 analysis. Specifically, the current maximum available IMEF levels are 35% and 26% higher than the max-tech levels in the 2012 analysis for top-loading and front-loading washers, respectively. The current maximum available IWF levels are 22% and 21% lower than the 2012 max-tech levels (i.e. the most-efficient clothes washers in terms of water use available today use about 20% less water than what was assumed to be max-tech in the last rulemaking).

**Table 1. Max-tech levels in 2012 DFR compared to current maximum available efficiency levels<sup>8</sup>**

	Max-tech levels from 2012 DFR		Current maximum available efficiency levels	
	IMEF	IWF	IMEF	IWF
Top-loading	2.04	4.1	2.76	3.2
Front-loading	2.46	3.4	3.10	2.7

As part of its analysis, DOE must evaluate whether there are technologies that would allow for achieving higher efficiency levels than those currently available in the market.

**We encourage DOE to consider an alternative approach to standards for residential clothes washers to eliminate the current bias towards larger-capacity machines.** We have previously raised the concern that because the “average” load size for larger-capacity clothes washers represents a smaller percentage of the washer’s capacity than that for smaller machines, larger washers are able to use more energy

<sup>4</sup> 84 Fed. Reg. 37797.

<sup>5</sup> For example, GE Model GTW465ASNWW, which is a “Recommended” model in the *Consumer Reports* ratings.

<sup>6</sup> <https://www.consumerreports.org/cro/washing-machines/buying-guide/index.htm>.

<sup>7</sup> 84 Fed. Reg. 37799.

<sup>8</sup> 77 Fed. Reg. 32334 (May 31, 2012); 84 Fed. Reg. 37800.

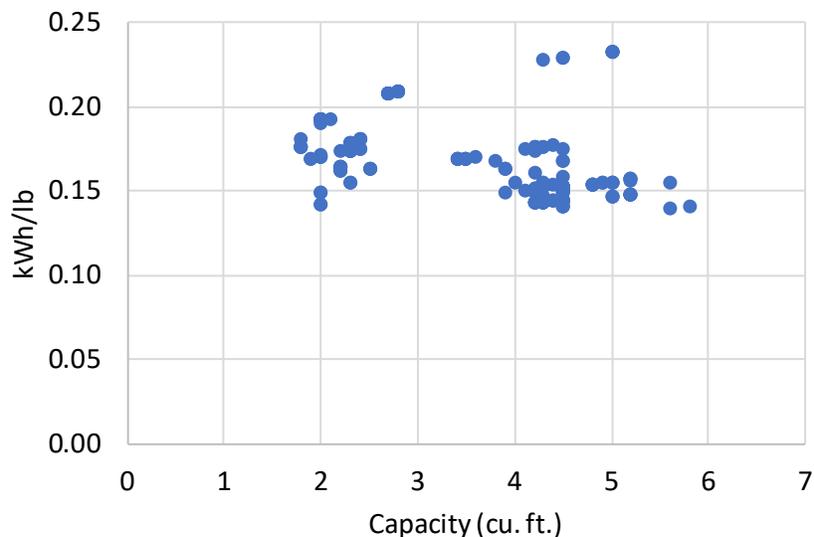
and water per pound of clothes than smaller washers with the same efficiency ratings.<sup>9</sup> Because of this bias and perhaps other reasons, there appears to be a clear trend of higher efficiency ratings (i.e. higher IMEFs, lower IWFs) with higher capacities as illustrated in Figures 1-4 above.

In the RFI, DOE requests feedback on whether it should consider an IMEF and/or IWF standard as an equation based on capacity, which would be consistent with the approach used for standards for refrigerators, for example.<sup>10</sup> We encourage DOE to consider such an approach as well as any other alternative approach that could achieve the same result of eliminating the current bias towards larger-capacity machines.

Another potential alternative approach would be to adjust the efficiency metrics such that they are not based on capacity. (Currently, IMEF is expressed as cu. ft./kWh/cycle, and IWF is expressed as gallons/cycle/cu. ft.) For example, the energy and water efficiency metrics could instead be expressed as kWh/lb. of clothing and gallons/lb. of clothing, respectively. Such an approach would be similar to the standards for clothes dryers, where the combined energy factor (CEF) metric is expressed as lbs./kWh.

Figures 5 and 6 below show the energy and water efficiency ratings, respectively, for front-loading clothes washers certified to DOE, but with the ratings expressed as kWh/lb and gal/lb.<sup>11</sup> In Figures 3 and 4 above, which show the same front-loading models with their IMEF and IWF ratings, the highest IMEF ratings and the lowest IWF ratings correspond to the largest-capacity washers. In contrast, when the efficiency ratings are expressed as kWh/lb and gal/lb as in Figures 5 and 6, the most-efficient 2 cu. ft. models have almost the same ratings as the most-efficient 4 cu. ft. and 6 cu. ft. models.

**Figure 5. Front-loading energy efficiency ratings expressed as kWh/lb**

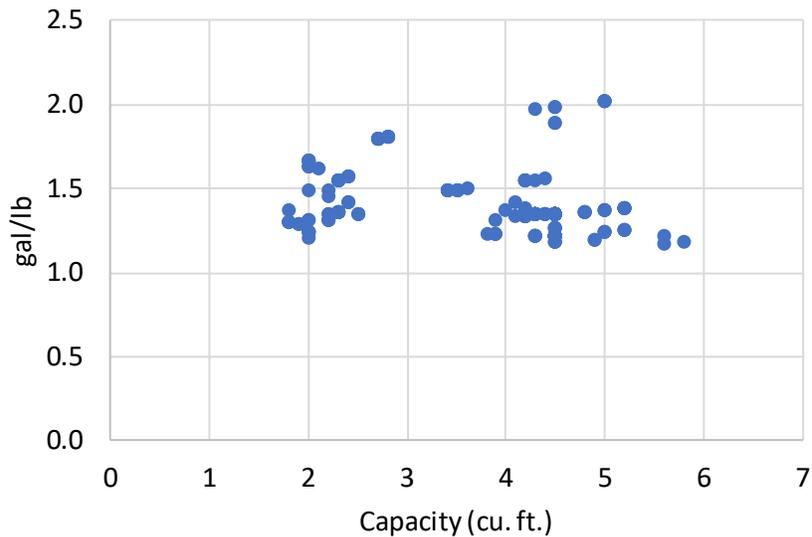


<sup>9</sup> <https://www.regulations.gov/document?D=EERE-2015-BT-WAV-0020-0002>.

<sup>10</sup> 84 Fed. Reg. 37800.

<sup>11</sup> For each model in the DOE Compliance Certification Database, we calculated the weighted-average test load size based on the washer’s capacity, the test load sizes specified in Table 5.1 of the test procedure, and the weighting factors for the minimum, maximum, and average load sizes of 0.14, 0.12, and 0.74, respectively. We then calculated kWh/lb as kWh/cycle divided by the weighted-average load size and gal/lb as gal/cycle divided by the weighted-average load size.

Figure 6. Front-loading water efficiency ratings expressed as gal/lb



We note that this type of adjustment to the efficiency metrics would not require any re-testing nor have any impact on test burden since there would be no change in the testing of clothes washers. Rather, there would just be a change in the calculations that are applied to the existing measured values.

**We agree with DOE’s preliminary conclusion that there is no rebound effect associated with more-efficient clothes washers.** In the RFI, DOE requests comment on any rebound effect associated with more-efficient clothes washers. DOE also notes that research to date indicates “no conclusive causality between increased efficiency and increased use.”<sup>12</sup> We agree with DOE’s preliminary conclusion that there is no rebound effect associated with more-efficient clothes washers.

Thank you for considering these comments.

Sincerely,

Joanna Mauer  
Technical Advocacy Manager  
Appliance Standards Awareness Project

David Hochschild  
Chair  
California Energy Commission

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<sup>12</sup> 84 Fed. Reg. 37801.

A handwritten signature in black ink that reads "Mel Hall-Crawford". The signature is written in a cursive style with a large, stylized initial "M" and "H".

Mel Hall-Crawford  
Energy Projects Director  
Consumer Federation of America