

Appliance Standards Awareness Project  
American Council for an Energy-Efficient Economy  
CLASP  
Consumer Federation of America  
Elevate Energy  
Government of the District of Columbia - Department of Energy & Environment  
Green Energy Consumers Alliance  
National Consumer Law Center  
Natural Resources Defense Council  
New Buildings Institute  
RMI

October 24, 2022

Mr. Bryan Berringer  
U.S. Department of Energy  
Office of Energy Efficiency and Renewable Energy  
Building Technologies Office, EE-2B  
1000 Independence Avenue SW  
Washington, DC 20585

**RE: EERE-2014-BT-STD-0058: Energy Conservation Standards for Consumer Clothes Dryers**

Dear Mr. Berringer:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), American Council for an Energy-Efficient Economy (ACEEE), CLASP, Consumer Federation of America (CFA), Elevate Energy, Government of the District of Columbia - Department of Energy & Environment (DC DOEE), Green Energy Consumers Alliance, National Consumer Law Center (NCLC) on behalf of its low-income clients, Natural Resources Defense Council (NRDC), New Buildings Institute (NBI), and RMI on the notice of proposed rulemaking (NOPR) for consumer clothes dryer standards. 87 Fed. Reg. 51734 (August 23, 2022). We appreciate the opportunity to provide input to the Department.

Clothes dryers—whether electric or gas—are one of the biggest energy users in many homes; today’s least-efficient electric dryer models consume as much as a tenth of the average home’s total electricity use. Yet, energy conservation standards for dryers have changed little since the early 1990’s. In the NOPR, DOE has proposed amended standards that would provide 3.1 quads of full-fuel-cycle (FFC) energy savings and cut CO<sub>2</sub> emissions by 116 million metric tons. DOE’s proposed standards would also provide large consumer benefits, with estimated consumer net present value savings of \$9.8 to \$22.2 billion.<sup>1</sup> For electric clothes dryers, which represent about 80% of the market,<sup>2</sup> DOE estimates that the average life-cycle cost (LCC) savings are nearly \$600 and the average payback period (PBP) is less than 7 months.<sup>3</sup> Importantly, DOE’s analysis shows that consumer sub-groups, including low-income

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<sup>1</sup>Table I.3. 87 Fed. Reg. 51737. DOE’s proposal is also estimated to provide another \$5.4 billion in benefits from reduced greenhouse gas emissions and \$3.6 - \$9.1 billion in health benefits from reduced NO<sub>x</sub> and SO<sub>2</sub> emissions.

<sup>2</sup>EERE-2014-BT-STD-0058-0034, p. 9-9. [www.regulations.gov/document/EERE-2014-BT-STD-0058-0034](http://www.regulations.gov/document/EERE-2014-BT-STD-0058-0034)

<sup>3</sup>Table I.2. 87 Fed. Reg. 51736.

households, will see significant cost savings under this proposed rule. Based on the analysis presented in the NOPR, we support the proposed standard levels for clothes dryers and urge DOE to promptly publish a final rule.

**We support DOE’s proposed standards, which would provide large cost savings for consumers, including low-income households.** In the NOPR, DOE has proposed to adopt Trial Standard Level (TSL) 3, which reflects the current ENERGY STAR specification and would require Combined Energy Factor (CEF) levels associated with electronic controls, advanced automatic termination controls, and two-stage heating modulation. The average LCC savings for affected consumers for electric and gas standard-size dryers are \$578 and \$198, respectively;<sup>4</sup> the average simple PBPs are less than 0.6 years for the electric standard class and less than 2 years for the vented gas standard class. Further, DOE estimates that the percentage of consumers experiencing a net cost would be only 0.1% and 3.7% for the electric and gas standard-size classes, respectively.<sup>5</sup>

Importantly, the proposed rule would provide large cost savings for low-income households. As part of DOE’s consumer subgroup analysis, the Department estimated impacts on low-income and senior-only households. Low-income consumers can particularly benefit from improved efficiency as they face high energy burdens<sup>6</sup> and are often renters whose landlords have little incentive to install efficient appliances. For low-income renters who pay their energy bills, DOE estimated that half of the incremental cost would be passed on to those households.<sup>7</sup> This assumption results in an average incremental cost increase for low-income consumers of \$26 for an electric standard dryer at TSL 3 relative to the baseline level;<sup>8</sup> the incremental cost increase is \$34 for all consumers.<sup>9</sup> This \$26 incremental cost is less than half the expected reduction in first-year operating cost (\$61), which coincides with average PBPs for low-income households of just over 5 months for electric standard dryers.<sup>10</sup> The resulting average LCC savings (\$566) and percentage of consumers with a net cost (0.2%) for low-income consumers for the electric standard class are similar to the overall LCC results. Overall, we support DOE’s proposal, which would provide large cost savings for all consumer groups, including low-income households.

**We support DOE’s proposal of a single product class to cover both vented and ventless standard-size and compact (120 V) electric clothes dryers.** As DOE notes in the NOPR, given that most standard-size heat pump dryers are ventless, establishing a product class for ventless electric standard clothes dryers would essentially result in a separate product class for heat pump dryers.<sup>11</sup> DOE further discusses that they are unaware of any performance-related differences that would necessitate a different product class for ventless standard electric dryers. For example, all standard ventless electric clothes dryers (i.e.,

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<sup>4</sup>*Ibid.*

<sup>5</sup>Table V.3, Table V.9. 87 Fed. Reg. 51780, 51781.

<sup>6</sup>Low-income households spend nearly 3x more of their income on energy costs (8.1%) vs. the median non-low-income household (2.3%). How High Are Household Energy Burdens? p. 9. [www.aceee.org/research-report/u2006](http://www.aceee.org/research-report/u2006)

<sup>7</sup>DOE treats low-income homeowners using the same methodology applied to the overall analysis. Low-income renters who do not pay their energy bills are assumed to be unaffected by amended standards.

<sup>8</sup>EERE-2014-BT-STD-0058-0034, p. 11-8. [www.regulations.gov/document/EERE-2014-BT-STD-0058-0034](http://www.regulations.gov/document/EERE-2014-BT-STD-0058-0034)

<sup>9</sup>Table V.2. 87 Fed. Reg. 51780.

<sup>10</sup>Low-income household average LCC, average PBP, and consumers at net cost are \$209, 1.55 years, and 2.2%, respectively for the vented gas standard class.

<sup>11</sup>87 Fed. Reg. 51747.

heat pump dryers) are rated under Appendix D2 and thus can meet final Appendix D2 moisture content requirements. Each of these models are also ENERGY STAR-qualified and thus meet the 80-minute cycle time requirements for ENERGY STAR recognition. DOE also found no issues in its own testing that suggests heat pump dryers have difficulty meeting the aforementioned moisture content and cycle time requirements.<sup>12</sup> Crucially, heat pump dryers represent the most efficient dryers on the market; therefore, separate product classes for vented and ventless standard dryers could restrict future opportunities to improve the energy efficiency of electric clothes dryers. Thus, we support DOE's proposal for a single electric standard product class. We similarly support a single product class for all compact (120 V) electric clothes dryers as proposed in the NOPR.

**We are concerned that DOE is underestimating the cost-effectiveness of higher TSLs.** It appears that the NOPR analysis is overestimating the market share of electric standard dryers at the proposed standard level in the no-new-standards case, which reduces the cost-effectiveness of TSLs 4–6. DOE states in the technical support document (TSD) that a combination of ENERGY STAR shipment data and model counts in the Compliance Certification Database (CCD) were used to estimate the no-new-standards case efficiency distribution;<sup>13</sup> the Department estimated that about 65% of shipments in the electric standard class will be at or above the proposed TSL 3 standard level, equivalent to the current ENERGY STAR level, by the assumed 2027 compliance date.<sup>14</sup> DOE's estimate of 65% is significantly higher than the 40% reported in the 2021 ENERGY STAR unit shipment data for electric dryers<sup>15</sup> and is more consistent with DOE's estimated CCD model counts, approximately 60%, as shown in Figure 3.14.1 of the TSD.<sup>16</sup> However, our recent analysis of models in the CCD suggests that only about 40% of models meet TSL 3,<sup>17</sup> consistent with the ENERGY STAR shipment data. Overall, we believe that the ENERGY STAR shipment data is a better reflection of the clothes dryers market than CCD model counts.

The cost effectiveness of a given TSL, particularly the percentage of consumers with net cost, appears particularly sensitive to the assumed no-new-standards case efficiency distribution.<sup>18</sup> For example, the preliminary analysis estimated that only about 15% of models were at the proposed standard level for standard electric dryers (CEF = 3.93). This coincided with a much lower percentage of consumers with net cost (22%) at TSL 4 (CEF = 4.21) in comparison to the NOPR analysis (53.5%). These results arise in part because it is more cost-effective for a purchaser to move from lower efficiency levels (e.g., baseline) to TSL 4 than moving from TSL 3 to TSL 4. For example, going from the baseline to TSL 4 for electric standard dryers is associated with a 19% increase in installed cost (\$581 to \$694) but results in a 91% increase in efficiency (2.20 to 4.21 CEF). In contrast, moving from TSL 3 to TSL 4 results in a 13%

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<sup>12</sup>*Ibid.*

<sup>13</sup>EERE-2014-BT-STD-0058-0034, p. 3-45. [www.regulations.gov/document/EERE-2014-BT-STD-0058-0034](http://www.regulations.gov/document/EERE-2014-BT-STD-0058-0034)

<sup>14</sup>Table IV.31. 87 Fed. Reg. 51765.

<sup>15</sup>ENERGY STAR Unit Shipment and Market Penetration Report Calendar Year 2021 Summary, p. 4.

[energystar.gov/partner\\_resources/products\\_partner\\_resources/brand\\_owner\\_resources/unit\\_shipment\\_data](http://energystar.gov/partner_resources/products_partner_resources/brand_owner_resources/unit_shipment_data)

<sup>16</sup>While the data is not shown in tabular form, there are about 240 CCD models shown in Figure 3.14.1 of the TSD at 3.70-3.79 CEF and about 330 models at CEF > 3.90. Thus, about 60% of the market is at or above TSL 3.

<sup>17</sup>Accessed on October 14, 2022. [www.regulations.doe.gov/certification-data/#q=Product\\_Group\\_s%3A\\*](http://www.regulations.doe.gov/certification-data/#q=Product_Group_s%3A*)

There are 498 individual electric standard models rated using Appendix D1 with baseline ratings (3.70-3.79 CEF<sub>D1</sub>) and 360 models rated using Appendix D2 at TSL 3 (3.93-3.94 CEF<sub>D2</sub>). Results for unique basic models are similar with 36% of basic models rated at TSL3 (181 models at 3.93-3.94 CEF<sub>D2</sub> vs. 326 with baseline D1 ratings).

<sup>18</sup>The no-new-standards case efficiency distribution also affects national energy savings estimates. For example, the FFC energy savings presented in the preliminary analysis were 5.4 quads compared to 3.1 quads in the NOPR.

first-cost increase (\$615 to \$694) while yielding a 7% increase in efficiency (3.93 to 4.21 CEF). Thus, the assumptions regarding the no-new-standards case efficiency distribution are important in estimating the percentage of purchasers experiencing a net cost at higher TSLs.

**We encourage DOE to consider ways to help ensure that the expected savings from the proposed standards are realized.** Appendix D2 specifies that dryers are tested at the maximum temperature setting and maximum time setting (if equipped with a manual timer); any optional cycle settings that do not affect cycle temperature or time are tested in the as-shipped configuration.<sup>19</sup> As discussed in the NOPR,<sup>20</sup> DOE's interpretation of Appendix D2 appears to be that an "energy saver" or "eco mode" that changes cycle time or temperature setting cannot be included in the energy test cycle. However, we understand that a significant portion of ENERGY STAR-qualified dryers, tested using Appendix D2, use an energy-saving mode (e.g., eco mode) to qualify. Given this apparent discrepancy, DOE should consider potential routes to ensure that the expected savings from the proposed standards translate to real-world energy savings. For example, DOE could consider requiring manufacturers to report the settings used for test cycles.

Thank you for considering these comments.

Sincerely,



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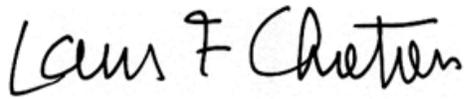


Tommy Wells  
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<sup>19</sup>[www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-430/subpart-B](http://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-430/subpart-B)

<sup>20</sup>87 Fed. Reg. 51750.



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