

Appliance Standards Awareness Project
American Council for an Energy-Efficient Economy
National Consumer Law Center, on behalf of its low-income clients
Natural Resources Defense Council
Northwest Energy Efficiency Alliance

August 22, 2022

Mr. Jeremy Dommu
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-0048/RIN 1904-AF27: Notice of Proposed Rulemaking for Energy Conservation Standards for Dedicated-Purpose Pool Pump Motors

Dear Mr. Dommu:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), American Council for an Energy-Efficient Economy (ACEEE), National Consumer Law Center, on behalf of its low-income clients (NCLC), Natural Resources Defense Council (NRDC), and Northwest Energy Efficiency Alliance (NEEA) on the notice of proposed rulemaking (NOPR) for dedicated-purpose pool pump motors (DPPPMs). 87 Fed. Reg. 37122 (June 21, 2022). We appreciate the opportunity to provide input to the Department.

We support the proposed standards for DPPPMs. The proposed standards, which generally align with existing standards in California for replacement pool pump motors,¹ would ensure that all pool pump motors greater than or equal to 0.5 total horsepower (THP) are variable-speed. DOE estimates that the variable-speed requirement will reduce energy use by about two-thirds on average relative to the least-efficient single-speed motors.² The proposed standards would also establish requirements for pool pump motors sold with freeze protection controls, which align with existing requirements for pool pumps,³ and would ensure that the smallest pool pump motors meet a minimum level of motor efficiency. DOE estimates that the proposed standards would save about 1 quad of energy over 30 years of sales and yield net present value savings of \$3-6 billion for consumers. The estimated simple payback periods range from 0.7 to 2.3 years depending on the equipment class.⁴

We believe that DOE's analysis appropriately captures the energy savings from variable-speed DPPPMs. At the public meeting on July 26, industry stakeholders claimed that "small-size" DPPPMs⁵ cannot provide adequate flow at low speed and that pressure cleaner booster pump motors must run at

¹ California Code of Federal Regulations, Title 20, Section 1605.3(g)(6)(B).

² <https://www.regulations.gov/document/EERE-2017-BT-STD-0048-0071>. p. 7-14. Tables 7.5.2 and 7.5.3.

³ 10 CFR 431.465.

⁴ 87 Fed. Reg. 37124.

⁵ "Small-size" DPPPMs have motor THP in the range of $0.5 \leq \text{THP} < 1.15$.

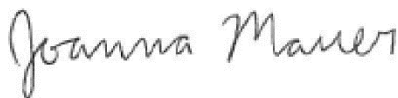
or very close to full speed.⁶ For variable-speed pool filter pump motors, consistent with the analysis for the 2017 dedicated-purpose pool pump (DPPP) direct final rule, DOE calculated the low-speed flow rate for each consumer in its sample based on each consumer's pool volume and desired time per turnover. DOE also applied a minimum flow rate threshold based on the DPPP test procedure, which is equal to 24.7 gallons per minute (gpm) for smaller pumps.⁷ In other words, DOE did not assume that the low speed of a variable-speed pump is a fixed percentage of high speed, but rather calculated an appropriate low-speed flow rate and the associated energy factor for each consumer in its sample, taking into account the minimum flow rate thresholds.

For pressure cleaner booster pump motors, DOE estimated the energy savings associated with reducing flow rate to the 10 gpm specified in the test procedure, which is the typical flow rate required or recommended for suction-side pressure cleaners to function.⁸ The savings associated with variable-speed pressure cleaner booster pump motors are supported by testing conducted by the California Investor-Owned Utilities (IOUs) during the DPPP rulemaking, which demonstrated that variable-speed control can reduce pressure cleaner booster pump energy consumption by 54-67%.⁹ Furthermore, as DOE notes in the technical support document (TSD), according to the pump affinity laws, there is a cubic relationship between pump speed and power, which means that even reducing the speed of a pump by a small amount can yield large energy savings.¹⁰

We support the proposed product-specific enforcement provisions. In the NOPR, DOE is proposing product-specific enforcement provisions for DPPPMs.¹¹ We support these provisions, which will provide clarity regarding how DOE would determine whether a DPPPM complies with the requirements regarding variable-speed capability and freeze protection design.

Thank you for considering these comments.

Sincerely,



Joanna Mauer
Technical Advocacy Manager
Appliance Standards Awareness Project



Amber Wood
Director, Buildings Program
American Council for an Energy-Efficient Economy

⁶ <https://www.regulations.gov/document/EERE-2017-BT-STD-0048-0088>. pp. 15, 27, 32, 56.

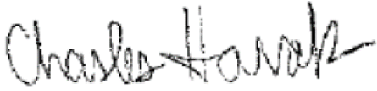
⁷ <https://www.regulations.gov/document/EERE-2017-BT-STD-0048-0071>. pp. 7-5, 7-6. The 24.7 gpm minimum flow rate threshold applies to pumps for which hydraulic horsepower at max speed on curve C is ≤ 0.75 . For pumps with hydraulic horsepower > 0.75 , a minimum flow rate threshold of 31.1 gpm applies.

⁸ 82 Fed. Reg. 36886 (August 7, 2017).

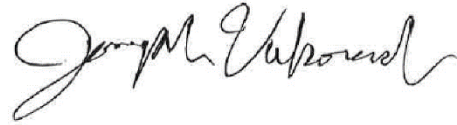
⁹ <https://www.regulations.gov/document/EERE-2015-BT-STD-0008-0069>.

¹⁰ For example, according to the pump affinity laws, reducing speed by 10% would reduce power by more than 25% ($1 - (0.9)^3$).

¹¹ 87 Fed. Reg. 37185.



Charles Harak, Esq.
National Consumer Law Center
(On behalf of its low-income clients)



Joe Vukovich
Energy Efficiency Advocate
Natural Resources Defense Council



Nicole Dunbar, PE
Codes & Standards Engineer
Northwest Energy Efficiency Alliance