

Appliance Standards Awareness Project
American Council for an Energy-Efficient Economy
Natural Resources Defense Council
Northwest Energy Efficiency Alliance

March 9, 2022

Jeremy Dommu
U.S. Department of Energy
Building Technologies Program, EE-5B
1000 Independence Avenue SW
Washington, DC 20585

RE: Docket Number EERE-2022-BT-STD-0001: Request for Information for Energy Conservation Standards for Dedicated-Purpose Pool Pumps

Dear Mr. Dommu:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), American Council for an Energy-Efficient Economy (ACEEE), Natural Resources Defense Council (NRDC), and Northwest Energy Efficiency Alliance (NEEA) on the request for information (RFI) for energy conservation standards for dedicated-purpose pool pumps (DPPPs). 87 Fed. Reg. 3461 (January 24, 2022). We appreciate the opportunity to provide input to the Department.

There is significant potential to achieve energy savings from amended standards for DPPPs. The 2017 direct final rule (DFR) for DPPPs will achieve very large energy savings by shifting much of the market for pumps for in-ground pools (self-priming pool filter pumps) to variable-speed models. However, significant opportunity remains to achieve additional energy savings from amended standards for DPPPs, including in the following areas:

- **Small-size self-priming pool filter pumps:** For self-priming pool filter pumps with hydraulic horsepower (HHP) greater than or equal to 0.711 HP, the current standards are based on the use of variable-speed motors. However, for small-size self-priming pumps (<0.711 HHP), the current standards are based on single-speed motors. For the analysis for the 2017 DFR, DOE estimated that a typical small-size self-priming pump just meeting the standard level adopted consumes about 1,400 kWh per year, and that switching to a variable-speed motor can cut energy use in half.¹ There are nearly 40 models of variable-speed small-size self-priming pumps listed in the DOE Compliance Certification Database (CCD).²
- **Non-self-priming pool filter pumps:** For non-self-priming pool filter pumps, the current standards are based on single-speed motors. For the analysis for the 2017 DFR, DOE estimated that a typical non-self-priming pump just meeting the standard level adopted consumes about

¹ <https://www.regulations.gov/document/EERE-2015-BT-STD-0008-0105>. Table 7.4.3. DOE adopted EL 2 for small-size self-priming pumps.

² https://www.regulations.doe.gov/certification-data/#q=Product_Group_s%3A*. As of February 7, 2022.

1,270 kWh per year, and that switching to a variable-speed motor can reduce energy use by 60%.³ There are 13 models of variable-speed non-self-priming pumps listed in the DOE CCD.⁴

- Pressure cleaner booster pumps: Of the 10 pressure cleaner booster pump models listed in the DOE CCD, 6 have rated weighted energy factor (WEF) values higher than the max-tech level from the 2017 DFR. Notably, while the max-tech level assumed the use of a variable-speed motor, all the models in the DOE CCD are listed as single speed.
- Pool filter pumps designed for commercial applications: Pool pumps designed to be used in commercial applications (which typically have HHPs >2.5 HP) are excluded from the current standards.⁵ While large public pools make up a small portion of all in-ground pools, one paper estimated that these commercial pools account for almost half of total pool pump energy use.⁶ We understand that because pumps are typically oversized, many commercial pools provide higher turnover rates than those required by health authorities.⁷ Therefore, variable-speed pumps can provide large savings in commercial applications by reducing pump speed while still meeting turnover requirements. Variable-speed pumps can also provide additional savings in commercial applications by providing the ability to reduce pump speed when pools are closed seasonally or are closed each day.⁸ Variable-speed pool pumps intended for commercial applications are available on the market today.⁹

We encourage DOE to evaluate both potential amended standards for DPPP that are subject to existing standards as well as potential new standards for pool filter pumps designed for commercial applications.

We encourage DOE to evaluate higher max-tech levels than those considered in the 2017 DFR. In the RFI, DOE requests comment on whether the max-tech levels from the 2017 DFR are appropriate for the current rulemaking. As shown in figure 1 below, for self-priming and non-self-priming pool filter pumps, at each of the HHPs of the representative units from the 2017 DFR there are models in the DOE CCD¹⁰ with rated WEFs that are higher than the 2017 max-tech levels.

³ <https://www.regulations.gov/document/EERE-2015-BT-STD-0008-0105>. Table 7.4.3. DOE adopted EL 1 for non-self-priming pumps.

⁴ https://www.regulations.doe.gov/certification-data/#q=Product_Group_s%3A*. As of February 7, 2022.

⁵ DOE describes in the RFI that after the publication of the 2017 DFR, manufacturers identified several DPPP models that are designed for commercial applications but that have HHPs <2.5 HP. There is currently an enforcement policy in place regarding those DPPPs.

⁶ Worth, C., T. Rosenfeld, G. Gockel, and G. Fernstrom. "A Cannonball of Opportunity: The Hidden Savings Potential from Large Public Swimming Pools." Proceedings from the 2018 ACEEE Summer Study on Energy Efficiency in Buildings.

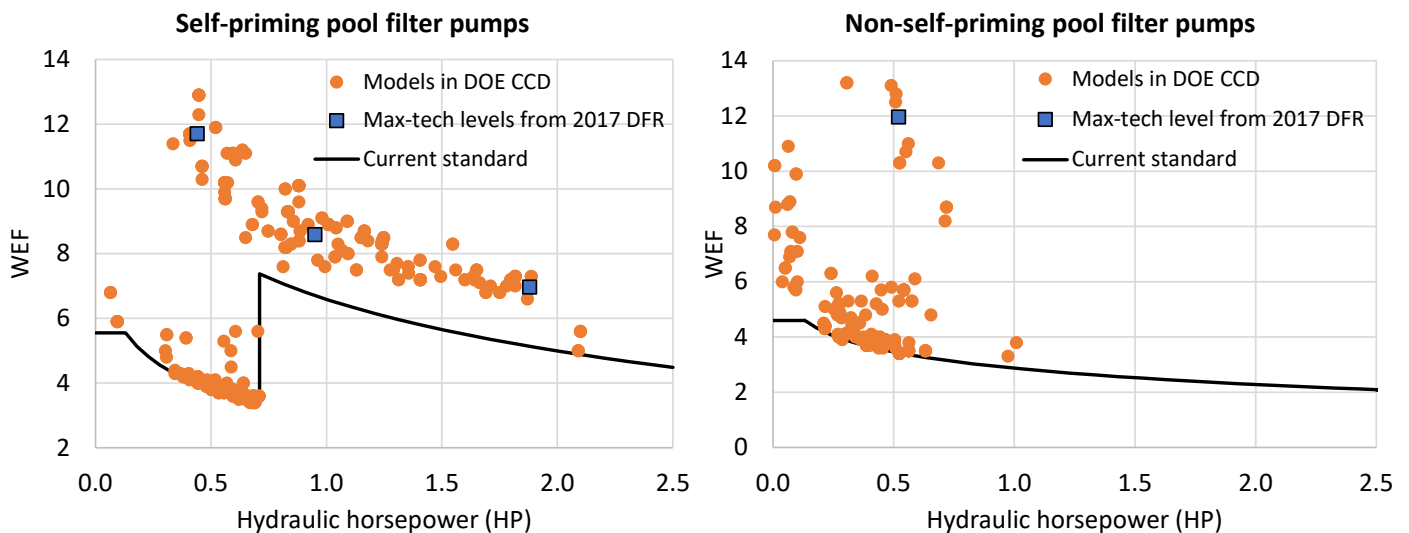
⁷ <http://e3tnw.org/ItemDetail.aspx?id=464>.

⁸ Worth, C., T. Rosenfeld, G. Gockel, and G. Fernstrom. "A Cannonball of Opportunity: The Hidden Savings Potential from Large Public Swimming Pools." Proceedings from the 2018 ACEEE Summer Study on Energy Efficiency in Buildings.

⁹ See, for example: <https://www.pentair.com/content/dam/extranet/nam/pentair-pool/commercial/brochures/pumps/maxeproxf-vs-pump-brochure.pdf>.

¹⁰ https://www.regulations.doe.gov/certification-data/#q=Product_Group_s%3A*. As of February 7, 2022.

Figure 1. Rated WEF values of models in the DOE CCD compared to the max-tech levels from the 2017 DFR for self-priming (left) and non-self-priming (right) pool filter pumps



For pressure cleaner booster pumps, as described above, all the models in the DOE CCD are listed as single speed, and yet 6 of the 10 models have rated WEFs above the max-tech level from the 2017 DFR.

Given the current market availability of self-priming and non-self-priming pool filter pumps and pressure cleaner booster pumps with rated WEFs above the 2017 max-tech levels, we encourage DOE to evaluate higher max-tech levels for this rulemaking. In addition, for pressure cleaner booster pumps, we encourage DOE to evaluate max-tech levels that are higher than the maximum-available efficiency levels and that reflect the use of variable-speed motors.

Thank you for considering these comments.

Sincerely,

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