

November 20, 2017

Abigail Daken  
US Environmental Protection Agency  
Ariel Rios Building 6202J  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

Dear Ms. Daken:

The Consortium for Energy Efficiency (CEE) respectfully submits the following comments in response to the ENERGY STAR® Pool Pump Specification Versions 2.0 and 3.0 Draft 1, released by the Environmental Protection Agency (EPA) on September 28, 2017.

CEE is the binational organization of energy efficiency program administrators and a staunch supporter of the ENERGY STAR® Program. CEE members are responsible for ratepayer-funded efficiency programs in 46 US states, the District of Columbia, and seven Canadian provinces. In 2015, CEE members directed over \$7 billion of the \$8.7 billion in energy efficiency and demand response program expenditures in the two countries. These comments are offered in support of the local activities CEE members carry out to actively leverage the ENERGY STAR brand. CEE consensus comments are offered in the spirit of strengthening ENERGY STAR, so it may continue to serve as the national marketing platform for energy efficiency.

CEE highly values the role ENERGY STAR plays in differentiating energy efficient products and services that the CEE membership supports locally throughout the US and Canada. We appreciate the opportunity to provide these comments.

## CEE Supports Adoption of the DOE Test Method in the ENERGY STAR Criteria

CEE is very supportive of the efforts of the US Department of Energy (DOE) dedicated-purpose pool pump (DPPP) working group and the resulting test procedure and efficiency metric that were adopted by DOE on August 7, 2017. In particular, we support the use of a weighted energy factor (WEF) because it allows the efficiency of two-, multi-, and variable-speed pumps to be calculated as the weighted average of performance at both high and low speeds. Due to pump affinity laws, most pumps will achieve higher energy factors at lower rotational speeds and as such, the WEF efficiency metric confers benefits on pool filter pumps that are able to operate at reduced rotational speeds. We see this as an improvement over the existing energy factor metric, which is only capable of providing the efficiency of the pump at single load point. In addition, the test procedure final rule specifies that the lower of the two load points cannot fall below a certain flow rate, which addresses previous CEE Swimming Pool Committee concerns regarding pumps reporting inflated energy factor values based on unrealistically low flow rates. Based on both these enhancements, CEE supports EPA proposal to reference the new DOE test method and a weighted energy factor within the ENERGY STAR specification.

## CEE Supports the Proposed Expansion of ENERGY STAR Scope

CEE supports the EPA proposal to increase the scope of the ENERGY STAR pool pump specification. Specifically, CEE is pleased to see the inclusion of above ground pool pumps or non-self-priming pool pumps and pressure cleaner booster pumps. CEE believes it to be an appropriate expansion of the ENERGY STAR program given both these pump types are included in the DOE test method and represent a significant energy savings opportunity.

Based on the high level of interest from CEE members, above ground pool pumps have been included within the scope of the [CEE Residential Pool Pump Specification](#) since it was launched in 2013. According to the [CEE Residential Swimming Pool Initiative](#), approximately 48 percent of the 11 million residential pools in the US and Canada are above ground. In the recent technical support document, DOE estimates energy savings potential for two-speed standard-size non-self-priming pool filter pumps to range from 464 to 693 kWh per year and variable-speed standard-size non-self-priming pool filter pumps to range from 1,093 to 1,225 kWh per year.<sup>1</sup> As a result, CEE is very supportive of the inclusion of above ground pool pumps within the ENERGY STAR specification.

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<sup>1</sup> DOE Technical Support Document for Dedicated-Purpose Pool Pumps, December 2016. <https://www.regulations.gov/document?D=EERE-2015-BT-STD-0008-0105>

Based on intelligence stemming from program experience of the CEE Swimming Pool Committee, we estimate that approximately 60 percent of residential swimming pools in Arizona and Northern California use pressure cleaner booster pumps. While the prevalence of pressure cleaner booster pumps likely varies significantly given regional preferences, they do represent energy savings opportunity where installed and consequently CEE supports expanding the ENERGY STAR specification scope to include these pumps. In the recent technical support document, DOE estimates energy savings potential for higher efficiency single-speed motor pressure cleaner booster pumps to range from 218 to 228 kWh per year with variable speed pressure cleaner booster pumps to range from 418 to 491 kWh per year.

Similar to EPA, CEE has been interested in the energy savings opportunity offered by replacement pool motors. According to the [CEE Residential Swimming Pool Initiative](#), when a motor in an existing pool pump malfunctions, approximately 45 percent of the time a pool owner chooses to replace the motor only. The lower cost of a motor replacement versus a complete pump and motor system makes the partial replacement option very popular. It is estimated that there are around 450,000 motors replaced in in-ground pools annually with above-ground pool replacements likely representing 10 to 15 percent of that number. CEE has yet to develop a specification for replacement motors given the lack of a test method for pool pump motors and potential for performance variations based on different motor and pump combinations. We are therefore, highly encouraged by the DOE public meeting to gather data and information that could lead to the consideration of energy conservation standards for dedicated-purpose pool pump motors held on August 10, 2017. Likewise, CEE is very supportive of EPA efforts to collect performance data on replacement motors as a first step towards including these products in the ENERGY STAR specification.

## **CEE Supports the Intent of the Proposed Efficiency Requirements**

Like EPA, CEE recognizes that the pool pump market has advanced considerably since the launch of the CEE and ENERGY STAR pool pump specifications with a corresponding increase in the number of active energy efficiency programs. We agree that the market is offering consumers a wider variety of efficient pumps at prices that are more affordable than in the past and there is a ripe opportunity to revise the ENERGY STAR criteria. We support EPA's intention to recognize only variable speed pool pumps with the Version 2.0 proposal, to identify the highest performing variable speed pool pumps in the market, and continue to deliver energy savings after the DOE minimum efficiency standard goes into effect in July of 2021 with Version 3.0. We believe the ENERGY STAR proposal will provide increased energy savings, effective delineation in the market, while offering consumers a choice of cost-effective products.

## **CEE Encourages EPA to Confirm Version 3.0 Specification Levels Prior to the Effective Date**

As stated above, CEE supports EPA plans to develop a Version 3.0 specification. While we appreciate that there may be benefits for completing that revision in conjunction with Version 2.0 updates, we also believe that there could be some risks to this approach. We recognize that ENERGY STAR can more efficiently use resources spent on specification revisions if it completes these updates in tandem and that it would provide manufacturers greater certainty about the future. We also appreciate that given the technical nature of the efficiency improvements currently available for pool pumps and the typically slow turnover of pool pump models, it may be reasonable to successfully establish requirements three years out. Conversely, incorrectly anticipating market behavior could lead to specification levels that are inconsistent with ENERGY STAR brand tenets. If manufacturers are supportive of this approach and EPA ultimately chooses to move forward with setting Version 3.0 efficiency requirements in 2018, we recommend that EPA assess the market conditions and perform a market assessment in early 2021 prior to the specification effective date to ensure the performance requirements remain relevant and are achieving the originally intended objectives.

## **CEE Recommends the Continued Reporting of Performance for Curves A and B**

CEE does not support the EPA proposal to eliminate the reporting performance data at the more restrictive plumbing curves, curves A and B. While EPA does not anticipate using curve A and B performance data, this information is important to efficiency programs and pool contractors. Based on feedback received from swimming pool industry representatives during the development of the CEE Swimming Pool Initiative, CEE believes Curve A to be the most representative of typical pools in the US and Canada. Many efficiency programs require data that reflects the performance of pumps in their service territories when calculating energy savings, which in most cases includes all three plumbing curves. Knowledge of a pumps efficiency on different performance curves is also crucial for contractors, as it enables them to identify and right size pumps for a particular swimming pool system. CEE therefore requests that EPA continue to require that manufacturers provide performance data for curves A, B, and C so that ENERGY STAR can continue to serve as a national clearinghouse for pool performance data.

## **CEE Seeks EPA Help to Provide Additional Data to Efficiency Programs**

Given that the performance data in the EPA dataset is based on calculated WEF values, CEE sees value in EPA collecting tested WEF values of ENERGY STAR pool pumps directly from manufacturers. Having actual performance data allows CEE members to confirm and support

program analysis and provides the necessary basis for establishing program incentives. The benefit of this approach is that it also gives EPA an accurate dataset to make assessments regarding number and percent of eligible pool pump models to inform the specification revision process.

While CEE appreciates ENERGY STAR analysis of performance of pool pump models in the market and insights to the customer payback of the proposed efficiency requirements, we are challenged by the lack of specific energy savings data provided to stakeholders. For CEE members to assess whether the proposed levels meet the needs of energy efficiency programs, a deeper analysis that includes per unit energy savings values is required. As a result, CEE requests that EPA share per unit energy saving calculation and estimations with stakeholders.

CEE would once again like to thank the EPA for the opportunity to comment on versions 2.0 and 3.0 of the ENERGY STAR Pool Pump criteria. Please contact CEE Senior Program Manager Eileen Eaton at (617) 337-9263 with any questions about these comments.

Sincerely,

A handwritten signature in blue ink that reads "Ed Wisniewski". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Ed Wisniewski  
Executive Director