

ENERGY STAR Pool Pumps V2V3 Draft 1 Specification Stakeholder Comments			
Topic	Subtopic	Comment Summary	EPA Response
Certification Bodies/ Labs Delay		One stakeholder commented that switching to the WEF based requirements and the DOE Dedicated Purpose Pool Pumps Test Method would require that Certification Bodies in the program update and be accredited to the new standard before products would be able to be certified. This stakeholder requested information on the availability of labs and certification bodies ready to test to V2 and V3 specifications once they are effective (can certify products to), particularly, if there would be any gap between the effective date and the ability to certify pool pumps.	EPA is verifying that certification bodies will be ready to certify to the V2 Specification in advance of the effective date. EPA and our recognized laboratories and certification bodies have worked through many similar transitions for other products.
Data Requirements		A stakeholder commented that the proposed requirements for the ENERGY STAR V2V3 would require the collection of different performance metrics than the V1.1 specification, thus would require a major update to the ENERGY STAR data collection database.	Between major revisions of a specification, EPA redesigns the products database as needed for the new data requirements, and a new product submission template is used for the new products. EPA and our certification bodies have worked through transitions such as this one many times for other products, and have processes in place to make it as easy as possible.
Default Filtration Speed		One stakeholder commented that the default filtration speed should be defined to reduce the following ambiguity: should the control already have this setting programmed or can a user program the default filtration speed. Is it sufficient to have the recommended default speed in the instruction manual. This stakeholder also commented that a potential definition for this default filtration speed is defined by California Energy Commission Appliance Regulations as "the low speed, having a rotation rate that is no more than one-half of the motors maximum rate".	EPA has revised the specification to provide increased clarity on default filtration speed, including that this speed shall be no more than 1/2 the of the motor's maximum rotation rate.
Demand Response		One stakeholder commented that the changes to the Connected Criteria are reasonable and should not negatively impact demand response functionality or the products ability to offer demand response benefits. This stakeholder noted that pool pumps are an important source of demand response capability for utilities across the country.	Thank you for your comment.
Freeze Protection		Three stakeholders commented on freeze protection, recommending that EPA adopt the DOE prescriptive standards for all freeze protection equipped pumps. All the stakeholders described the freeze protection requirements: a freeze protection equipped pump must be shipped with the default 40 Deg F Dry Bulb start point, rechecking at a maximum time of 1 hour, and maximum operating speed at 1/2 max speed. These stakeholders noted that additional energy savings would be possible with this prescriptive requirement. Two of the stakeholders noted that the prescriptive requirements were developed via unanimous agreement between the pump industry and DOE.	In accordance with suggestions, EPA is proposing to add the DOE freeze protection requirements as written in the DPPP standard, and supporting definitions for freeze protection controls, timer, integral cartridge filter pump, and integral sand filter pump to the specification.
High Speed Override		One stakeholder commented that high-speed override should be defined explicitly, and would like to clarify if that refers to a boot button that is an automatic return to default speed? Additionally, whether the ability to program the speed and time be considered a high-speed override.	EPA has updated the specification to clarify the High Speed Over-ride terminology, noting that the product must be able to return to the default filtration speed in a maximum 24 hours. This section does not allow permanently programming the pump to a high speed to be considered a high speed override due to the fallback time requirement.
References	NSF/ANSI 50-2016a	One stakeholder commented that the references section should be updated to include NSF/ANSI 50-2016a, noting that there are no differences in definitions between 15 and 16a.	EPA has updated the specification reference to ANSI/NSF 50-2016a. ANSI/NSF 50-2015 has been removed.
Replacement Motors	Inclusion	Five stakeholders commented in support of the inclusion of replacement motors in Pool Pumps in the ENERGY STAR specification. Two noted that consumers will often replace a malfunctioning motor in their pool pump, opening the potential for highly inefficient replacement motors, which would not be regulated by the upcoming DOE pool pump regulations. One stakeholder noted that the ENERGY STAR Pool Pumps program historically only covered entire pump units, so many installers would need to replace the entire unit to obtain a rebate, whereas replacing the motor alone may have been sufficient in that case. This replacement motors section may open an additional path for cost effective energy savings to consumers, who may not wish to replace their entire unit.	Thank you for your support. EPA notes that setting requirements on replacement motors in the specification will require a test method which is currently being developed by DOE.
Replacement Motors	Metric + Levels	Two stakeholders referred to the Motor Weighted Energy Factor (MWEF) as proposed by the California Energy Commission (CEC) as a potential metric for replacement motor requirements, but noted that this metric was undergoing industry evaluation.	EPA will monitor the active replacement motors test standards development processes as they progress.

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Replacement Motors	Motor Data	One stakeholder commented that available sources of motor performance data include Association of Pool and Spa Professionals (APSP) efficient replacement motors database, the California Energy Commission's (CEC) staff report on efficiency levels for DPPP replacement motors, and the CEC Appliance Efficiency Database.	Thank you for the information. EPA will incorporate these data sources into the ongoing specification development effort.
Replacement Motors	Test Method	Multiple stakeholders commented on the test method needed for testing replacement motors. Three stakeholders commented on the ongoing test method development with industry and US DOE, and one noted that EPA should maintain a placeholder in the spec for replacement motors, to revise once this test method becomes public. Two stakeholders recommended that the chosen test method for replacement motors should only require motor testing (no pump testing component). One of these stakeholders further clarified that a test method fitting this need would be CSA 747-2009 (RA2014), and EPA should investigate this test method with motor test points that align with the DOE Dedicated Purpose Pool Pump standards.	EPA will follow all the various efforts to develop replacement motor test standards and will work to set requirements on replacement motors in the specification once there is more clarity about test methods.
Replacement Motors	Timeline	One stakeholder commented on the timeline for replacement motors, noting that the DOE Pool Pump replacement motors rulemaking is intended to be ready in advance of the 2021 compliance date of the pool pumps standard. This stakeholder recommended that EPA wait until this DOE replacement motor regulation is released, and align to that standard.	EPA notes that the setting of requirement levels in advance of the 2021 DOE compliance date remains largely dependent on the release of a replacement motor test method with sufficient time to incorporate it into the specification.
Reporting	Curve A/B/C Data	One stakeholder noted that pool pump installers rely on the Curve A/B/C information, especially at Max speed for pump sizing, and the ENERGY STAR QPL is by far the most comprehensive source of this information. This importance is increased by the fact that DOE standardized on Curve C information, yet many installations across the US would be on Curve A or B.	Upon investigation, EPA found that the tests are both easy to implement alongside testing with the DOE DPPP Test Procedure, and this data is a collection requirement for other regulatory organizations. Thus, EPA is proposing to continue to collect Curve A/B/C data while the DOE DPPP Test Procedure supports this data collection (up to the DOE 2021 compliance date), to maintain the availability of this data, assisting pump sizing calculations.
Scope	Non Self Priming, Booster Pumps	Three stakeholders commented in support of the inclusion of non-self-priming pumps and pressure cleaner booster pumps to the specification. One stakeholder commented further that DOE estimates that shipments of non-self-priming pumps and pressure cleaner booster pumps will be 450,000 and 140,000, respectively, in 2021, The other stakeholder commented further that the inclusion of these product types to the specification will raise awareness of efficient non-self-priming pumps and booster pumps to both installers and consumers, which could further enable incentive programs, both in CA and nationwide.	Thank you for your comment.
Scope	Self Priming	Two stakeholders commented on the self priming scope in the pool pumps specification: One stakeholder noted that the DOE DPPP rulemaking is up to and not including (<) 2.5 hydraulic horsepower (hhp), and that the specification should be updated to match the DOE rulemaking and test method. The other commenter noted that DOE set the top size limit to 2.5 hhp primarily due to lack of data and low shipment volumes. This stakeholder noted that recent changes to the US CDC's Aquatic Code now allow for reduced filtration speed when the pool is unoccupied, resulting in a large commercial energy savings opportunity which would benefit from efficient large variable speed pumps. This stakeholder requested that EPA work with industry to design data collection requirements to pumps in this size class, in order to develop a data set that would benefit further standards development in the future.	EPA confirms that including the 2.5 hhp endpoint in scope was a typographic error, and has updated the maximum size endpoint in the specification to <2.5 hhp. EPA appreciates the information about commercial pool operation requirements, and may consider inclusion of larger pumps in the future.
Test Method	Number of Samples	One stakeholder commented that the Energy Star V2V3 Draft 1 specifies that one (1) test sample should be tested, whereas the DOE DPPP Test Procedure requires a minimum of two (2) test samples per model. This stakeholder requested that EPA clarify this point.	EPA confirms that DOE requirements specify the testing of at least 2 samples per model, and updated the Draft 2 specification accordingly. For products covered by DOE minimum efficiency standards, ENERGY STAR specifications typically allow an option to test multiple samples and calculate results according to 10 CFR Part 429, Subpart B. We are clarifying whether including this option makes sense for Version 3.0, and will update the specification once we know.

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Test Method	Standby	One stakeholder commented that the Pool Pumps specification references an ENERGY STAR Version 2 Pool Pumps Test Method, but none was found. This stakeholder requested clarification whether there is a new test method or if this is an editorial error, meant to refer to the ENERGY STAR Version 1 Pool Pumps Test Method.	EPA has clarified that the Standby Power testing requirement may be conducted against section 6.3 in ENERGY STAR Pool Pumps Test Method.
Test Method	WEF	Three stakeholders commented in support of adopting the DOE Weighted Energy Factor metric and test method. One of the stakeholders noted that the WEF metric and corresponding test method were developed in close cooperation between industry and DOE. A motor manufacturer noted that this change should not increase testing burden to manufacturers.	Thank you for your comment.
Timeline	V2 + V3	Two stakeholders commented in support of EPA developing the ENERGY STAR Pool Pumps Version 2 and Version 3 Specifications at the same time. One of these stakeholders further noted that this simultaneous development will allow manufacturers to plan for both the Federal Standard and ENERGY STAR Version 3 at the same time.	Thank you for your comment.
V2 Levels	Booster Pumps	Two Stakeholders commented in support of the proposed Version 2 levels for pressure cleaner booster pumps.	Thank you for your comment.
V2 Levels	Large Self Priming EL6	<p>Four stakeholders commented on the proposed Version 2 requirements for Self Priming Pumps. Three of the four stakeholders recommended that EPA strengthen the Version 2 Large Pumps Self Priming requirement to DOE Efficiency Level 6 (EL6), noting that the DOE EL6 was intended to cover all variable speed products, while eliminating all single and multi speed products. All three stakeholders commented that there were products already in the market across the hydraulic horsepower range that meet EL6, therefore consumer product availability should not be a significant issue.</p> <p>One of these stakeholders noted that EPA's more conservative treatment of the WEF calculation was the source of this difference, and based on DOE estimates, the product availability should be reasonable.</p> <p>The other stakeholders additionally commented that setting EL6 as a requirement would have the added benefit of preparing the pool pumps market for meeting the DOE 2021 standards through early adoption. One of these stakeholders further clarified that these requirements would both increase the market share of Variable Speed pumps ahead of the requirement, and would decrease costs due to economies of scale.</p>	EPA has reviewed the submitted comments and data, and is proposing to raise the large pump self priming requirement to DOE EL6 in this draft, since product availability according to submitted datasets will be sufficient at this requirement level. EPA welcomes stakeholder discussion on this topic.
V2 Levels	Non Self Priming	Two stakeholders expressed support for the Version 2 requirements for Non Self Priming pumps, noting that these levels were achievable and would provide consumers with significant energy savings.	Thank you for your comment.
V3 Levels	Booster Pumps	Two stakeholders expressed support for the Version 3 levels for pressure cleaner booster pumps. One stakeholder noted additionally that the Variable Speed requirement in Version 3 would encourage the market to develop more efficient booster pumps.	Thank you for your comment.
V3 Levels	Non Self Priming	Two stakeholders expressed support for the Version 3 levels for Non Self Priming pumps. One stakeholder noted additionally that this level would encourage the development and adoption of efficient Non Self Priming pumps.	Thank you for your comment.
V3 Levels	Self Priming	<p>Three stakeholders commented on the Version 3 Levels for Self Priming Pumps. Both stakeholders expressed support for the requirements corresponding to DOE Efficiency Level (EL) 7, noting that this level will encourage manufacturers to create even more efficient pump designs.</p> <p>One of these stakeholders noted additionally that there are multiple pumps on the market which can already achieve EL7, thus would not be a significant barrier for product availability long term.</p> <p>One stakeholder commented on the need to confirm the pump technology was approaching EL7 in advance of the V3.0 effective date. This ensures that the pool pump market is behaving as forecasted and the levels are neither too strict nor too easy for current products at that time.</p>	EPA will continue to engage industry to ensure that the products will be available in 2021 or earlier to consumers.

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Verification Testing		<p>One pump manufacturer commented that the verification testing requirements for the ENERGY STAR Pool Pumps specification could be quite expensive, ranging between \$2000 to \$4000 per pump tested.</p> <p>This stakeholder also requested clarification on whether ENERGY STAR was planning to adopt DOE Direct Purpose Pool Pumps (DPPP) enforcement requirements, which require 4 samples per model, or if ENERGY STAR was using a different sampling requirement for Verification Testing. This stakeholder recommended against adopting the DOE DPPP enforcement sampling requirements.</p>	<p>EPA notes that verification testing is an important component of the third-party certification program. EPA will continue to ensure that verification testing burden is as minimal as possible, while providing the necessary feedback to ensure confidence in the product performance metrics. The specifications for most products covered by DOE minimum efficiency specifications allow Partners to choose whether to test a single sample (two, in this case) for ENERGY STAR verification testing, or whether to test multiple samples as per DOE verification test regulations. We understand from our partners that there are good business reasons for each choice. We are currently clarifying whether the typical four sample option makes sense for DPPP, and will add it (at least for Version 3) if it does.</p>
General	Data	<p>One stakeholder commented on the data available to efficiency organizations on current pool pump products. This stakeholder requested that EPA supplement current product performance data with additional collected data from pool pump manufacturers, to inform efficiency calculations regarding WEF. This stakeholder also requested that EPA make available the savings per unit for pool pump products at the proposed levels, to allow stakeholders to estimate the impact of incentive measures in their programs.</p>	<p>EPA notes that tested product data for WEF values would be a valuable addition to the pool pumps dataset. EPA is open to discussing per unit savings on stakeholder request.</p>