

Organization	Topic	Summary of Comments	EPA Responses
EPA Summary and Response	Section 4: Connected Product Criteria	<p>One stakeholder suggested that EPA allow a label for 'ENERGY STAR Connected' Functionality.</p> <p>This stakeholder also requested consideration of ENERGY STAR as a service under which utilities or smart energy service providers would retrofit existing ENERGY STAR installations to meet the Connected Functionality requirements.</p>	<p>EPA has endeavored to keep ENERGY STAR a simple message to consumers that highlights cost-effective energy savings. EPA does not plan to consider a separate, additional label associated with connected functionality but will instead, inform consumers of these capabilities through the ENERGY STAR website.</p> <p>The ENERGY STAR Labeled Products program identifies products that offer significant savings to the end user as purchased and initially installed. Currently, EPA does not envision labeling of services that add connected functionality as a good fit for the ENERGY STAR Pool Pumps program.</p> <p>However, EPA may consider requests to reference the ENERGY STAR connected functionality criteria by entities that add Connected Functionality to existing installations.</p>
EPA Summary and Response	Section 4.2 Definitions	<p>One stakeholder suggested adding the following language to the CPPS definition: The consumer should be able to find a CPPS that allows Open Standard Communication on premises to distinguish from those CPPS that implement Open Standard Communication from their own / contracted cloud service.</p> <p>The same stakeholder suggested the removal of items 2 and 3 from the Open Standards definition. This stakeholder stated that utilities will only provide interfaces that are in the SGIP catalog of standards and by limiting allowable protocols to those published in the SGIP catalog of standards will enhance security.</p>	<p>EPA believes that continuing to mandate the use of open communications standards but indicating a preference (as opposed to a mandate) for products that enable on-premises open standards connectivity strikes a balance between divergent stakeholder comments and goals.</p> <p>EPA seeks stakeholder feedback as to the value of ENERGY STAR providing visibility as to whether a CPPS does or does not enable on-premises open standards connectivity (on the ENERGY STAR website - Product Finder advanced view). More specifically, this data could be requested as part of the product certification process (as a reporting requirement).</p> <p>By including standards identified by the SGIP, adopted by ANSI, or by International standards organizations, EPA has intentionally crafted the open standards definition to be broad enabling increased flexibility for manufacturers. As such, the draft 3 proposal maintains this definition, which is consistent with the approach in other ENERGY STAR product categories with optional recognition for Connected Functionality.</p>
EPA Summary and Response	Section 4.3: Communications	<p>One stakeholder suggested the removal of note 1 on Line 60, which provides explanatory language indicating that alternative approach of complying with Sec.4.3A and 4.3B only outside of consumer premises is acceptable. Stakeholder opines that products which only enable open-standards connectivity in the cloud will reduce consumer choice and utility adoption of Demand Response.</p> <p>A second stakeholder asked for a clarification of the term "outside of consumer's Premises"</p>	<p>EPA would like to clarify that Note 1 is explanatory and that the CPPS definition and Figure 1 encompasses both products that enable on-premises open-standards connectivity as well as products that only enable open-standards connectivity in the cloud. As such, EPA has elected to retain Note 1.</p> <p>Draft 3 continues to define "Premises" as land and the improvements on it. This definition infers that outside the consumer's premises is external to the consumer's dwelling and associated land. Section 4.3 Communications criteria apply equally to all CPPS regardless of whether they enables open standards connectivity on-premises or only in the cloud.</p>
EPA Summary and Response	Section 4.4: Energy Consumption Reporting	<p>One stakeholder suggested an addition to the Energy Consumption Reporting note that devices be enabled to locally log data at a certain time interval (x seconds) to support cloud diagnostics in the event of a failure or emergency operations.</p>	<p>EPA has been informed that transmitting versus local logging of historical energy consumption has different product cost impacts. In setting broad criteria that both enables implementation flexibility and allows manufacturers to control incremental product costs; EPA has elected not to add prescriptive criteria mandating local logging of energy consumption data.</p>
EPA Summary and Response	Section 4.5: Remote Management	<p>One Stakeholder requested further clarification regarding the mandatory remote management criteria.</p>	<p>Broadly speaking, the inclusion of remote management functionality is intended to enable both consumer convenience as well as energy management. While EPA continues to include Remote Management criteria in Draft 3, the Agency recognizes that Remote Management enables a granular level of control that, if used improperly, could impact pool chemistry or increase energy consumption. As such, Draft 3 continues to exclude both Remote Management and Peak Period Avoidance from the Section 4.3 Communications criteria to enable manufacturers and consumers to more selectively allow access to these capabilities.</p>

Organization	Topic	Summary of Comments	EPA Responses
EPA Summary and Response	Section 4.6: Operational Status, User Settings & Messages	<p>One stakeholder raised concerns that not all platforms will offer the scheduling information identified in 4.6 A.</p> <p>The same stakeholder asked how one would determine the content of the two messages relevant to optimizing energy consumption (4.6 B).</p> <p>A second stakeholder suggested 4.6.A.1.b be changed to "Actual or estimate rate of flow." since consumers cannot comprehend motor speed.</p>	<p>While scheduling capability is not required for a pool pump to earn the ENERGY STAR, EPA believes the ability for a connected pool pump system to follow a program schedule enables certain energy savings opportunities for these products. As such, the draft 3 CPPS criteria continues to require products be capable of communicating their program schedule.</p> <p>While Draft 3 retains the existing 4.6.A.1.b language, EPA notes that this data is not intended to directly inform the consumer, but rather to inform utilities and energy management systems or services as to current CPPS operational status. Further, as ENERGY STAR pool pumps may not be capable of providing estimated or measured flow rates, it is necessary to allow for either motor speed or rate of flow to be provided.</p> <p>Section 4.6 B requires the CPPS to provide at least two types of messages that can inform optimization of CPPS energy consumption. While the Draft criteria does include broad examples, manufacturers are encouraged to determine the number and types of messages that are most relevant to their product.</p>
EPA Summary and Response	Section 4.7: Peak Period Avoidance	<p>One stakeholder suggested the following modifications to the definitions in Table 2 Peak Period Operations Requirements: Table 2 (Line 118): Pump Type Single-speed Pump delete in allowable operation column 'no pumping shall be performed' and replace with 'Pump shall be allowed to operate for two hours in any sequence between 12 Noon and 6 PM.'</p> <p>A second stakeholder: - asked whether the CPPS is required to be a scheduler for daily operation - asked whether a DR Type 3 response takes precedence over Peak Period Avoidance</p> <p>One stakeholder commented that the EPA definition of peak isn't sufficient to capture the market diversity.</p>	<p>In response to stakeholder feedback, EPA is proposing revised Table 2 criteria for single-speed pumps that allows continuous or intermittent operation for a duration that does not exceed 1/3 of the avoidance period; e.g. ≤ 2 hours total run-time for the default 6-hour deferral period. The revised criteria better aligns with industry best practices as well as with the criteria for multi- and variable-speed pumps and will help to ensure maintenance of pool water health.</p> <p>While there are no explicit criteria requiring the CPPS to be a scheduler for daily operation, EPA expects that manufacturers may ship CPPS with a default schedule that complies with the Peak Period Avoidance criteria. As shipped pertains to the CPPS factory settings which may be freely modified by the installer or consumer. Consistent with this intent, 4.7 B ensures the consumer is empowered to modify peak period avoidance scheduling and functionality and 4.7 D ensures the CPPS retains its most recent settings thru nominal power interruptions (rather than requiring a default back to factory settings). Local settings changes as well as signals, based requests/commands; e.g. Remote Management, Demand Response; have priority over Peak Period Avoidance. In Draft 3, EPA has added clarifying criterion as 4.7 C.</p> <p>The CPPS must enable modification of peak period avoidance functionality by consumers and consumer authorized 3rd parties. Configurability of peak period avoidance is important to ensure timing of avoidance may be aligned with the needs of the local utility, as well as to ensure the consumer is empowered to modify or disable the functionality as they see fit. EPA recognizes that while there are significant drivers for a simple approach to peak period avoidance, there is not a "one-size fits all" period that aligns with regional and season peaks in all areas of the country. In addressing this concern, EPA encourages utilities to work with pool installers in their service territories in order to help ensure avoidance of regional peak periods is considered when pumps are scheduled. EPA is interested in stakeholder feedback as to how the agency could play a role in regards to associated messaging.</p>
EPA Summary and Response	Section 4.8: Demand Response	<p>One stakeholder commented that since OFF is an option for multi-speed pumps, the latency period in Table 3 should be extended to ≤ 300 seconds.</p> <p>The same stakeholder requested clarification of possible use cases for the Type 3 Response.</p> <p>The same stakeholder also asked how the consumer is protected if the utility decided to increase pump speed in order to benefit from the additional power consumption revenue.</p>	<p>In response both to stakeholder comments as well as follow-on discussions: for Draft 3, EPA is proposing: 1. removal of Demand Response latency criteria 2. revision to 4.8.A.1.d and 4.8.A.2.d to allow the CPPS to either delay its response or not provide a response if equipment damage would result or safety impacted. Through stakeholder feedback, EPA has been informed that while some utilities encourage near-immediate response times; there are practical limitations, in particular, where inclusion of cloud elements introduces variable network latencies.</p> <p>EPA seeks stakeholder feedback as to the value of ENERGY STAR providing visibility into CPPS response latencies on the ENERGY STAR website (Product Finder advanced view). More specifically, this data could be requested as part of the product certification process (as a reporting requirement).</p> <p>While a certain level of consumer protection is provided by 4.8.A.3.b, EPA recognizes that in order to enable energy benefits of Type 3 responsiveness such as increased penetration of variable renewable sources, such as wind and solar; a certain degree of flexibility is needed that was not offered by the criteria in Draft 1. As such, draft 3 limits changes to Type 3 to removal of latency criterion.</p>

Organization	Topic	Summary of Comments	EPA Responses
EPA Summary and Response	Section 4.9: Information to Installers and Consumers	One stakeholder suggested adding the following at the end of 4.9 Information to Installers and Consumers "Any such additional modules, services or infrastructure shall be based on open standards and has the potential to be sourced from multiple vendors or built in house by the manufacturers".	While EPA intends to ensure that all ENERGY STAR CPPS enable open-standards based connectivity; EPA has elected to provide significant implementation latitude to manufacturers. As such, while on-premises open-standards based access is indicated as preferred, other approaches are also acceptable. Similarly, while the specification mandates bi-directional communication, it does not specify how communications must be implemented. As such, so long as the Section 4.3 Communications criteria is met, the communications capability may be built-in, or modular or external. Modular communications may be proprietary or based on open-standards.
DOE Summary and Response	Demand Response Test Method	One stakeholder requested clarification regarding the type of network connection that should be used during testing and another proposed new language regarding the CPPS setup.	DOE is aware that the network connection used to connect the CPPS to a utility will vary depending on the utility and the manufacturer of the CPPS. As such, DOE does not want to require a specific connection type and has updated the test language to indicate that the connection used for testing shall be the connection type supported by the CPPS, as long as complies with the Open Standards Communication requirements.
DOE Summary and Response	Demand Response Test Method	One stakeholder requested that the test method specify that the Utility Equivalent Signal Generator (UECD) should be defined by the utility to ensure that the CPPS can be connected to the grid. The stakeholder also recommended adding additional requirements regarding specific communications between the CPPS and the UECD.	DOE and EPA believe that the Open Standards Communication requirements are sufficient to ensure that any CPPS will be able to connect to the grid. As such, DOE has not made any changes to the definition for the UECD. Any requirements regarding the communication between the signal generator and the CPPS should be addressed in the Connected Criteria. As such, DOE has not made any additional updates to the Test Method.
DOE Summary and Response	Demand Response Test Method	One stakeholder recommended that units should be altered to use a simpler connection type specifically for testing.	ENERGY STAR testing is performed in a unit's as-shipped condition to ensure the unit operates the same way in normal circumstances as during testing. As such, DOE has not updated the test method to require any product configurations specifically for testing.