

Residential Water Heater Version 3.0 Spec - Stakeholder Comments on Draft 1

Topic	Commenter	Comment	EPA Response
General			
Effective Date	NEEP, Rheem	We support aligning the effective date with the federal minimum standard effective date	Thank you for your comment.
Scope	AHRI, A O Smith	The “Note” beneath Table 3 indicates that EPA has an objective to combine the criteria for gas storage and gas instantaneous water heaters into a single set of criteria. Although this is not an issue for this draft, we must express our concern about this matter. We believe this objective is unobtainable.	EPA looks forward to engaging stakeholders in this discussion for future spec revisions.
	BWC, AHRI, APGA, A O Smith	We agree with EPA’s proposal to align the product categories with how the products will be segmented (e.g. splitting gas and electric storage at 55 gallons) due to NAECA III, which comes into effect on April 16, 2015.	Thank you for your comment.
	Rheem	Removing the capacity limit can create product hybrids that do not have a current test procedure and may not have a formal test procedure in place by the proposed ENERGY STAR® V3.0 compliance date of 4/16/15. Rheem asks the EPA to clarify its intent/definition or leave the definition as is until the new Uniform Energy Descriptor (UED) test procedure is finalized.	Products that cannot be tested to the test method in the spec cannot qualify for ENERGY STAR.
	ASAP, ACEEE, NRDC, NEEA	Regarding expanding the scope of the specification, we agree with and support EPA’s proposal to include water heaters with storage capacities between 2-20 gallons and light duty (commercial) water heaters used in residential applications.	Thank you for your comment.
General	NEEA	DOE is not moving at a similar pace and as EPA clearly states, many of the proposed elements of the specification, including definitions, metrics, and perhaps even the qualifying levels themselves will have to be adjusted in the wake of DOE’s publication of the Water Heater Test Procedure Final Rule. For this reason, we won’t spend much time commenting on these elements of the specification, but simply acknowledge and support EPA’s intent to adjust as necessary to the provisions of the Final Rule.	Thank you for your comment.
Gas Storage			
EF	AHRI, A O Smith, BWC, Rheem	In the case of gas storage models larger than 55 G, the proposed minimum EF of .80 is too high. Also the criterion should vary by volume size. As noted in the draft specification, there are no gas storage water heaters currently available that meet this proposed requirement. We do not agree with the conclusion that the revised federal standard going into effect in April 2015 will change this current situation. In the analysis that was done for the DOE final rule on the revised standards for residential water heaters, the EF value that was used to represent the “maximum technology” level was .77. We recommend that the level be specified at 4 points above the minimum standard for each volume size.	EPA has revised this proposal in the Draft Final specification to reflect additional information manufacturers shared with us about what they anticipate being attainable in practice for condensing WH in this size range.

	APGA	The current proposal would eliminate any current over 55 gallons natural gas water heaters from the ENERGY STAR® program and tilt the market 100% towards the electric water heater appliances.	See above comment response
	A O Smith, AHRI	Large gas storage WH EF should be volume dependent. Recommend that the level be specified at 4 points above the minimum standard for each volume size. This can be done by specifying the EF criterion as (.8412 - .00078V). Specifying the criterion to adjust for the volume is establishing an equitable requirement for each volume.	EPA would consider a volume dependent specification only based on different volume products providing different services to consumers. While there may be some truth to this, EPA will defer this discussion until test data is available from the new Uniform Descriptor test method, which will vary based on hot water delivery.
	Rheem	We do not support the EPA energy efficiency level revisions as proposed for the large capacity (>55 U.S. gallon) gas storage product category. The EPA in this Draft 1 specification sets the ENERGY STAR® gas storage water heater high efficiency threshold at 0.80EF. No larger capacity product currently exists in the market at or even close to this efficiency level. We recommend that a stretch target condensing criteria remain in place and support the values based on EF = (0.8312 – 0.00078V).	
Gas Instantaneous			
Scope	A O Smith	We understand and agree with the change to remove the 2 gallon limit from gas instantaneous units.	Thank you for your comment.
Criteria	Rinnai	From a consumer perspective, a gas water heater is a gas water heater whether or not this heated water comes from a gas storage tank or a gas instantaneous water heater. This consumer perspective supports a technology neutral approach to establishing ENERGY STAR levels, as was mentioned in the draft specification for a future revision, versus the segmentation approach being proposed. In following the direction of the Department of Energy in segmenting water heaters by construction type you are now completely ignoring a group of products that are more efficient (0.82 EF) than the efficiency level you have set for gas storage water heaters (0.67 EF).	EPA is interested in exploring further whether storage and instantaneous water heaters serve the same needs and have equivalent cost/benefit calculations in all situations. However, with a new test method poised to provide a fairer comparison of like products, EPA believes this is not the time to consider merging the requirements. Hence, the Draft Final maintains the separate requirements proposed in Draft 1.
	A O Smith	We agree with the criteria for gas instantaneous water heaters given in Table 3.	Thank you for your comment.
Light-Duty EPACT			
Max Standby Loss	AHRI, Rheem, Bradford White, A.O.Smith	The proposed revised maximum standby requirement for light duty EPAct covered gas water heaters is too drastic. It unnecessarily eliminates many Energy Star models. This is not a slight tightening of the criterion. When the energy consumption is estimated on a usage that is appropriate for storage models of this size and input, it becomes clear that the proposed revised standby loss requirement goes well beyond the point of providing annual energy use in residential applications similar to that of residential gas storage water heaters larger than 55 G. We recommend that EPA make no change to the standby loss criterion for light duty EPAct covered gas water heaters.	EPA engaged in extensive discussions with stakeholders on this topic, and has eased the standby loss requirements. The new levels are based on 1) the decision to change the requirement for large gas storage products and 2) a better understanding of industry practice in comparing annual energy use of units rated with TE to those rated with EF.

Definition	A O Smith	We also agree with the need to reexamine the specification when the federal test method is finalized, and support EPA's decision to retain the "light duty" EPACT definition for now. We do suggest, though (as we did in comments to DOE on the test method), that "light duty" be changed to "residential duty", as "light duty" commercial is a current term-of-art with a different meaning.	Thank you for your comment.
Connected Criteria			
General	AHRI, ASAP, ACEEE, NRDC, BWC, NEEA, NRECA, Rheem	We support the concept of "Connected Product" criteria. However, we do not support the proposal to include it in this draft specification at this time.	Thank you for your comment. EPA has removed connected criteria from the Final Draft. EPA will remain engaged with industry efforts to define requirements.
	NEEA	EPA should identify what it means by using "open standards".	If and when such requirements are part of the ENERGY STAR water heater specification, EPA will determine relevant definitions of open standards at that time.
	A O Smith	We are not sure that the proposed method of adding these criteria to the water heater specification benefits anyone (with the possible exception of utilities), especially the consumer. He/she will usually be making their purchasing decision based on operating efficiency (cost) and first cost of the heater.	Thank you for your comment.
Compressor Cycling	NRECA	Practically speaking, compressors and other moving parts of a heat pump water heater are designed with duty cycles consistent with longer run cycles. Attempting to "short cycle" the heat pump water heater circuit to take advantage of variable renewable energy production that often comes in shorter-term duration " events" would result in, at a minimum, dramatic reduction of life for these components and practically would result in loss of reliability due to short cycling of compressors.	EPA has removed connected criteria from the Final Draft, partly in response to concerns about the usefulness of grid responsive heat pump water heaters. We look forward to learning more as industry continues to build knowledge of grid-water heater interaction, and consumer interest in connected water heaters.
Electric Water Heaters			
General	A O Smith	We agree with the criteria for electric units given in Table 1.	Thank you for your comment.
EF	NEEP	Increase EF levels or consider developing Most Efficient 2015 category for water heaters.	Considering the limited availability of high efficiency electric water heater for use in emergency replacements, EPA will concentrate our efforts on the base ENERGY STAR brand. We do not feel that an ENERGY STAR Most Efficient category for water heaters addresses critical market barriers at this time.

	NEEA	If it is EPA's intent to award Energy Star status to all large electric water heaters after the new standards take effect, then this specification level is appropriate. However, if it is EPA's intent to award Energy Star status to the most efficient 25 percent of the products in the market (EPA's usual practice), then the stringency of this part of the specification will have to increase. We suggest that EPA make any adjustments to the EF requirement for large electric water heaters after DOE has published its Final Rule for the test procedure and the resulting metrics, and after DOE has done its "crosswalk" of the standards with the old metric to the standards with the new metric.	Currently there are very few products available above 2.2 EF, which would limit consumer's choice and selection. EPA will continue to monitor the product availability after the federal standards have gone into effect.
Scope	EEl	We are concerned that the draft specification may inadvertently exclude heat pump water heaters as currently written. Accordingly, a draft specification that excludes electric resistance water heaters technically could be interpreted as excluding heat pump water heaters that contain electric resistance elements for hybrid and backup operations.	The excluded electric resistance WH are those where water is heated primarily based on electric resistance. HPWH with secondary electric resistance elements are in scope.
	EEl, NRECA	ERWHs used for demand response programs provide benefits to the overall energy efficiency of the grid. Therefore, electric resistance water heaters designed for use in these programs should be able to qualify for an ENERGY STAR label so that customers can identify their benefit and utilities can incentivize their purchase.	Large electric resistance water heaters that can retain energy generated using renewable sources is in its infancy. As of now, the market is far too immature to create a set of criteria for such products.
Compressor Cut-Off Temperature/Noise	ASAP, ACEEE, NRDC, NEEA, NEEP	Reliance solely on a compressor cut-off temperature reporting requirement for heat pump water heaters is insufficient to ensure satisfactory field performance. We urge EPA to include compressor cut-off requirements and testing in the ENERGY STAR specification in the same or similar manner to that used in NEEA's Northern Climate Water Heaters Specification.	EPA encourages energy efficiency program sponsors in cooler climates to continue developing requirements in addition to ENERGY STAR certification that are appropriate to their climate.
	NEEP	ENERGY STAR needs to further explore ambient conditions of water heaters and the impacts of low ambient temperatures on performance.	
	NEEP	ENERGY STAR should consider requiring manufacturers to report the noise of their products during heat pump operation. Again, this information is being reported for the Northern Climate Specification and should not present any new testing burden. This would be yet another data point for stakeholders to use in determining promotion of certain HPWHs in certain situations.	EPA acknowledges this as a potential consumer acceptance issue, and is interested in hearing any analysis of field data showing it is not being addressed by manufacturers. If such information surfaces, EPA will consider adding a noise test in the future.
	NRECA	There is a significant noise issue associated with the heat pump water heaters if the system is located within the living area.	

Add-On Heat Pump Water Heaters			
General	NEEA	We believe that the term “add-on heat pump water heater” is inappropriate for describing the function of what should be referred to as a “split system heat pump water heater.” Because there is no federal test method for these products, we acknowledge the difficulty in including them in EPA’s current specification. However, we strongly suggest that EPA more appropriately define these products as “split system heat pump water heaters” rather than “add-on heat pump water heaters.”	A key issue with "add-on" heat pump water heaters is that the tank is not supplied with the compressor at the time of sale, and is warranted separately. Split systems with all components (compressor and tank) sold by one company under a single model number are in scope of the current specification, and of Version 2 as proposed.
Tech Neutrality			
Electric/Gas Equity	APGA	The current proposal fails to recognize the average natural gas water heater is nearly 50% cheaper to operate on a yearly basis when compared to a similar electric water heater.	EPA compares costs of purchase, installation and operation within fuel types for the purpose of setting levels. While most consumers do not have a choice about which fuel type to use, where they do, our marketing materials may note environmental and cost benefits of some fuels over others.
Electric/Gas Equity	EEL	On the matter of equity, the proposed levels are especially unfair as electric water heaters will have to improve efficiency much more than other competing products when comparing the Department of Energy’s (DOE’s) minimum efficiency standards to EPA’s proposed ENERGY STAR requirements. EEL proposes that any electric storage water heater with an Energy Factor that is greater than or equal to 0.96 EF receive an ENERGY STAR label.	EPA evaluates the available range of efficiencies, along with their costs and savings for consumers, separately for different fuels.
General	APGA	The current practice of using site (or point-of-use) measurement fails to account for the impacts between the processes of energy extraction through delivery to the point of final consumption, when comparing energy use intensity of optional fuels.	EPA uses site energy comparison in setting requirements because consumers pay for site energy.
Warranty			
General	AHRI, Rheem, Rinnai	We request that the warranty requirements for all models be deleted from the Version 3.0 specification.	Warranties address consumer concerns about the durability of high efficiency products. EPA will retain the warranty requirements, but has adjusted them to be more equitable between technologies.