

ENERGY STAR® Version 5.0 Residential Water Heaters Draft 1 Specification Stakeholder Comment Response Matrix

Topic	Stakeholder	Subtopic	Comment Summary	EPA Responses
Gas storage criteria	Summary	Program Guiding Principles	<p>Two stakeholders argued that EPA is not following the <i>ENERGY STAR Products Program Strategic Vision and Guiding Principles</i> because there are no products available that meet the proposed gas-fired storage criteria.</p> <p>One stakeholder claimed that aspirational criteria jeopardize incentive programs and goes against ENERGY STAR's role of supporting consumers by helping them choose efficient products.</p> <p>One stakeholder argued that ENERGY STAR guiding principles are meant to serve the program, not constrain it, and it is not unprecedented for an ENERGY STAR specification to be published with no models on the market meeting the criteria. Given the context of an administration that is committed to decarbonization and the size of the emissions reduction for water heaters, the stakeholder believe that EPA is fulfilling their strategic vision.</p>	EPA reminds partners that the Guiding Principles are not a simple checklist. In cases such as this one, where there are no levels that meet all the guiding principles, EPA has in the past set levels no products can meet, when we feel that supports the best path for consumers, product manufacturers, and the environment.
Gas storage criteria	Summary	Impact on Low-Income Consumers	<p>One stakeholder points out that publishing criteria at a level with no models commercially available runs the risk of ending incentives programs, likely to impact low-income and underserved communities the most.</p> <p>One stakeholder points out that fuel switching (from gas to electric) mandates costly renovations. When coupled with the removal of efficiency incentives programs due to no gas-fired models meeting ENERGY STAR requirements, this can heavily impact low-income communities, leading to purchasing low cost, low efficiency models.</p>	EPA shares partners' concerns about the effect of decarbonization on low-income consumers. We are actively working with utilities and state and local governments to support these consumers for a just transition. Setting levels that some gas products in the market can meet will allow rebates to continue in areas where that is important, as decarbonization options improve and become more familiar.
Connected Criteria	Summary	General	<p>One stakeholder strongly discouraged EPA from making connected criteria mandatory.</p> <p>One stakeholder recommended making the connected criteria a requirement for all electric water heaters to support the use of water heaters as thermal storage devices to support the grid.</p> <p>One group of building industry professionals urged for the inclusion of digital connectivity requirements to allow water heaters to be controlled to operate in off-peak hours in order to reduce energy cost and impacts to the electric grid.</p>	EPA shares partners' vision of the potential for connected water heaters to shift load as a grid balancing resource. However, we do not think now is the time to require connectivity, when there is so much consumer and environmental benefit from adopting high efficiency non-connected water heaters in jurisdictions that aren't ready to take advantage of load shifting.
Connected Criteria	Summary	Open Standards Referenced	<p>One stakeholder recommended that the option for recognizing products as connected through Open-ADR be reduced to only CTA 2045 standard under the "DR Communications Protocols" because that is the consensus in the water heating industry.</p> <p>One stakeholder recommended that the standard connectivity protocol should reference CTA 2045-b instead of CTA 2045-a because of considerations for load up and shed functionality in order to support grid connectivity.</p>	EPA is confident that as industry standards develop, EcoPort (a.k.a. CTA-2045) will become the default for connected water heaters. EPA considered specifying CTA-2045-b, but would prefer to wait for the market to provide updated connections naturally.

Electric Criteria	Summary		One stakeholder supported no changes to the electric water heater criteria.	EPA appreciates this input.
Other	Summary	Refrigerants	<p>One stakeholder recommended recognition of end-of-life impacts of refrigerants. They noted that AHRI is addressing this topic in HVAC systems and suggest a GWP ≤ 750.</p> <p>One stakeholder discouraged EPA from including requirements for refrigerants if it dramatically increases the cost of heat pump water heaters because they believe it is counterproductive to wider scale adoption of heat pump water heaters.</p>	EPA is closely following the development of low-GWP heat pump water heaters and has started distinguishing products on our product finders with such. However, the benefits of energy efficiency in the use phase still far outweigh the impacts of refrigerant from manufacture and end of life, so we will continue to encourage heat pump water heaters with current refrigerants.
Other	Summary	Compressor Cut-off Temperature	One stakeholder recommended requiring reporting a compressor cut-off temperature limit to provide information to inform installations in garages and attics.	EPA understands the value of this information in hot climates, however adding a requirement to report at this time would add undue burden for manufacturers of heat pump water heaters. EPA has added optional reporting and will display whatever is reported on the product finder.
Other	Summary	NRCan	One stakeholder encouraged ENERGY STAR Canada to conduct analysis specific to Canada to validate the conclusions from the US EPA.	EPA has passed this request to Natural Resources Canada.
Other	Summary	Safety Standard	One stakeholder questioned if ANSI Z21.10.1/CSA 4.1 is the correct safety standard for gas-fired heat pump water heaters.	EPA has deferred this question in light of the lower condensing efficiency levels in this draft.
Other	Summary	Power Source	<p>One stakeholder believed ENERGY STAR should not favor one technology over another or one source of energy over another. Two stakeholders noted recent improvements in renewable natural gas and other promising gas alternatives.</p> <p>One stakeholder asked if EPA is trying to reduce carbon emissions or electrify, stating that non-renewable imports serving incremental load have a higher emissions factor than renewables gas. They recommended an ecolabel for renewable gasses.</p> <p>Four stakeholders encouraged EPA to remove fossil fuel water heaters from the ENERGY STAR program to reduce greenhouse gas emissions and because heat pump water heaters are significantly more efficient contributing to less pollution (even on a fossil-fuel based grid), where gas water heater efficiency has not increased in the last two decades.</p> <p>Over 130 stakeholders encouraged EPA to phase out the use of gas appliances.</p>	EPA appreciates the thoughtful and passionate comments received on this point. Given the information we now have, we anticipate that decarbonization will eventually mean relying on electricity for water heating. However, given the current state of the market and of the grid, we are confident there is currently a place for gas water heaters in the program. In addition, we remain open to advances that would change our understanding of what decarbonizing water heating requires.
Other	Summary	NOx Emissions	One stakeholder recommended adding a low NOx emissions requirement of 10 ng/J.	EPA will not add requirements associated with gas water heaters, which we believe will make sense to sunset in the near future.

Most Efficient	Summary		<p>One stakeholder suggested that EPA use the Most Efficient platform to recognize and promote gas-fired heat pump water heaters.</p>	<p>If and when the market advances such that most water heater sales are ENERGY STAR labeled products, EPA will consider using Most Efficient to promote further gains.</p>
Timeline	Summary		<p>One stakeholder requested more time before the proposed criteria go into effect, as 14 months would take away from current offerings and potentially reduce energy and carbon savings.</p> <p>One stakeholder requested that EPA not update this specification any sooner than every two years to allow manufacturers, the water heating market, and utility rebate programs time to adjust.</p>	<p>EPA appreciates change in the water heating market has suddenly accelerated. We will strive to limit back-to-back revisions in the future.</p>