

ENERGY STAR Residential Water Heaters Draft Version 3.1 Comment Matrix

Topic	Stakeholder Comment Summary	EPA Response
<u>UEF Efficiency Metrics</u>		
Proposed UEF Metrics	All commenters were generally in favor of the proposed UEF-related efficiency and performance criteria; however, two commenters indicated that the proposed first hour rating for electric storage water heaters and the UEF for gas water heaters larger than 55 gallons with a medium draw pattern did not reflect the conversion results.	EPA agrees that, due to rounding requirements specified by 10 CFR 429.17, the value for first hour rating of electric storage water heaters (in terms of UEF test method) should be 45 gallons, not 46 gallons; this is reflected in the final specification. In order to maintain differentiation with DOE standard levels for gas storage water heaters larger than 55 gallons with a medium draw pattern, EPA is maintaining 0.78 UEF. The DOE minimum UEF for this category is 0.77 for water heaters ranging from 56 to 61 gallons. To ensure that the single ENERGY STAR UEF level allows for differentiation of all products in this category, EPA will maintain the slightly more stringent 0.78 UEF.
Suggestions for Further UEF Criteria Development	One commenter suggested that EPA should provide UEF criteria for all draw patterns for each ENERGY STAR water heater category. Another commenter suggested increasing the stringency of the electric storage efficiency criteria.	In an effort to maintain a simple specification for ENERGY STAR Water Heaters, EPA chose to only provide UEF levels based on draw patterns for gas storage water heaters. This was necessary to maintain differentiation of these products from the DOE standard UEF levels for all sizes in this category. EPA recognizes the opportunity to revise the stringency of electric storage UEF levels, and will address it in the next major specification revision.
<u>Critical Fault Alarm</u>		
Critical Fault Alarm Criteria	Two commenters were not supportive of the proposed critical fault alarm criteria, while one commenter supported the proposed criteria as long as it is optional.	EPA appreciates the comments regarding the critical fault alarm requirement. EPA has concluded that more time is needed to define a useful criteria, and thus has removed the optional criterion from the final specification. Feedback regarding connected water heaters led EPA to conclude that addressing fault detection as an element of a more comprehensive look at connected functionality would be more effective. EPA is pleased to hear that industry is trending toward fault recognition and alarms, and looks forward to further discussion during the development of Version 4.0.
Critical Fault Alarm Definition	One commenter suggested updating the definition of critical fault alarm to include "An audible alarm or both an audible alarm and push notification..." and that the alarm will be "...indicating the water heater is likely to stop functioning at its rated performance level within 4 weeks."	EPA appreciates the suggested edits to the critical fault alarm definition and will consider these updates upon future analysis of critical fault criteria. At this time, EPA has decided not to adopt the critical fault alarm criteria.
<u>Future Considerations</u>		
Single UEF Level for Gas-fired Storage and Instantaneous	One commenter asserted that a single level for all gas-fired water heaters (storage and instantaneous) would not be appropriate for future consideration because the type of water heater is often chosen based on factors other than the "service" it offers.	Thank you for your comment. EPA will take this comment into consideration for upcoming revisions and will follow up with stakeholders accordingly.

Connected Criteria and Grid-enabled Water Heaters	Most commenters were very supportive of including connected criteria in a future specification revision, if not now. One commenter suggested that EPA consider requiring CTA 2045 for future connected criteria. These commenters also advocated for the inclusion of grid-enabled water heaters in the ENERGY STAR specification. One commenter was not supportive of including connected criteria in a near future revision.	EPA appreciates the comments and general interest in connected criteria and grid-enabled water heaters in the ENERGY STAR specification. EPA hopes to have extensive stakeholder discussion of this topic prior to the next specification revision. EPA has not included electric resistance products (including grid-enabled) in scope because their unit efficiency is significantly lower than that of heat pumps.
Solar Fraction Metric	One commenter suggested that EPA adopt the Solar Fraction (SF) metric instead of SEF for solar water heaters.	EPA feels that SEF is the better measure of solar water heater efficiency, but is more than willing to participate in further discussion with stakeholders. Adoption of the Solar Fraction metric was not considered for this amendment as an effort to ensure no products are removed from the ENERGY STAR list of qualified products.
General		
Document Formatting	One commenter stated that the formatting of the draft specification is confusing and recommends splitting the document into two parts, one pertaining to EF and one pertaining to UEF. The commenter also mentioned that the EF, TE, and SL criteria will be sunset on June 12, 2017.	EPA appreciates that the document formatting may be confusing. In an effort streamline the document and avoid repetitive definitions, criteria, etc., EPA chose to format the document with an Appendix A pertaining only to new information related to UEF criteria and the test method for UEF. The specification document is intended for industry use. EPA will provide a clear outline of efficiency criteria to consumers on EPA's consumer-facing key product criteria webpage. Also, EPA plans to promote DOE's consumer brochure which documents the differences between EF and UEF. The section including EF, TE, and SL requirements retains important information for stakeholders that have certified water heaters to these criteria in the past. Water heaters certified to these criteria will remain certified.
Products Previously Certified to EF Criteria	One commenter stated that tested products may have UEF values lower than the converted UEF values proposed as ENERGY STAR criteria. The stakeholder would like clarification that these products would not fall off the list of qualified products under this Version 3.1.	Products that are currently certified as ENERGY STAR using Energy Factor (EF) will remain certified, no matter their tested or converted Uniform Energy Factor (UEF) value. If a product was originally certified using EF, any verification test would be checked against that EF value. For products that are newly certified using UEF values, verification testing will be checked against UEF values. Not until ENERGY STAR publishes the next full revision (i.e., Version 4.0) will all water heaters be required to meet the UEF criteria in the specification based on tested values.
Align with DOE Source Estimates	One commenter suggests that EPA considers source energy in setting ENERGY STAR specification criteria and should adopt an approach to reflect the continued transformation of the generating fleet and energy grid by utilizing the source estimates recently adopted by DOE.	EPA appreciates the insight, but would like to clarify that the Agency does not consider source energy in setting ENERGY STAR criteria. ENERGY STAR criteria are set based on site energy.
Scope Expansion for Electric Water Heaters	One commenter suggested that EPA should consider expanding the scope of the ENERGY STAR specification to include, at least in part, electric resistance storage, electric resistance table-top, grid-enabled electric resistance, and instantaneous electric resistance water heaters.	EPA excludes electric-resistance water heaters due to their limited unit efficiency when compared to heat pumps, and lack of differentiation in efficiency among electric resistance models.