

# ENERGY STAR® Most Efficient 2022 Stakeholder Comments

| Topic                  | Comment Summary  | EPA Responses   |
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| <b>General</b>         |  |   |
| Gas Phase Out          | <p>Nine stakeholders urge EPA to withdraw any proposed criteria for gas-fired products to support the 2050 net-zero economy goal.</p> <p>Seven stakeholders claim that inclusion of gas products is inconsistent with the goals and message of Most Efficient, and that removing their recognition would be welcomed by the Most Efficient target audience.</p> <p>Two stakeholders insist that if not done this year, EPA should phase out gas products from ESME for 2023.</p> | <p>EPA received comments from nine commenters recommending that the Agency discontinue ENERGY STAR Most Efficient recognition of products that use gas to: help achieve President Biden's 2050 net-zero economy goal, to protect consumer health, and better appeal to the Most Efficient target audience - environmentally-conscious consumers. At the same time, commenters pointed out several technical challenges associated with continuing to recognize the most efficient in these categories. For example, for multiple years now, gas dryers have failed to earn Most Efficient recognition even at the current level which is less rigorous than that applied to electric models. For gas furnaces, further differentiation is not meaningful, absent the feasibility of furnaces with greater than 100% efficiency. Lastly, while EPA proposed a gas heat pump level for boilers, comments made clear that the proposed test method does not cover the common application of space heat plus water heating, and that the proposal presented a disincentive for other attractive technologies with &gt;100% efficiency. Given the stakeholder feedback and these challenges, EPA has decided to suspend ENERGY STAR recognition gas Dryers, Boilers, and Furnaces in 2022 and will continue to monitor relevant market developments.</p> |
| Product Categorization | <p>One stakeholder recommends that ESME categories center around the end-use (e.g., space heating or clothes drying) instead of product types so consumers can see which products are the more efficient option for a particular task instead of in relation to their peers.</p>   | <p>To the extent practical, EPA favors this approach. Historical market divisions and technical features sometimes prevent consumers from making comparisons between all products that can serve the same function - for instance, some consumers with a gas boiler will not consider an electric heat pump as the same product. In addition, available test methods do not always yield results that are directly comparable. As we move into a time of disruption and change in many heating applications, EPA will continue to participate in efforts to make such comparisons more possible.</p>  |

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| Analysis           | <p>One stakeholder considers the process for establishing criteria inconsistent with EPA's Guiding Principles for the ENERGY STAR program and the Standard Operating Procedure for Revising or Establishing an ENERGY STAR Product Specification because EPA offers little or no supporting analysis or data on level, including payback analysis.</p> | <p>ENERGY STAR Most Efficient is designed to identify and advance highly efficient products in the marketplace. ENERGY STAR Most Efficient compliments the base ENERGY STAR program, identifying for a set of early adopter consumers and energy efficiency program sponsors, the most energy efficient of the ENERGY STAR certified products. Recognizing the nature of highlighting the most efficient, cutting edge products, EPA completes annual reviews/revisions to ensure the Most Efficient program recognizes the best of ENERGY STAR for the segment of the market that prioritizes efficiency foremost. EPA posts supporting data for the proposed criteria for new proposals on the recognition criteria development webpage and also shares the rationale for proposals in the stakeholder webinar. Supporting data for levels that were new in the past can be found in the historical criteria development webpages.</p> |
| Criteria           | <p>One stakeholder supports all the proposed criteria.</p>   | <p>EPA thanks the stakeholder for these comments.</p>  |
| <b>Dishwashers</b> |  |  |
| Test Procedure     | <p>One stakeholder expressed concern that the test method that is the basis for the ENERGY STAR Most Efficient cleaning performance criteria is not repeatable and reproducible enough for use in the underlying specification. Therefore, it should not be used for the ENERGY STAR Most Efficient program either.</p>                                | <p>EPA thanks the stakeholder for their feedback. EPA has not yet proposed the 2022 ENERGY STAR Most Efficient criteria for dishwashers because the ENERGY STAR dishwasher specification is currently under revision. The proposed Most Efficient criteria will be shared with stakeholders for comment once the ENERGY STAR specification revision nears completion.</p> <p>EPA plans to maintain the cleaning performance minimum requirement and the use of the cleaning performance test procedure as part of the Most Efficient criteria. EPA maintains its views that the cleaning performance test procedure has acceptable repeatability and reproducibility, and EPA is confident that as more and more models are tested using the cleaning performance test procedure, labs will continue to improve on repeatability and reproducibility.</p>  |

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| Criteria               | <p>One stakeholder opposed EPA's proposed performance criteria and reporting for dishwashers in the ENERGY STAR Most Efficient program. They stated that EPA should ensure that the specification levels they select do not threaten performance.</p>  | <p>As a voluntary program, ENERGY STAR is successful only as long as consumers have a positive association with the label. On occasion, requirements are added to prevent trade-offs between efficiency and performance. The need to ensure performance takes on added significance in context of ENERGY STAR Most Efficient where the levels are more stringent. EPA has not yet proposed 2022 ENERGY STAR Most Efficient criteria for dishwashers. The proposed criteria for dishwashers is expected to be shared with stakeholders once the associated ENERGY STAR specification revision nears completion.</p>   |
| <b>Clothes Dryers</b>  |  |  |
| Gas Phase Out          | <p>Six stakeholders suggest that the electric dryer criteria exclude gas dryers from scope because no models can meet the proposed level or compete with Most Efficient electric dryers.</p>   | <p>EPA agrees that gas dryers have been unable to earn Most Efficient recognition despite a less rigorous level than that applied to electric models for multiple years. With this technical reality in mind and in light of the Administration's priorities, EPA will suspend recognition of gas dryers in 2022.</p>  |
| <b>Clothes Washers</b> |  |  |
| Test Procedure         | <p>One stakeholder expressed concern that the test method as the basis for the ENERGY STAR Most Efficient cleaning performance criteria is not repeatable and reproducible enough for use in the underlying specification. Therefore, it should not be used for the ENERGY STAR Most Efficient program either.</p> | <p>EPA has been using the ENERGY STAR Test Method for Determining Residential Clothes Washer Cleaning Performance test procedure since 2019 for ENERGY STAR Most Efficient criteria. In response to the concerns specific to the Department of Energy's (DOE) test method, the program notes that the referenced test method is based on AHAM's HLW-1-2013 test method, which reflects decades of testing and experience. By mirroring the existing AHAM test method, the ENERGY STAR program is leveraging the existing laboratory capabilities and expertise within the clothes washer industry. EPA has maintained the cleaning floor and the associated test method in the final recognition criteria.</p> |

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| Criteria | One stakeholder opposes the proposed performance criteria because they do not believe the test procedure is repeatable or reproducible. They suggest EPA sets criteria to not threaten performance.  | As a voluntary program, ENERGY STAR is successful only as long as consumers have a positive association with the label. On occasion, requirements are added to prevent trade-offs between efficiency and performance. The need to ensure performance takes on added significance in context of ENERGY STAR Most Efficient where the levels are more stringent. EPA has included a maximum load cleaning score criteria since 2019 for ENERGY STAR Most Efficient. |
| Scope    | One stakeholder requested for the scope to be inclusive of combination all-in-one washers and dryer air-cooled only mode as they are now recognized and certified through the ENERGY STAR Clothes Washer specification after a recent scope expansion. | As with ENERGY STAR, EPA acknowledges that this product type serves an important place in the market. As such, EPA will expand the scope to include combination all-in-one washer-dryer air-cooled only models, with the requirement that the product also must meet the Most Efficient Clothes Dryer criteria except for the time requirement.   |

**Consumer Refrigeration Products**

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| Criteria        | <p>Three stakeholders support the criteria and support increasing the criteria for compact refrigerators and refrigerator-freezers to 30% more efficient than the federal standard.</p> <p>Two stakeholders that support the proposed criteria do so because it aligns with the current Emerging Technology Award for Advanced Adaptive Compressors. They requested low-GWP refrigerant and insulation reporting requirements for ENERGY STAR Most Efficient 2022 to support utilities that use low-GWP and carbon offset metrics because this information was required as part of the Emerging Technology Award and is critical to achieving carbon offsets and low-GWP adoption goals. They suggest requiring natural refrigerants for ENERGY STAR Most Efficient 2022 side-by-side and bottom freezer refrigerator-freezers and standard size freezers.</p> <p>One stakeholder requested the criteria be set to 25% more efficient than the federal standard instead of the proposed 30% because of a concern that the requirement may inadvertently result in only smaller-sized refrigerators being qualified for Most Efficient 2022.</p> | <p>EPA thanks stakeholders for these comments.</p> <p>EPA will not be requiring refrigerant or insulation reporting for ENERGY STAR Most Efficient 2022. EPA will propose mandatory refrigerant reporting and consider insulation reporting in conjunction with the next revision of the ENERGY STAR specification because EPA believes it would be more useful to consumers and other users of ENERGY STAR product finder to have refrigerant and insulation reporting required for all ENERGY STAR products. There is also precedent in requiring refrigerant reporting by ENERGY STAR, which requires refrigerant reporting for commercial refrigeration products.</p> <p>Reporting of refrigerant information will remain encouraged, but not mandatory, for ENERGY STAR Most Efficient 2022.</p> <p>EPA will change the criteria to be 27% more efficient than the federal standard. Using calculated data with a 5% cushion, 18 models (~3% of models) from 15 brands can meet this level. EPA anticipates that 30% more efficient than the federal standard or higher will be appropriate for the following year.</p> |
| Test Procedure  | <p>One stakeholder requests EPA and DOE develop a test procedure more representative of real world use to be used in ENERGY STAR Most Efficient and ENERGY STAR recognition.</p>  | <p>EPA thanks stakeholders for these comments. EPA will discuss changes to the test procedure with DOE.</p>  |
| <b>Monitors</b> |   |  |
| Test Method     | <p>One stakeholder recommends that EPA investigate whether adopting the new CTA-2037C test method for TVs would be appropriate for monitors.</p>  | <p>EPA will evaluate if the application of CTA-2037C test method for TVs is appropriate for monitors in parts or completely and accordingly conduct the typical test procedure review process where its benefitted from stakeholder inputs and feedback.</p>   |

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| Criteria                     | Three stakeholders support the updated criteria levels, indicating that ESME is increasingly important as the number of models meeting current criteria has doubled in the past year.  | EPA thanks stakeholders for these comments  |
| <b>Room Air Conditioners</b> |  |   |
| Criteria                     | <p>Three stakeholders support the updated criteria levels, with one indicating that ESME is increasingly important as more efficient models enter the market.</p> <p>One stakeholder insists that EPA needs to publish data to justify additional criteria, pointing out the 45 dB(A) sound limit for room air conditioners as an apparently arbitrary benchmark.</p>  | <p>EPA thanks stakeholders for these comments.</p> <p>It is critical to ensure that ENERGY STAR and ESME recognized products do not sacrifice a quality experience in exchange for energy savings, which is insured through additional criteria such as a sound floor.</p>  |
| <b>Furnaces</b>              |  |   |
| General Support              | One stakeholder supports the maintenance of criteria levels and the added focus on installation quality and maintenance.   | EPA thanks stakeholders for these comments.   |
| Gas Phase Out                | <p>One stakeholder recommends that EPA withdrawal gas-fired furnaces from ESME as the market already consists of a large number of products that meet ENERGY STAR and ESME requirements.</p> <p>Six stakeholders argue that there is no reason to recognize gas-fired furnaces as there are plenty of electric options meeting ESME criteria. They also claim that ESME certified gas products are far less efficient and produce significantly more emissions than other space heating options.</p> | EPA notes that further differentiation for furnaces is not meaningful, absent the feasibility of furnaces with greater than 100% efficiency. Given the stakeholder feedback and these challenges, EPA has decided to suspend ENERGY STAR recognition of these products in 2022 and will continue to monitor relevant market developments. |
| <b>Boilers</b>               |  |   |

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| Criteria | <p>One stakeholder does not believe that the proposed ESME criteria will recognize the "best of the best" Residential Boilers and insist that the criteria will incentivize investment in only one gas-based technology. This is partially due to the criteria being applicable to gas-fired products and little differentiation in the performance of traditional boiler-only products.</p> <p>One stakeholder recommends that EPA reconsider the ratings given to heat-pump/boiler combination models because there is no clear way to compare these models to boiler-only models. They suggest that comparing these two product types will lead to further confusion when considering that some combination models offer space conditioning features, which is not accounted for by the test method.</p> <p>One stakeholder likes that EPA is trying to align ESME levels with Consortium for Energy Efficiency (CEE) levels as a general practice but believes that the CEE level is inappropriate for ESME to align with at this time due to unresolved industry concerns.</p> | <p>EPA has decided not to reintroduce recognition of Boilers for Most Efficient in 2022, but will consider the detailed and helpful feedback provided when reviewing the ENERGY STAR Boilers specification, hopefully in 2022.</p> |
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| <p>Test Method</p>          | <p>One stakeholder claims that there is no procedure to measure an AFUE above 100% for boilers so does not support setting levels above 100%.</p> <p>One stakeholder is concerned that manufacturers would not be able to provide consumers with information about AFUE ratings above 100% because the federal test procedure cannot measure such.</p> <p>Two stakeholders do not think the referenced ANSI Z21.04 can be applied to products listed as Residential Gas Fired Boilers because it is intended for use in measuring the efficiency of heat pumps that also provide some year-round space conditioning features. As such, they believe it should not be referenced for the determination of compliance against ESME criteria.</p> | <p>EPA will not reintroduce Boilers to the Most Efficient portfolio in 2022 but will pursue this feedback in the context of an ENERGY STAR specification revision.</p>                                     |
| <p>Gas Phase Out</p>        | <p>Six stakeholders do not believe that the proposed ESME level (120% AFUE) is high enough to rationalize awarding a gas-based technology when products such as geothermal heat pumps provide a similar service far more efficiently and with far less emissions.</p> <p>One stakeholder supports the addition of a Residential Boilers ESME performance level.</p>  | <p>Given the preponderance of stakeholder feedback and the difficulty in recognizing all promising products equitably, EPA has decided not to recognize Boilers for Most Efficient in 2022.</p>            |
| <p>Specification Update</p> | <p>One stakeholder recommends that EPA revise the Residential Boiler specification to bring dual fuel and electric heat pump systems within scope while also incorporating additional efficiency measures such as COP.</p>   | <p>EPA will consider this approach when reviewing the ENERGY STAR Boilers specification, hopefully in 2022. EPA requests information on test methods for all boilers that provide &gt;100% efficiency.</p> |
| <p><b>Ceiling Fans</b></p>  |  |  |



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| Criteria                     | Three stakeholders support the ceiling fan criteria with two indicating that there seems to be a wide range of efficiency levels for ESME fans of a given size.   | EPA thanks stakeholders for these comments. |
| <b>CAC/ASHP</b>              |   |   |
| Criteria                     | <p>Three stakeholders support EPA's decision to align ESME levels with Version 6.0 levels and two support encouraging manufacturers to certify to Version 6.0 early.</p> <p>One stakeholder supports the added requirement to store the most recent faults until cleared by a service professional.</p> | EPA thanks stakeholders for these comments. |
| <b>Geothermal Heat Pumps</b> |   |   |
| Criteria                     | One stakeholder supports the maintenance of criteria levels and the added focus on installation quality and maintenance.  | EPA thanks stakeholders for these comments. |
| <b>Water Heaters</b>         |   |   |
| Criteria                     | One stakeholder recommends that EPA create ESME criteria for gas and heat pump water heater products.   | EPA thanks stakeholders for these comments. |
| <b>Ventilation Fans</b>      |   |   |
| Criteria                     | One stakeholder supports maintaining the 2021 ESME criteria and appreciates EPA's encouragement to report noise data.   | EPA thanks stakeholders for these comments. |