

October 17, 2018

Ms. Ann Bailey
US Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Ms. Bailey:

The Consortium for Energy Efficiency (CEE) respectfully submits the following comments in response to the Draft 2019 ENERGY STAR® Most Efficient Criteria, released by the Environmental Protection Agency (EPA) on July 30, 2018.

CEE is the binational organization of energy efficiency program administrators and a staunch supporter of the ENERGY STAR Program. CEE members are responsible for ratepayer-funded efficiency programs in 38 US states, the District of Columbia, and four Canadian provinces. In 2016, CEE members directed over \$7 billion of the \$8.8 billion in energy efficiency and demand response program expenditures in the two countries. These comments are offered in support of the local activities CEE members carry out to actively leverage the ENERGY STAR brand. CEE consensus comments are offered in the spirit of strengthening ENERGY STAR so it may continue to serve as the national marketing platform for energy efficiency.

CEE highly values the role ENERGY STAR plays in differentiating energy efficient products and services that the CEE membership supports locally throughout the US and Canada. We appreciate the opportunity to provide these comments.

CEE Recognizes Differences in CEE Tier and Most Efficient Objectives

In providing comments on the 2019 Most Efficient Criteria and identifying opportunities for alignment, CEE acknowledges the differences between CEE tier definitions and the recognition principles of the Most Efficient Criteria.

CEE Tier 2 and 3 designations are intended to provide significant per unit savings above and beyond the preceding tier and reflect the performance of products already available from numerous manufacturers. Though eligible products may be available at higher price points, these performance tiers are intended to yield cost-effective energy savings. A CEE Advanced Tier represents an aspirational level of efficiency and product performance that manufacturers agree is technically feasible. While few or no products may fulfill the Advanced Tier specification at the time it is created, and those that exist may not be appropriate for all applications, it lays the groundwork for future programs. It provides a longer-term focus, creates a consistent goal for the market to move towards, and provides recognition for the first manufacturers to develop products that achieve new heights of efficiency and performance.

Most Efficient is designed to recognize performance that is truly exceptional, aspirational, and leading edge so that it is consistent with the interests of early adopters. The Most Efficient program is structured to recognize products that deliver top performance regardless of geography and climate and are available from more than one manufacturer, though not necessarily available for all configurations or in the largest sizes.

While the underlying basis for CEE Tiers and ENERGY STAR Most Efficient is consistent, it isn't identical. While alignment is desired, we recognize that there may be some circumstances where it may not be appropriate.

CEE Strongly Supports the Role CEE Tiers and Most Efficient Criteria Plays in Informing Future ENERGY STAR Levels

Given the careful development of CEE tiers and ENERGY STAR Most Efficient Criteria and their impact in the market, we support EPA efforts to have these levels be a key consideration when setting future ENERGY STAR product criteria. Building on these existing efforts supports manufacturer investment and traction in the market. These established more efficient performance levels should serve as the starting point for analysis for every applicable specification revision.

CEE Requests Additional Data to Enable Partner Assessment and Backing

To provide ENERGY STAR partners with the ability to support the Most Efficient platform, CEE encourages full disclosure of data informing EPA's proposal and clear rationale behind

decisions made. CEE has identified some inconsistencies in the data shared with stakeholders and recommends that EPA address these items to ensure partners are able to fully appreciate the implications of the proposal and respond with valuable input.

In addition to the number of models and partners captured, we believe energy savings numbers are critical input to stakeholders. Knowing the percent market share is also critical. We appreciate that percent market share was provided for appliances and would like to see these data for the other product categories. Energy savings numbers and market share data help obtain partner assessment and backing. We also seek clarity on how the percent of the market is calculated and would like to confirm it is not simply a percent of ENERGY STAR certified models but accounts for actual market share.

CEE Recommends Hosting a Stakeholder Webinar Prior to the Comment Deadline

Consistent with providing partners the necessary data to carefully assess the Most Efficient proposal, CEE suggests that EPA host a webinar to review the proposal and accompanying rationale in advance of asking stakeholders to submit comments. The 2019 process was inconsistent with past years' practice, and hosting a webinar further in advance of a comment deadline will enable greater due diligence and backing by partners.

CEE Offers Rationale for CEE Specifications with Different Requirements

We would like to highlight for EPA some areas where the scope or requirements of CEE specifications do not completely align with the Most Efficient proposal and explain the rationale behind our decisions for consideration.

Dishwashers

When CEE revised our [dishwasher specification](#) in 2015, we did not include a Tier 2 due to concerns around cleaning performance. Feedback we received from industry at that time indicated that manufacturers were already leveraging all known technological solutions to improve dishwasher energy and water efficiency in an effort to meet the proposed CEE Tier 1 levels, while still maintaining a level of performance, utility, and features that consumers demand. It was also communicated that reducing energy or water consumption beyond the proposed CEE Tier 1 levels would require sacrifices in the cleaning and drying performance of models, in particular, stripping the heated dry option

from units, as well as reducing final rinse temperatures or eliminating the dishwasher cycle purge. Manufacturers indicated that implementing any of these changes would result in consumer dissatisfaction, and consumers could decide to compensate by running multiple cycles, prerinsing and presoaking of dishes, handwashing dishes, or using more water- or energy-intensive cycles than the normal cycle in order to achieve an acceptable cleaning performance. All of these compensating behaviors would result in an increase in overall energy and water use. Based on careful consideration of this input, the final CEE dishwasher specification includes one performance level that aligns with ENERGY STAR Criteria Version 6.0. If additional technological developments have enabled manufacturers to achieve greater energy savings without the described reduction in amenity, CEE would consider reinstating a Tier 2 requirement.

Furnaces and Boilers

[CEE specifications for residential boilers and furnaces](#) do not contain requirements for diagnostics or homeowner notification. While CEE members believe that these capabilities may have the potential to enable additional energy savings, they are not aware of any studies or evaluations that have established quantifiable energy savings from these capabilities. Additionally, members have indicated that they do not believe these types of capabilities are necessary to ensure consumer satisfaction with high efficiency products. CEE remains open to considering addition of these types of criteria, particularly if a link between the criteria and energy savings can be established.

CEE Offers Other Products for Consideration

As EPA looks to expand the Most Efficient brand and increase adoption of the platform by CEE members, we recommend that EPA consider CEE specifications with multiple tier levels. We have included several opportunities below for EPA to assess how they align with Most Efficient objectives.

Tankless and Heat Pump Water Heaters

The [CEE specification for gas tankless water heaters](#) aligns with ENERGY STAR Version 3.2 for CEE Tier 1, and provides a higher efficiency target for CEE Tier 2. With 59 percent of currently available models meeting CEE Tier 1 and 12 percent of currently available models meeting CEE Tier 2, these requirements enable programs to promote options that best serve their markets.

The [CEE specification for Heat Pump Water Heaters](#) (HPWHs) is designed to enable as many members as possible the ability to promote products in their service territories.

Individual programs face unique climate conditions, regulatory parameters, portfolio goals, and other factors that determine how they claim savings; the CEE specification is intended to facilitate promotion of as many HPWH units as feasible.

Tier 2 and the Advanced Tier adopt increasingly stringent efficiency levels, as measured by uniform energy factor (UEF). Roughly half of current HPWH models meet the CEE Tier 2 criteria, making it a useful option for members interested in differentiating between HPWH products.

Tier 2 and Advanced Tier additionally include two mandatory requirements that impact energy savings potential; 1) compressor shut-down notifications to the consumer when the heat pump is disabled for specific conditions, and 2) minimal use of electric resistance elements in default operating mode and shipment settings in compliance with Federal energy efficiency standards. Lastly, there are several optional elements intended to address features pertaining to both product performance as well as customer satisfaction. Some of these criteria may offer additional energy savings, but these opportunities vary based on local considerations such as climate, installation, or application. Other criteria do not necessarily translate into energy savings, but rather enhance consumer experience.

Integral Replacement Lamps

The primary objectives of the [CEE replacement lamp specification](#) are to:

- Provide a binationally consistent platform that enables lighting programs to claim greater energy savings by recognizing the highest performing residential and commercial integral replacement lamps in the market
- Support the lighting industry investment in technology relative to the performance and quality attributes that garner regulatory support for promotion by the efficiency industry
- Enable a level playing field for assessing performance that drives greater penetration of high efficiency lighting products in high volume applications, independent of technology

The CEE specification serves to differentiate among the highest performing ENERGY STAR lamps. Specifically, it sets forth performance tiers that go above ENERGY STAR and identifies the levels at which programs are seeking to claim savings and provide a positive consumer experience while also supporting manufacturer investment.

CEE higher performance tiers provide members with a platform to support products with higher efficacy, improved color rendering, higher power factor, lower dimming, and longer lifetimes in their programs. In particular, members have indicated that they wish to promote lamps with lifetimes longer than 25,000 hours in order to communicate a greater

value proposition to consumers, reduce product waste, and claim greater lifetime energy savings.

CEE maintains a [list of qualifying ENERGY STAR integral replacement lamps](#), which may be useful in assessing this opportunity.

Commercial Kitchens

CEE has several commercial kitchens specifications within the [Commercial Kitchens Initiative](#), with higher tier requirements currently supporting commercial convection ovens, hot food holding cabinets, commercial ice machines, commercial steamers, and pre-rinse spray valves. Based on the CEE Program Summary, member support of the ENERGY STAR commercial foodservice specifications has remained strong and there is interest in continued opportunities to leverage the brand, particularly through opportunities such as the Most Efficient platform.

New Homes

The CEE Residential New Construction Initiative implements a [tiered specification](#) that promotes increasingly stringent Energy Rating Index scores as the founding principle, with minimum quality assurance prerequisites to bolster the incremental energy gains.

CEE has conducted analysis to show that there are large energy savings opportunities with existing technologies available, and that many of the additional benefits for high performing homes go beyond exclusive energy benefits.

The individual CEE tiers recognize progressing high performing homes, with the most advanced level representing a HERS score of nearly zero. While the proposed highest tiers are not necessarily cost-effective for the consumer at the moment, members believe that there is a critical role for the concept of zero net energy (ZNE) construction to serve as a means for differentiation in the current market, demonstrate achievable performance along the ERI scale, and support the influence of building codes down this same trajectory. If EPA were to apply Most Efficient recognition to new homes, it would likely best align with the CEE Tier 2 or 3 requirements at this time.

CEE Comments on Changes to the Most Efficient Criteria

Central Air-conditioners and Air Source Heat Pumps

In general, CEE supports including this new category as part of ENERGY STAR Most Efficient platform given the significant savings opportunity. However, CEE is concerned with two elements of this criteria: the timing related to the ENERGY STAR specification revision for this product category and implementing a technology specific requirement.

EPA is proposing to encourage the market exclusively toward variable capacity equipment as described within the current Version 6.0 CAC/ASHP Specification Discussion Guide. With this revision, we anticipate significant stakeholder review and iterative development process, including the specific methodology for promoting these products. We are concerned that launching the Most Efficient Criteria before Version 6.0 means it will not benefit from the same robust vetting process.

CEE supports a technology neutral philosophy and is opposed to specifying a particular solution as a prescribed way to achieve improved performance. The 2019 Most Efficient criteria explicitly requires that products be variable capacity, and we recommend simply increasing the efficiency metrics to a level where superior performing technologies will ultimately prevail.

Clothes Washers

CEE supports the Most Efficient efficiency requirements for clothes washers. We note that the CEE residential clothes washer specification does not include any cleaning performance requirements. Adding such a requirement has been contingent on an appropriate industry organization with standing (e.g. AHAM, IEC) developing a standard scoring method for cleaning and rinse performance and the CEE Residential Appliance Committee reviewing the metric and deeming it suitable as a basis for promoting products in an efficiency program. While we are supportive of EPA efforts to develop a cleaning performance test procedure, our understanding is that it has not been embraced by industry stakeholders because of concerns around repeatability and reproducibility.

We continue to support the technology neutral approach employed for clothes washers. Continuation of technology neutrality is based on the progress that has been achieved to date, as evidenced by the fact that when the CEE clothes washer specification was first launched in 1998, only front-loading horizontal axis clothes washers were able to meet the established performance requirements. However, since that time, manufacturers have

made significant investments in efficiency and performance, which has enabled CEE to revise clothes washer specification levels on at least five separate occasions. Similarly, in response to consumer demand, manufacturers have extended the reach of technology advancements to encompass new efficient configurations, including a variety of top-load models. In fact, the popularity of top-loading clothes washers may be a direct result of manufacturers taking steps to offer energy efficient top-loading models.

Our assessment is that any shift away from a technology-neutral approach for clothes washers has the potential to undermine the progress that has been made in the market, send mixed messages to consumers, and diminish the opportunity for energy savings. In particular, CEE is concerned about unduly influencing the cohort of consumers who are not predisposed as to washing machine configuration as they enter the purchasing decision. If ENERGY STAR Most Efficient were to establish separate, less stringent requirements for top loaders relative to those for front loaders, we suspect this could confuse consumers. Believing the energy savings to be equivalent among Most Efficient models, consumers in this scenario could be influenced to purchase a less efficient top-load model over a more efficient front-loading machine. In this instance, the consumer would experience lost energy savings. In an effort to avoid contributing to confusion among consumers, and in light of our desire to offer consistent guidance to support informed purchasing behavior, CEE supports EPA maintaining its technology-neutral approach with clothes washers.

Computer Monitors

CEE supports the EPA decision to apply a resolution allowance to the total resolution rather than capping the allowance at five megapixels, thus enabling EPA to recognize higher resolution monitors as Most Efficient.

Refrigerators

CEE supports the increase in criteria for side-by-side and bottom freezer refrigerators to greater than or equal to 20 percent above the Federal minimum standard; aligning with CEE Tier 3 for these product types. We believe this change is consistent with serving Most Efficient objectives.

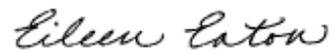
Televisions

In our comments in the response to the 2018 Most Efficient proposal, CEE communicated that we were interested in seeing televisions reincorporated into the Most Efficient

program once Version 8.0 of the ENERGY STAR television specification was finalized. We thank EPA for addressing this request and including televisions in the 2019 requirements.

CEE would once again like to thank the EPA for the opportunity to comment on the ENERGY STAR Most Efficient proposal. Please contact CEE Senior Program Manager Eileen Eaton at (617) 337-9263 with any questions about these comments.

Sincerely,

A handwritten signature in cursive script that reads "Eileen Eaton".

Eileen Eaton
Senior Program Manager & ENERGY STAR Liaison