

October 16, 2024

Ms. Abigail Daken  
1200 Pennsylvania Ave. NW, MC 6202A  
Washington, DC 20460

Dear Ms. Daken:

The Consortium for Energy Efficiency (CEE) respectfully submits the following comments in response to the ENERGY STAR® Discussion Guide and Draft 1 Test Method for Central Heat Pump Water Heater Systems, released by the US Environmental Protection Agency in July 2024.

CEE is the binational organization of energy efficiency program administrators. Historically, the CEE Board of Directors determined to throw its support behind a single brand for efficiency and elected to create standing for the ENERGY STAR program rather than advance the name recognition of CEE or other endeavors that existed at that time. The ENERGY STAR program adopted specifications supported by CEE and program administrators, providing the confidence that utility ratepayer programs needed to invest in incentives in association with ENERGY STAR. This was a conscious investment and contribution of equity and the sanctioned obligations of utility members, which include responsibility for delivering safe, reliable, and affordable service. The staff and membership of the Consortium continue to perform diligence relative to the ENERGY STAR brand promise and associated performance specifications, given the very serious obligations entrusted to US and Canadian utilities as well as others sanctioned with advancement of voluntary market transformation efforts.

CEE members are responsible for ratepayer-funded efficiency programs in 38 US states, the District of Columbia, and four Canadian provinces. In 2021, CEE members directed approximately 60% of the \$9.0 billion in energy efficiency and demand response program expenditures in the two countries. 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. 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. We appreciate the opportunity to provide this feedback.

## **New Commercial Heat Pump Water Heater Systems Proposal is In Concert with CEE Member Objectives**

CEE's newly revised Commercial Water Heating Initiative zeroes in on solutions that deliver energy efficiency and automated load management. Ratepayer funded program attention is progressively shifting from isolated components to a broader view that includes system-wide specifications, comprehensive design, and proper sizing. Our aim is to help ensure that these systems perform in the field as expected, providing tangible benefits for both customers as well as program administrators.

### **Definition Adequately Outlines HPWHs that Offer Savings Potential for Voluntary Efficiency Programs**

CEE thanks US EPA for providing a new definition for Commercial Heat Pump Water Heaters (CHPWHs). This new definition is inclusive of smaller commercial models that program administrators may wish to promote, specifically those with an input power limit less than 12-kW. Expanding the definition better aligns the DOE definition with the opportunity to utilize a wide range of CHPWHs to meet the needs of customers. Market transformation efforts are bolstered by a varied product offering to meet unique needs across many different use cases which ultimately increases uptake, creates more competition and drives down costs. There are currently at least three models of commercial HPWHs available which have a rated power input less than 12-kW; the SanCO2 system, the Colmac CxA-10, and the A. O. Smith AHPA060. These are split CHPWHs which are designed to be used in commercial and multifamily domestic hot water applications. We therefore support the update to the definition of commercial HPWHs to include commercial HPWHs which do not meet the 12kW input rating threshold.

CEE agrees with the inclusion of ancillary equipment as part of the CHPWH definition, as this expansion allows the ENERGY STAR specification to address how system design impacts performance. This broader scope is in line with the CEE Commercial Water Heating Initiative, which highlights the importance of whole system design and commissioning and supports the needs of CEE member programs to attribute energy savings of producing and delivering hot water. Not including the ancillary components

that make up a CHPWH system leaves open the possibility of poor design decisions or other inefficiencies that would lower the overall efficiency of the CHPWH as a system.

We also endorse removing the distinction between integrated residential-style HPWHs and heat pump units used in field-built systems with components from various manufacturers, because it levels the field across various equipment configurations from multiple manufacturers. Efficiency programs often rely heavily on third party developed test methods to ensure savings are demonstrable for all customers. The inclusion of the most common components found in a commercial water heating and delivery system ensures a fair comparison of systems to one another.

CEE is in support of EPA exploring further definitions for tank characteristics that impact system performance, as we recognize that these variables may have significant relationship to the total efficacy in field. We are interested in additional research or analysis that might demonstrate which design characteristics of storage tanks can have measurable impact on total savings, and subsequently assess whether specifying distinctions through the ENERGY STAR program could differentiate high performing systems.

## Having a Central Heat Pump Water Heater System Test Method is Critical for Program Adoption

CEE greatly appreciates the proposed development of a new DOE and EPA Central Heat Pump Water Heater test method for inclusion in the ENERGY STAR specification. Efficiency programs rely heavily on third party developed test methods to ensure savings are demonstrable for all customers. The establishment of a DOE Central Heat Pump Water Heater test method will provide reassurance that models can run at their stated levels and create clear methodologies for verifying performance. The Committee has expressed interest in having the federal government actively work to establish such parameters, and we are pleased to see that DOE, in conjunction with EPA, is taking this on. CEE members see a need for this in the market and support the establishment of a Central HPWH test method.

CEE is not aware of other components of central HPWH systems, beyond those currently covered by the test procedure – heat pump unit, auxiliary water storage tanks, circulator pumps – that significantly affect the system's energy efficiency.

## CEE Supports Technology Neutral Specification Requirements to Enable Market Driven Solutions

Wherever possible, CEE espouses the establishment of specifications that allow as much market flexibility and ability for innovation as possible, to enable industry innovation and evolution of products and system designs. Especially given the relative newness of central heat pump water heaters, we advise the scope to be focused on performance-based requirements wherever possible.

With the current proposal, a manufacturer's representative or distributor with access to multiple brands of tanks and circulator pumps may not be able to certify water heating systems independently of the manufacturer, due to potential conflicts of interest and concerns about certification credibility.

CEE is interested in better understanding the impacts and implications of allowing a stakeholder to certify any combination of heat pumps, circulator pumps and tanks that represent a unified system meeting the certification requirements and will be sold repeatedly. There may be unintended consequences of limiting configurations, although we recognize the tradeoffs of having multiple combinations in the market which adds complexity.

CEE is not aware of benefits to distinguishing between single-pass or multi-pass, and we are not cognizant of any active central HPWH voluntary programs that differentiate between the two types. At large, members are interested in seeing as many products and configurations as possible qualify in order to advance the market for central HPWHs. We are therefore interested in learning how having the ENERGY STAR label decipher between single-pass and multi-pass would impact model availability and what implications such a distinction might have in the market.

## Demand Responsive Central HPWHs Can Provide Opportunity for Load Management

The Consortium's strategic goals include scaling the enabling capabilities for automated energy management and demand flexibility in buildings. CEE is committed to advancing new energy efficiency specifications and initiatives, including working with manufacturers and the supply chain, to identify and bring to market next generation technologies.

As such, the CEE Commercial Water Heating Initiative is focused on advancing the value proposition for demand-flexibility and the time dependent valuation of energy. Our

current and future specifications seek cost-effective, integrated solutions that marry load management with distributed energy resources, including virtual power plants and non-wires/non-pipeline solutions.

The Initiative promotes innovative solutions rooted in energy efficiency as well as automated energy management (specifically features that support interactive communication and responsiveness to various signals) through optional connected criteria. In addition, CEE staff are active contributors to the development of AHRI Standard 1530 for demand-flexible commercial electric storage water heaters.

Automated energy management is important to our membership, and we support EPA exploring and pursuing the inclusion of these capabilities. We recommend EPA reference the [CEE Principles for Connectivity](#) for guidance from CEE members on the attributes that are necessary to realize the full potential of this technology, and look forward to working with EPA on articulating in more detail.

CEE would once again like to thank EPA for the opportunity to comment on the ENERGY STAR® Discussion Guide and Draft 1 Test Method for Central Heat Pump Water Heater Systems. Please contact CEE Commercial Sector Lead, Ryan Hamilton at [rhamilton@cee1.org](mailto:rhamilton@cee1.org) with any questions about these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "John Taylor". The signature is fluid and cursive, with the first name "John" being more prominent than the last name "Taylor".

John Taylor  
Executive Director