



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
AIR AND RADIATION

January 15, 2025

Dear ENERGY STAR® Commercial Heat Pump Water Heater Stakeholders:

With this letter, the U.S. Environmental Protection Agency (EPA) and the Department of Energy (DOE) are releasing the [ENERGY STAR Version 1.0 Commercial Heat Pump Water Heaters Draft 1 Specification](#) and the [Final ENERGY STAR Central Heat Pump Water Heater Test Method](#). The EPA will hold a public webinar on January 29, 2025, at 3 PM ET to discuss the Draft 1 specification in greater detail. The EPA also invites the public to submit comments on this draft proposal no later than February 13, 2025.

Central heat pump water heaters (HPWH) present a significant opportunity to advance energy efficiency in commercial buildings. Central water heaters and distribution loops are a standard water heating solution for large commercial and multifamily buildings, and as such, many existing buildings are set up to use them. Based on CBECS data, if all buildings that use central electric resistance water heating exclusively installed central HPWH systems with seasonal COP of 1.5, national annual savings would be on the order of 10 TWh.

Currently, virtually all central HPWH systems are custom designed for a specific building. The goal of this specification is to define product models with flexibility to adapt to the needs of the building while still allowing for the ENERGY STAR assurance of performance and efficiency. In addition, we intend to group models into families, such that certification of related system designs is relatively easy. We welcome input on how this proposal can best achieve these goals.

The EPA understands that system design and application determines the efficiency of the overall system, as long as the components are reasonably efficient and are chosen with the correct capacity for the application. Thus, the specification is for the system, with only basic requirements for the major components. This needs to include thorough enough testing of the heat pump unit for the system provider to understand its performance in a wide variety of systems and climates, which led to the creation of the [ENERGY STAR Central HPWH Test Method](#).

In defining who is responsible for the efficiency and performance of the system meeting the specification requirements, the EPA is proposing that the entity that specifies the system will be the ENERGY STAR partner and will ultimately be responsible for the performance of subsequent system installations and their components under a particular ENERGY STAR certification. To allow providers maximum flexibility in specifying models, the EPA is not proposing a requirement that all components are sourced from or branded by a single manufacturer. However, the EPA encourages system providers intending to certify systems to consider what business model will best allow them to feel confident in the performance and efficiency of the systems they specify.

Participants in the ENERGY STAR products program sign a standard partnership agreement which references, among other things, a commitment to abide by the ENERGY STAR program requirements

relevant to their product category. These program requirements consist of a set of partner commitments and product eligibility criteria (a product specification). For purposes of this proposal, the EPA has adopted standard ENERGY STAR partner commitments, clarifying that the mark only be used in association with the system and not in reference to system components.

Many of the comments the EPA received in response to the Discussion Guide for Central Heat Pump Water Heater Systems are reflected in the Draft 1 Commercial Heat Pump Water Heaters specification; responses to comments can be found in note boxes throughout the Draft 1 specification as well as in the accompanying [Comment Response Matrix](#). The matrix also contains responses to comments received on the Final Draft Test Method for Central HPWH Systems. All comments received on the Discussion Guide and Final Draft Test Method can be found posted on the [Commercial Heat Pump Water Heaters product development website](#).

The following key features are reflected in the Draft 1 specification:

- This specification will be separate from the existing Commercial Water Heater specification, which will continue to be available for non-heat pump products. For heat pumps, requirements in this specification will supersede those in the V2 Commercial Water Heaters specification after an appropriate transition period.
- Testing and certification of integrated commercial HPWHs will be unchanged from that in the V2 Commercial Water Heaters Specification.
- Certification of central HPWHs will be of systems, defined by system configurations based on those in the Advanced Water Heater Specification. Design and documentation requirements are proposed for the entire system. System providers may specify components by part numbers, including several equivalent options where that makes sense.
- For central HPWHs, the EPA proposes specific performance levels for major components (heat pump units, internal circulation pumps, and unfired storage tanks) on metrics measured by the [ENERGY STAR Test Method for Central HPWH Systems](#).
- For Heat Pump units, EPA has proposed levels for WHEERs and for COPs that are applicable to specific systems. We do not anticipate requiring all metrics, but share specific levels to further discussion over the coming months.
- For a central HPWH to earn the ENERGY STAR, the provider who certifies the product assumes responsibility for performance of the system and for use of the ENERGY STAR certification mark in accordance with Agency requirements.
- The proposed definition of system models allows a single model to include different capacities, as long as the components and the system configuration are the same, which we believe will lead to similar performance in similar climates. The EPA proposes that model families use the same components but may use a different system configuration (e.g. with or without a swing tank) or have a different ratio of capacity to storage to allow for different water draw patterns or for more load shift capability.

The EPA regards this draft as the next step to engage with stakeholders about how to allow for ENERGY STAR certification of central commercial water heater systems. We look forward to the comments from and discussions with our stakeholders. In addition to discussion of the draft, the EPA looks forward to discussing appropriate verification procedures for certified products. We are considering adjustments to our usual verification test procedures to accommodate the uniqueness of central HPWH systems.

## Final Test Method

Stakeholders commented on a variety of topics in the Final Draft Test Method, but the EPA and DOE only made minor edits and corrections to the Final Test Method. In particular, stakeholders mainly noted their concerns about the approach of the test method, test conditions, and the seasonal metric, WHEER. The EPA and DOE continue to believe that a component-based test method approach is appropriate at this time, in the context of a system specification. In general, the EPA and DOE note that this test method references the ENERGY STAR Room Air Conditioner Heating Mode Test Method and well-known industry standards, and as a result the WHEER metric is comparable to other established metrics within the industry. The EPA and DOE acknowledge several considerations for future revisions mentioned by commenters but note where certain factors would result in significant test burden at this time.

In the Final Test Method, the EPA and DOE updated the definitions for indoor and outdoor heat pump units for clarification in line with comments received to the Final Draft Test Method. Stakeholders requested clarification of the COP calculation at individual test points, which has been updated accordingly. The EPA and DOE have also included additional information for defrost testing and ducting configuration in the supplemental test instructions.

### Stakeholder Meeting:

The EPA will host a webinar on **January 29, 2025, from 3-5 PM ET** to discuss the Draft 1 specification and address initial stakeholder comments and questions. Please register to attend the webinar [here](#).

### Comment Submittal:

The public is encouraged to provide written comments for EPA consideration to [HVAC@energystar.gov](mailto:HVAC@energystar.gov) no later than **February 13, 2025**. As a reminder, all submitted comments will be posted to the [ENERGY STAR product development website](#) unless the submitter specifically requests their respective comments remain confidential.

Please contact Abigail Daken, EPA, at [Daken.Abigail@epa.gov](mailto:Daken.Abigail@epa.gov) or Megan McNelly, ICF, at [Megan.McNelly@icf.com](mailto:Megan.McNelly@icf.com) with questions or concerns. For any questions on commercial water heater testing, please contact Julia Hegarty, DOE, at [Julia.Hegarty@ee.doe.gov](mailto:Julia.Hegarty@ee.doe.gov). Thank you for your continued support of the ENERGY STAR program.

Sincerely,



Abigail Daken, Product Manager ENERGY STAR HVAC and Water Heating  
U.S. Environmental Protection Agency

### Enclosures:

[ENERGY STAR Version 1.0 Commercial Heat Pump Water Heaters Draft 1 Specification](#)

[ENERGY STAR Final Test Method for Central Heat Pump Water Heater Systems](#)

[ENERGY STAR Commercial Heat Pump Water Heaters Discussion Guide and Final Draft Test Method for Central Heat Pump Water Heater Systems Comment Response Matrix](#)