



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

OFFICE OF
AIR AND RADIATION

February 10, 2022

Dear ENERGY STAR® Light Commercial HVAC Brand Owner or Other Interested Party:

With this letter, the U.S. Environmental Protection Agency (EPA) is pleased to present the [ENERGY STAR Version 4.0 LCHVAC Final Draft specification](#) for stakeholder review. While most elements of the specification will be finalized promptly, there are a few that will require additional review and thus will be completed in the near future, as noted below and in note boxes in the specification. Stakeholders may submit comments to EPA on this Final Draft no later than **March 3**.

Background

EPA is revising this specification in response to the forthcoming increase in stringency of federal minimum efficiency requirements for HVAC equipment that will go into effect on January 1, 2023. As the 2023 requirements are more stringent than those posed by the Version 3.1 specification, it is critical that the ENERGY STAR criteria for LCHVAC products receive an update in parallel. EPA therefore intends for Version 4.0 to take effect by January 1, 2023.

Need for amendment in the next 12 months

In several areas noted below EPA will need to revisit this specification in the next 12 months. EPA will seek to avoid triggering recertification of products due to future amendments.

Summary of Changes from Draft 1

EPA appreciates the thoughtful comments and extensive discussions on Draft 1 from a variety of stakeholders. Given new insight arising from these interactions, EPA has made extensive updates to the proposal from the Draft 1. There is more information on these and other changes in note boxes throughout the specification as well as in the [comment response document](#).

- **Very Small Unitary and VRF products:** EPA appreciates stakeholder support for including these products within the scope of this specification. We have updated the proposal to align with the [ENERGY STAR Version 6.1 Central Air Conditioner and Heat Pump specification](#) requirements and have provided equivalent criteria in terms of both SEER, EER, and HSPF, and SEER2, EER2, and HSPF2. We have clarified that manufacturers may use either set of criteria (and the associated test methods) for certification to Version 4.0. In the next 12 months, in response to DOE actions, EPA will consider updating the specification to reference a single test method.
- **Small and Large Commercial Unitary Air Conditioners and Heat Pumps:** EPA has revised the proposed IEER, EER, and COP at 47°F requirements in light of new information about changes in the market by the time this specification is effective in 2023. In addition, many stakeholders provided feedback about how levels relate to each other for sub-classes of equipment, and EPA took this into account in this proposal. The updated criteria reflect

the balance of energy savings, product cost, and product availability that EPA recognizes with the ENERGY STAR mark.

- **Gas/Electric Packaged Units:** Amid uncertainty about how much savings capacity adjustment can provide for commercial equipment, EPA has eased the gas efficiency proposal to require at least two stages of heating, one of which can be the compressor-based heating a heat pump provides.
- **Small and Large VRF Products:** The proposed levels have been adjusted slightly to reflect feedback about the additional challenge large systems face meeting EER requirements, and to allow synergy with other entities on cold climate recognition (see below). EPA anticipates reviewing the levels for these products and revising the test method in the next 12 months based on anticipated DOE action.
- **Cold Climate Recognition:** The proposed criteria have been revised extensively based on conversations with a variety of stakeholders. The criteria reflect a conclusion that COP at low ambient temperature is more important than capacity for VRF systems, and capacity maintenance is more important for unitary systems.

Accordingly, capacity maintenance has been removed from the VRF criteria. In addition, the proposal has been adjusted to align more closely with products advertised by manufacturers and proven in the field as capable of cold climate performance, providing purchasers the best balance of affordability and efficiency. To this end, EPA has reduced COP requirements at 47°F and removed EER requirements. In addition, we have raised IEER with the understanding that products meeting other requirements for recognition will also meet this IEER. However, if a lower IEER requirement would allow less expensive units that also have excellent low ambient performance to enter the market, EPA may consider using the Draft 1 IEER requirement. EPA welcomes feedback on this point. Overall, this proposal will also allow better synergy with the Northeast Energy Efficiency Partnerships (NEEP) cold climate VRF specification, as drafted.

We have decided to delay cold climate recognition for unitary products in order to consider possible levels more thoroughly without delaying finalization of the rest of the specification. In addition, several other entities are working on cold climate specifications for unitary equipment, and this will allow coordination with them. EPA expects to add criteria within a year.

For very small units, EPA proposes alignment with the cold climate criteria in the [ENERGY STAR Version 6.1 Central Air Conditioner and Heat Pump specification](#). Demonstration of low ambient performance would ideally be the same as in that specification as well, however, the misalignment of test method timing makes that challenging. We have referenced the proposed B1 amendment and propose allowing a second pathway to demonstrate low ambient performance relying on the equivalency with residential models (single phase) recognized as cold climate heat pumps. The proposed DOE regulation already accounts for using tests of single-phase units to derive ratings of equivalent 3-phase models for rated values, so adding this path for the low ambient performance should allow recognition with minimal test burden. We expect to finalize these criteria slightly after the rest of the specification, and thus welcome stakeholder feedback on this proposal until **March 24**.

Comment Submittal Process

Any stakeholder that wishes to provide feedback on this proposal may submit written comments for EPA consideration to LCHVAC@energystar.gov by **March 3**. *Comments on cold climate criteria for very small units will be accepted until March 24*. All comments will be posted to the [ENERGY STAR LCHVAC Product Development website](#) unless the submitter requests otherwise.

Please direct any questions to Abigail Daken, EPA, at daken.abigail@epa.gov or 202-343-9375, and Emmy Feldman, ICF, at emmy.feldman@icf.com or 202-862-1145. For test procedure inquiries, please contact Catherine Rivest, U.S. Department of Energy, at (202) 586-7335 or Catherine.Rivest@ee.doe.gov.

Sincerely,



Abigail Daken, Product Manager
ENERGY STAR for HVAC

Enclosures:

[ENERGY STAR Light Commercial HVAC Version 4.0 Final Draft Specification](#)
[ENERGY STAR Light Commercial HVAC Version 4.0 Draft 1 Comment Response Document](#)
[ENERGY STAR Light Commercial HVAC Version 4.0 Data Package](#)