



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

OFFICE OF  
AIR AND RADIATION

November 26, 2024

Dear ENERGY STAR® Room Air Conditioners Brand Owner Partners and Other Interested Stakeholders:

The U.S. Environmental Protection Agency (EPA) is pleased to announce the simultaneous release of the ENERGY STAR Versions [6.0](#) and [7.0](#) Room Air Conditioner (RAC) Draft 1 Specifications. Version 6.0 is intended to address heating mode efficiency for room heat pumps while leaving other requirements unchanged. Version 7.0 proposes to update all requirements in response to new minimum standards going into effect in 2026. The Agency will be hosting a webinar on December 16, 2024, at 1pm ET to discuss EPA's proposals in greater detail. The public is encouraged to submit comments on these draft proposals to the EPA no later than December 30, 2024.

In the short time since the EPA finalized Version 5.0 of the ENERGY STAR RAC specification in 2023, the room heat pump (also known as reverse cycle RAC) market has advanced, with multiple manufacturers developing efficient heat pump models able to operate at temperatures considerably lower than before. In response to the innovation in these products, the EPA and Department of Energy (DOE) developed a test procedure to determine the heating efficiency of room heat pumps based on their operating temperatures and defrost, finalized in July 2024. The ENERGY STAR RAC Version 6.0 proposal adds a heating efficiency requirement for room heat pumps in order to characterize the potential energy savings from heating in addition to the savings from cooling. Further, incentives under the Inflation Reduction Act Home Energy Rebates programs require heating mode verification through ENERGY STAR certification. By setting a heating mode efficiency requirement, the EPA will enable ENERGY STAR certified room heat pumps to become eligible for these rebates.

### **Version 6.0 Heating Mode Requirements**

In Version 6.0, the EPA is proposing to add a heating energy efficiency ratio (HEER) requirement of 5.1 for Type 1 and Type 2 room heat pumps and 6.8 for Type 3 and Type 4. To ensure adequate performance in low ambient temperatures, the EPA is also proposing to require a 1.5 COP at 17°F and 5°F and a 70% heating capacity at 17°F and 5°F compared to 47°F for Types 3 and 4, respectively. These proposed requirements were determined in consideration of preliminary testing data provided by manufacturers and will allow for recognition of models across manufacturers introducing this technology, while ensuring that room heat pumps deliver improved performance over resistance heating. The proposed 5.1 HEER requirement for Types 1 and 2 corresponds to seasonal heating performance 1.5 times more efficient than resistance heating, using 2/3<sup>rd</sup> the energy. The 1.5 COP at 17°F and 5°F requirement for Types 3 and 4 will ensure adequate efficiency at cold temperatures, while the 70% capacity requirement will ensure the rated heating capacity more accurately reflects the heating capacity when heating load is the greatest. The EPA is also proposing to remove the optional connected criteria from the specification in Version 6.0 and instead allow reporting of connected features available for products, simplifying the process for sharing connectivity information with consumers.

For room heat pump models with heating efficiency at the levels proposed in Version 6.0, the EPA anticipates an average annual savings ranging from 276 kWh to 783 kWh for heating alone, depending on the Type. These savings are in comparison to the average energy use of electric resistance heating in homes that use portable space heaters or built-in electric appliances as their primary heating source. When also considering the cooling savings, the EPA anticipates a 0.5-year payback for Type 1 and 2 units for consumers compared to the installed price of a 2014 DOE minimum efficiency reverse cycle RAC. For Type 3 units, payback increases to 1.9 years, and for Type 4 units, payback is noticeably higher at 13.4 years. The EPA notes that for Type 4 units, the price of the baseline equipment used in the analysis, a DOE minimum RAC, is likely much lower than the actual price of the products a Type 4 room heat pump would be able to replace. Given the robust cold climate performance requirements at 5°F proposed in these ENERGY STAR RAC specification revisions, Type 4 room heat pumps would be appropriate alternatives to many primary heating and cooling products beyond RACs, such as mini-split systems, central air conditioners, boilers, or furnaces. As such, payback for Type 4 models is likely much lower when compared to other products often used in cold climate applications.

### **Version 7.0 Cooling and Heating Mode Requirements**

The Version 7.0 proposal was developed in response to a new federal minimum standard for RACs, effective May 26, 2026, requiring an increase in the ENERGY STAR specification cooling efficiency requirements to deliver savings beyond the standard. The EPA is proposing combined energy efficiency ratio (CEER) requirements 10% above the DOE minimum for non-reverse cycle RAC product classes and 5% above the DOE minimum for room heat pump (reverse cycle RAC) product classes. The EPA recognizes that design changes to meet the upcoming standards are currently underway and anticipates the selection of products performing at these levels will expand between now and the effective date. Based on an assessment using pricing data supporting the DOE's regulatory analysis, the EPA anticipates a payback of approximately two years for most RAC product classes with ENERGY STAR participation, compared to a 2026 federal minimum cooling efficiency model. While the estimated payback for product classes 1 and 2 is higher, prices may decrease in response to the expanded market for efficient technologies driven by the new standard, improving payback for consumers.

Given that the new minimum standards will require product redesign to increase cooling efficiency, the EPA anticipates a subsequent increase in room heat pump heating efficiency associated with the design changes. Therefore, in Version 7.0, the EPA is proposing a 5.8 HEER requirement for room heat pump Types 1 and 2 and an 8.3 HEER requirement for Types 3 and 4, in addition to increasing the COP requirements at 17°F and 5°F for Types 3 and 4, respectively, from 1.5 to 1.75. These proposed Version 7.0 low ambient temperature performance requirements would bring the ENERGY STAR RAC specification in alignment with the ENERGY STAR Cold Climate air source heat pump requirements, reflecting acceptable cold climate performance widely recognized by industry. The EPA is also proposing to add room heat pump labelling requirements to facilitate appropriate climate application across different brands, by room heat pump type.

For Type 1 and Type 2 room heat pumps meeting the proposed Version 7.0 criteria, the EPA anticipates an average annual savings of 343 kWh from heating alone, with a 1.4-year payback for consumers compared to a 2026 DOE minimum efficiency reverse cycle RAC, when also considering the savings from cooling. For Type 3 units, the EPA anticipates an average annual heating savings of 737 kWh and a 3-year payback. For Type 4 units, the EPA anticipates an average heating annual savings of 925 kWh and an 18.7-year payback. The additional considerations for calculating payback Type 4 models discussed in Version 6.0, above, also apply to the estimates in Version 7.0.

## Effective Dates

The EPA is proposing a two-tiered approach to these revisions to the ENERGY STAR Room Air Conditioners specification, with Version 6.0 effective nine months after finalization and Version 7.0 effective May 26, 2026, aligned with the timing of upcoming federal minimum efficiency standard effective date. While it is common for ENERGY STAR to adopt new minimum standards in advance of their effective date as a leadership program, the Agency recognizes the market circumstances in this instance are such that delaying the Version 7.0 effective date until 2026, providing as much notice as possible for manufacturers to prepare for the specification change, is likely most appropriate. Manufacturers will be able to early-certify eligible products to either version of the specification once they are finalized.

## Updated Heating Mode Performance Test Method

These specification revisions reference the new [ENERGY STAR Test Method to Determine Room Air Conditioner Heating Mode Performance](#). Since its release in July 2024, the EPA has corrected the test method to ensure that COP<sub>17</sub>, COP<sub>5</sub>, and COP<sub>x</sub> are calculated to be unitless, consistent with the description of coefficient of performance (COP) in section 3 of the test method. In the originally released version, the COP calculations mistakenly resulted in units of Btu/Wh. To address this, the EPA has added a conversion factor throughout the test method to produce unitless results (i.e., Watts/Watts). The reporting template has also been amended to include this conversion factor, along with a few other minor corrections to improve consistency between the calculator and the test method. As a reminder, all documents related to this process are posted to the [ENERGY STAR Room Air Conditioner Heating Mode Test Method Development webpage](#).

## Comment Submittal

The public is encouraged to provide written comments on the proposed RAC specification revisions for the EPA's consideration to [HVAC@energystar.gov](mailto:HVAC@energystar.gov) by **December 30, 2024**. In particular, the Agency is requesting feedback on the room heat pump labeling requirement in Version 7.0, including what labeling elements would help communicate appropriate application to consumers the most clearly. All comments will be posted to the Room Air Conditioners [Version 6.0](#) and [Version 7.0](#) Specification Development webpages unless the submitter requests otherwise.

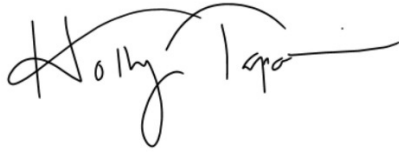
## Stakeholder Meeting

The EPA will host a webinar on **Monday, December 16, 2024, from 1 to 3 pm ET** to discuss Draft 1 of the Version 6.0 and 7.0 revisions to the ENERGY STAR Room Air Conditioner specification and address initial stakeholder comments and questions. Please register for the webinar [here](#). Stakeholders are encouraged to inform the EPA of any industry events that may conflict with this proposed date.

To track the EPA's progress in this development, visit the Room Air Conditioners [Version 6.0](#) and [Version 7.0](#) Specification Development webpages.

Thank you for your continued support of the ENERGY STAR Program. If you have any questions or feedback, please direct them to Holly Tapani at the EPA, [Tapani.Holly@epa.gov](mailto:Tapani.Holly@epa.gov) or 202-751-5089, or Megan McNelly at ICF, [Megan.McNelly@icf.com](mailto:Megan.McNelly@icf.com). For test method questions, please contact Lucas Adin at the DOE, [lucas.adin@ee.doe.gov](mailto:lucas.adin@ee.doe.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Holly Tapani". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Holly Tapani  
U.S. Environmental Protection Agency  
ENERGY STAR HVAC Program

Enclosures:

[ENERGY STAR Version 6.0 Room Air Conditioner Draft 1 Specification](#)

[ENERGY STAR Version 7.0 Room Air Conditioner Draft 1 Specification](#)

[ENERGY STAR Version 6.0 Room Air Conditioner Draft 1 Specification Data Package](#)

[ENERGY STAR Version 7.0 Room Air Conditioner Draft 1 Specification Data Package](#)

[ENERGY STAR Version 1.0 Test Method to Determine Room Air Conditioner Heating Mode Performance](#)