

Appliance Standards Awareness Project  
American Council for an Energy-Efficient Economy  
Northwest Energy Efficiency Alliance

August 23, 2022

Mr. Lucas Adin  
U.S. Department of Energy  
Office of Energy Efficiency and Renewable Energy  
Building Technologies Office, EE-5B  
1000 Independence Avenue SW, Washington, DC 20585

**RE: Docket Number EERE-2019-BT-STD-0035: Notice of Proposed Determination for Energy Conservation Standards for Packaged Terminal Air Conditioners and Packaged Terminal Heat Pumps**

Dear Mr. Adin:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), the American Council for an Energy-Efficient Economy (ACEEE), and the Northwest Energy Efficiency Alliance (NEEA) on the notice of proposed determination (NOPD) for energy conservation standards for packaged terminal air conditioners (PTACs) and packaged terminal heat pumps (PTHPs). 87 Fed. Reg 37934 (June 24, 2022). We appreciate the opportunity to provide input to the Department.

**We encourage DOE to establish energy conservation standards for PTACs and PTHPs based on a part-load cooling performance metric and a heating metric that incorporates low-temperature performance as soon as possible.** In this NOPD, DOE determined that amended energy conservation standards were technologically feasible but the Department lacked “clear and convincing evidence” that amended standards were economically justified. We understand that this NOPD satisfies the EPCA 6-year lookback requirement. However, should DOE issue a final determination not to amend standards, DOE is required to publish another NOPD or notice of proposed rulemaking (NPR) within three years of the publication of the determination.

We believe that an improved test procedure could uncover opportunities for significant cost-effective energy savings. In the engineering analysis for the NOPD, DOE retained four design options—increased heat exchanger area, higher efficiency fan motors, improved air flow and fan design, and higher efficiency compressors. In addition, the Department identified, but did not include as design options, technologies such as variable-speed compressors and compressor cut-out controls, stating that “the current EER and COP metrics do not measure part-load performance and low temperature heating performance”.<sup>1</sup> In the NOPD, DOE indicates that the Department may consider adopting a part-load cooling metric and a heating metric that includes performance at low ambient temperatures. We continue to encourage DOE to update the test procedure to measure these new performance metrics. As indicated in the Spring 2022 regulatory agenda, DOE expects to publish the test procedure NPR in February 2023.<sup>2</sup> We therefore encourage DOE to work concurrently alongside the test procedures

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<sup>1</sup> <https://www.regulations.gov/document/EERE-2019-BT-STD-0035-0014>. p. 37949.

<sup>2</sup> <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202204&RIN=1904-AE65>

rulemaking to evaluate potential amended energy conservation standards based on a part-load cooling metric and a heating metric that includes low-temperature performance.

**We encourage DOE to continue to assess the energy efficiency impact of alternative refrigerants.** In the NOPD, DOE screened out alternative refrigerants from consideration as a design option. While the Department acknowledged that A2L refrigerants may provide an efficiency benefit compared to R-410a<sup>3</sup>, DOE excluded these refrigerants, citing uncertainty in the magnitude of the energy impact.<sup>4</sup> DOE's justification for the exclusion is that the subject HVAC equipment of existing studies was not PTACs/PTHPs and also that the refrigerant was used as a drop-in replacement (instead of the system being optimized based on the characteristics of the new refrigerant).<sup>5</sup> In any future standards rulemaking, we encourage DOE to consider the energy efficiency impact of alternative refrigerants. Since DOE has cited lack of data specific to this equipment, we encourage DOE to perform its own testing, interviews, or research to better understand the energy impact of alternative refrigerants.

Thank you for considering these comments.

Sincerely,



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Appliance Standards Awareness Project



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<sup>3</sup>DOE found that almost all PTACs/PTHPs use R-410a  
<https://www.regulations.gov/document/EERE-2019-BT-STD-0035-0014>. p. 37946.

<sup>4</sup> <https://www.regulations.gov/document/EERE-2019-BT-STD-0035-0014>. p. 37948.

<sup>5</sup>We note that in the April 2022 room air conditioner NOPR, DOE also noted uncertainty in the impact of lower-GWP refrigerants (specifically considering R-32 as a replacement for R-410a). However, DOE found that the most efficient single-speed compressors use R-32, and therefore considered it indirectly in the analysis.  
<https://www.regulations.gov/document/EERE-2014-BT-STD-0059-0031>. p. 20624.