



SUBMITTED VIA EMAIL TO: MostEfficient@energystar.gov

August 21, 2023

Ann Bailey
Director, EPA Energy Star Product Labeling
United States Environmental Protection Agency
Washington, D.C.

Subject: Proposed recognition criteria for Energy Star Most Efficient for 2024.

Dear Ms. Bailey:

Daikin Comfort Technologies North America, Inc. (“Daikin”) submits the following comments in response to the U.S. Environmental Protection Agency’s (“EPA”) proposal to update the ENERGY STAR® Most Efficient recognition criteria for the 2024 program year.

Daikin is a member of Daikin Industries Ltd., the largest heating, ventilation, and air conditioning (“HVAC”) manufacturer in the world. Daikin is headquartered in Waller, Texas, and employs thousands of workers across the United States. The company manufactures residential and light commercial heating and cooling equipment, and its products are sold and installed by contractors in every American state and territory, as well as in Canada.

I. Overview

As a manufacturer of high efficiency inverter heat pumps, Daikin supports stability in the current recognition criteria. Furthermore, in concert with industry in general, we desire harmonization of EPA ENERGY STAR Most Efficient criteria with CEE highest non-advanced Tier levels. However, Daikin is opposed to keeping the peak load efficiency metric due to conflict with EPA – and other stakeholder – goals of minimizing refrigerant usage and emissions.

II. Harmonization

Daikin appreciates the general harmonization of ENERGY STAR Most Efficient (“ESME”) and other program requirements. For non-cold climate Ductless HP, the identical ESME eligibility criteria alignment with CEE Tier 2 South (matching IRA 25C) in this proposal is ideal. Especially in current situations we stakeholders are encountering – when DOE minimum efficiency levels change in 2023 and refrigerant restrictions occur 1/1/2025 – having exact duplication is especially beneficial. This gives clarity to manufacturers as we develop high efficiency products, and simplifies consumer decision making regarding tax credit eligible products.

For Ductless Cold Climate HP, the near-identical ESME eligibility criteria alignment with CEE Tier 2 North and Canada – with the exception that the latter does not require the cold-climate CVP – also substantially helps manufacturers and consumers. The benefits – to all stakeholders – of having matching requirements cannot be overstated.



For ducted heat pumps, the EPA decision to maintain stability of eligibility criteria is appreciated. However, the ESME criteria proposals for both ducted and package equipment do not align with either CEE highest non-Advanced Tier (IRA 25C tax credit) level nor with CEE Advanced Tiers themselves. This misalignment will prohibit the achievement of ESME being approximately the top 5-10% of the market. We encourage EPA to pursue further harmonization where possible including the elimination of regional standards in incentive programs.

III. Consideration of “Refrigerant Efficiency”

While Daikin supports the stability and harmonization of program criteria, we believe the existing requirements for variable speed heat pumps need to be modified to guide consumers to the most refrigerant-responsible equipment available. To accomplish this, EPA should modify ENERGY STAR Most Efficient requirements for variable speed heat pumps to eliminate EER2.

Requirements for higher EER2 promote increased raw material (copper, aluminum, and steel) consumption and increased refrigerant use. Further, EER2 as evaluated by the current test procedure does not accurately reflect the applied efficiency of variable speed heat pumps.¹ This results from an inaccurate accounting for oversizing of equipment as practiced in the field. While the seasonal metric SEER2 has an oversizing factor, EER2 does not, leading to an underestimation in reported performance of this metric for variable speed heat pumps. To account for this, and until the test procedure can be updated, ENERGY STAR Most Efficient program criteria should be appropriately adjusted.

Removing EER2 would increase the proportion of products in the marketplace with high seasonal efficiencies, aligning ENERGY STAR Most Efficient goals with the EPA’s Office of Air and Radiation (OAR) climate change policies. Removing EER2 would reduce the total amount of refrigerant required in heat pumps, which can improve product affordability and lower cost to consumers. It also reduces the overall carbon emissions from HVAC products. We encourage the EPA to eliminate EER2 requirements for variable speed heat pumps.

¹ Estimates indicate a variable speed heat pump applied in a home sized to match the heating load could have applied cooling efficiency at higher outdoor temperature conditions that is 20% or more higher than rated EER2 based upon the current test procedure.



DAIKIN COMFORT TECHNOLOGIES MANUFACTURING, L.P.

19001 Kermier Road
Waller, TX 77484

Tel: 713-861-2500
www.northamerica-daikin.com

Daikin appreciates the opportunity to provide these comments. We support EPA's goal of promoting heat pumps and welcome new specifications which the Agency may advance to support that goal.

If you have any questions regarding this submission, please do not hesitate to contact me by phone or email.

Sincerely,

Rusty Tharp
Vice President, Regulatory Affairs and Environmental Research
Tel: 713/263-5906
Email: rusty.tharp@daikincomfort.com

cc: Nathan Walker