

Appliance Standards Awareness Project
Natural Resources Defense Council

July 21, 2021

Mr. Bryan Berringer
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–0043/RIN 1904–AE61: Request for Information for Energy Conservation Standards for Dehumidifiers

Dear Mr. Berringer:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP) and Natural Resources Defense Council (NRDC) on the request for information (RFI) for energy conservation standards for dehumidifiers. 86 Fed. Reg. 29964 (June 4, 2021). We appreciate the opportunity to provide input to the Department.

DOE should conduct a full analysis to evaluate potential amended standards for dehumidifiers. After evaluating the models currently listed in the DOE Compliance Certification Database (CCD), we found that there is considerable potential for energy efficiency improvements for all dehumidifier product classes.¹ As shown in Table 1, the maximum available efficiency levels represent efficiency improvements of 18-37% relative to the current standards, depending on the product class.

Table 1. Maximum available integrated energy factor (IEF) for dehumidifier product classes

	Product class	Capacity	Current DOE standard level IEF (L/kWh)	Most efficient model IEF (L/kWh)	Max % increase in efficiency relative to current DOE standard
1	Portable Dehumidifier	≤25.00 pints/day	1.30	1.70	31%
2	Portable Dehumidifier	25.01-50.00 pints/day	1.60	1.95	22%
3	Portable Dehumidifier	≥50.01 pints/day	2.80	3.30	18%
4	Whole-home Dehumidifier	≤8 ft ³	1.77	2.22	25%
5	Whole-home Dehumidifier	>8 ft ³	2.41	3.30	37%

¹ Models listed in the DOE CCD as of June 14, 2021.

does not capture the benefits of variable-speed compressors. As we will expand on in our comments on the dehumidifiers test procedure RFI, we urge DOE to amend the test procedure to capture the benefits of variable-speed compressors.

In addition, dehumidifier sales will likely increase as climate conditions change and temperatures and humidity levels rise,² so continued improvement of dehumidifier efficiency standards will be increasingly important.

Variable-speed dehumidifiers are commercially available in the United States. Variable-speed compressors can improve efficiency by reducing cycling losses and improving heat exchanger effectiveness during part-load operation. In the RFI, DOE requests comment on the availability of dehumidifiers with variable-speed compressors.³ Variable speed dehumidifiers are available for residential use in the United States⁴ and internationally.⁵ We encourage DOE to evaluate variable-speed compressors as a design option based on a revised test procedure.

We encourage DOE to investigate potential efficiency improvements beyond the efficiency levels of the most efficient currently available products. In the RFI, DOE requests comment on using the maximum efficiency levels of the models listed in the DOE CCD as of December 7, 2020 as the max-tech efficiency levels.⁶ However, as of June 14, 2021, the maximum available efficiency levels for two of the five product classes have improved. For product classes 2 and 4, DOE lists 1.90 L/kWh and 2.09 L/kWh, respectively, as the maximum efficiency levels available;⁷ however, as of June 2021, the maximum efficiency levels available are 1.95 L/kWh and 2.22 L/kWh, respectively. Furthermore, dehumidifiers currently on the market may not incorporate all potential design options. DOE must establish the max-tech efficiency levels based on the maximum efficiency that is technologically feasible.

Thank you for considering these comments.

Sincerely,



Kanchan Swaroop
Technical Advocacy Associate
Appliance Standards Awareness Project



Joe Vukovich
Energy Efficiency Advocate
Natural Resources Defense Council

² <https://www.globenewswire.com/news-release/2019/12/03/1955381/0/en/Dehumidifier-Market-worth-3-8-billion-by-2025-Exclusive-Report-by-Meticulous-Research.html>.

³ 86 Fed. Reg. 29965.

⁴ See https://www.hisense-usa.com/air-products/all-air-products/DH10019TP1WG_100-pint-capacity-1500-sq-ft-coverage-3-speed-inverter-dehumidifier-with-built-in-pump.

⁵ See https://www.lg.com/hk_en/puricare/lg-MD16GQSA1#pdp_where.

⁶ 86 Fed. Reg. 29966.

⁷ Ibid.