

Appliance Standards Awareness Project
American Council for an Energy-Efficient Economy
New York State Energy Research and Development Authority
National Consumer Law Center

April 28, 2023

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

RE: Docket Number EERE-2017-BT-STD-0003: Notice of Proposed Rulemaking for Energy Conservation Standards for Refrigerators, Refrigerator-Freezers, and Freezers

Dear Mr. Adin:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), the American Council for an Energy-Efficient Economy (ACEEE), the New York State Energy Research and Development Authority (NYSERDA), and the National Consumer Law Center (NCLC) on behalf of its low-income clients on the notice of proposed rulemaking for residential refrigerators, refrigerator-freezers, and freezers. 88 Fed. Reg. 12452 (February 27, 2023). We appreciate the opportunity to provide input to the Department.

In this NOPR, DOE has proposed strong standards for refrigerators and freezers, which would result in large cost-effective energy savings. However, we encourage DOE to consider higher efficiency levels for bottom-mount refrigerator-freezers (Product Class [PC] 5) and side-by-side refrigerator-freezers (PC 7). In addition, we encourage DOE to clarify the provisions of the door energy use allowances.

We encourage DOE to consider higher efficiency levels. In the NOPR, DOE proposes to adopt Trial Standard Level 5, which would provide 5.3 quads of energy savings over 30 years of sales and net present value (NPV) savings for consumers of up to \$20.4 billion.¹ For the product class with the highest market share, top-mount refrigerator-freezers (PC 3), models just meeting the proposed standard would use 15% less energy than a baseline model today. DOE estimates that nearly three-quarters of low-income households use a top-mount refrigerator-freezer.² For this product class, 91% of low-income consumers would experience a net benefit.³

However, we encourage DOE to consider higher efficiency levels for bottom-mount (PC 5) and side-by-side (PC 7) refrigerator-freezers. For PC 5, DOE proposed to adopt Efficiency Level (EL) 2, yet we estimate that EL 3 would deliver around 0.3 quads of additional energy savings with positive LCC and

¹ 88 Fed. Reg. 12455.

² Or a single-door refrigerator, also represented by PC 3. 88 Fed. Reg. 12524.

³ <https://www.regulations.gov/document/EERE-2017-BT-STD-0003-0045>. p. 11-4.

NPV savings.⁴ We note that DOE determined that bottom-mount refrigerator-freezers (PC 5) are not commonly used in low-income households, and therefore did not perform a consumer subgroup analysis.⁵ For side-by-side refrigerator-freezers (PC 7), DOE proposed to adopt EL 4, yet EL 5 has almost identical LCC and NPV savings and would deliver an additional 0.1 quads of energy savings.⁶ For low-income households for PC 7, the LCC savings are also nearly identical at EL 5 compared to EL 4, and 71% of low-income households would experience a net benefit at EL 5.⁷ We therefore encourage DOE to consider adopting EL 3 for PC 5 and EL 5 for PC 7, which would achieve greater energy savings and maintain robust consumer benefits.

We encourage DOE to ensure that the provisions relating to specialty door energy use allowances are clearly defined. DOE has proposed energy use allowances for specialty doors that would increase the maximum allowable energy use. Specifically, DOE has proposed to define a door coefficient, K , that would be applied to the maximum energy use. For two specialty door configurations, products with a transparent door and products without a transparent door with a door-in-door, DOE defines K as 1.10 and 1.06, respectively. DOE explains in the NOPR that “if the standard level...is set at a level for which this allowance would represent backsliding...the allowance would be reduced to eliminate such backsliding.”⁸ However, under the proposed standards, it appears that the K values could enable backsliding for at least one product class.⁹

For the third specialty door configuration, products without a transparent door or door-in-door with added external doors, DOE presents an equation for the K value to be calculated based on N_{dr} , the number of external doors. While DOE explains in the NOPR that the calculated K values should be capped at 1.04 for PC 5A and 1.06 for PCs 5 and 7, this stipulation is absent from the proposed regulatory text. We encourage DOE to ensure that the regulatory language reflects the Department's intent regarding specialty door energy use allowances.

DOE has also proposed a definition for transparent door.¹⁰ We understand that some refrigerators have a user interface that may be an LCD smart screen (glass touch screen) that attaches to the door assembly. In this situation, the glass is not transparent, as it does not allow direct viewing into the refrigerator. While we presume that DOE intends the reference to “glass” in the proposed definition to refer to transparent glass, it is unclear if a smart screen could meet the proposed definition. We encourage DOE to ensure that the presence of a glass smart screen would not permit a manufacturer to take advantage

⁴ The adjusted volume-weighted percentage energy savings at EL 3 is 16%, which is slightly greater than the mean adjusted volume-weighted percentage energy savings of EL 2 (11.7%) and EL 4 (18%). Therefore, we estimated FFC energy savings at EL 3 as the midpoint between 0.774 and 1.445 quads.

⁵ DOE used the RECS 2015 dataset to identify that less than 5% of households that met the Department's definition of low-income had bottom-mount refrigerator-freezers (PC 5).

⁶ LCC savings: EL 4: \$101 EL 5: \$95; NPV (7% discount): EL 4: \$1.8 billion, EL 5: \$1.6 billion

⁷ <https://www.regulations.gov/document/EERE-2017-BT-STD-0003-0045>. p. 11-5.

⁸ 88 Fed. Reg. 12467.

⁹ For PC 5-BI, the proposed standard reflects a maximum energy use that is 8% less than the current standard. For a model with an adjusted volume of 26 cu. ft. without an icemaker and without specialty doors, the proposed standard is 534.8 kWh/yr (8% less than the current standard, 581.3 kWh/yr). For the same size unit with a transparent door, the result of applying a door allowance of 1.10 is that the proposed maximum energy use would be 588.3, which is 1.2% higher than the current standard; such a scenario would represent backsliding.

¹⁰ Transparent door means a door for which 75 percent or more of the surface area is glass or another transparent material.

of a credit meant to reflect the additional energy use from increased heat transfer of transparent materials compared to a solid insulated door.

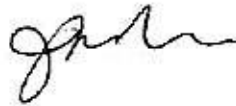
We encourage DOE to require manufacturers to report specialty door configurations. We encourage DOE to require any manufacturer that employs a door allowance to publicly certify which door configuration was used, and, when applicable, the number of external doors, N_d . Including this information in the DOE Compliance Certification Database would allow database users to determine the maximum energy use for any given model and would provide additional information about this growing market.

Thank you for considering these comments.

Sincerely,



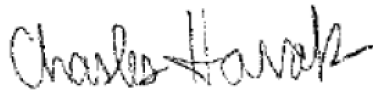
Rachel Margolis
Technical Advocacy Associate
Appliance Standards Awareness Project



Jennifer Amann
Senior Fellow
American Council for an Energy-Efficient Economy



Chris Corcoran
Team Lead – Codes, Products, & Standards
New York State Energy Research and
Development Authority (NYSERDA)



Charles Harak, Esq.
National Consumer Law Center
(On behalf of its low-income clients)