



NYSERDA

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March 19, 2024

Mr. Ryan Fogle
U.S. Environmental Protection Agency
Climate Protection Partnership Division
1200 Pennsylvania Avenue NW
Washington, DC 20460

NYSERDA Comments on ENERGY STAR Lab Grade Refrigerators and Freezers Specification V2.0, Draft 2

Dear Mr. Fogle,

The following comments are submitted on behalf of the New York State Energy Research and Development Authority (NYSERDA). NYSERDA is a public benefit corporation and offers information and analysis, innovative programs, technical expertise, and support to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels. NYSERDA’s mission is to advance clean energy innovation and investments to combat climate change, improving the health, resiliency, and prosperity of New Yorkers and delivering benefits equitably to all. NYSERDA works to help implement New York State's nation-leading climate agenda, which is the most aggressive climate and clean energy initiative in the nation; New York is advancing an orderly and just transition to clean energy that creates jobs and continues fostering a green economy.

Thank you for the opportunity to submit comments to the Environmental Protection Agency (EPA) on the ENERGY STAR Lab Grade Refrigerators and Freezers specification V2.0, Draft 2. We offer the following comments to support the finalization of this specification.

NYSERDA is supportive of this ENERGY STAR Specification update

As stated in our September 2023 comment letter,¹ NYSERDA generally supports a revision to the ENERGY STAR Laboratory Grade Refrigerator and Freezer specification as there have been significant improvements in energy efficiency since the 2017 launch of the Version 1.1 Specification. NYSERDA appreciates EPA’s responsiveness to several comments that NYSERDA raised including:

- In our 2023 letter, NYSERDA commended EPA for incorporating current industry standards, terms, and definitions into the revised specification. NYSERDA appreciates EPA’s efforts to further align with industry standards, such as the NSF/ANSI 456-2021a Standard, in the new draft.

¹ https://www.energystar.gov/sites/default/files/asset/document/NYSERDA%20Comments_1.pdf

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- NYSERDA also commends EPA for tightening the peak variation for the General Purpose and High-Performance Laboratory Grade Refrigerators to ensure that expected temperature performance is maintained per end-user expectations.
- NYSERDA supports EPA’s creation of additional product categories to help consumers make apples-to-apples comparisons that impact energy consumption and costs. For instance, we support differentiating lab refrigerators by door type by adding separate criteria for solid and transparent doors and differentiating lab freezers by their defrost type, creating separate criteria for manual defrost and automatic defrost products to compare those products against similar type products. These new categories recognize that glass doors and automatic defrost features tend to increase energy use.

NYSERDA appreciates EPA’s review of additional sources of product data

In the September 2023 comment letter, NYSERDA recommended that EPA consult additional sources of data outside the dataset associated with products certified to the current Version 1.1 Specification, such as the New York Technical Reference Manual (TRM),² other state TRMs, and market data and incorporate these sources into their analysis. NYSERDA commends ENERGY STAR for incorporating additional data points identified by stakeholders into its analysis, which was included as a new data set provided by EPA; we appreciate EPA’s transparency by providing the dataset for stakeholder review.

NYSERDA welcomes further alignment with industry standards and clarification of “set point” terminology

In September 2023, NYSERDA requested clarification of the term “set point” since it is typically used by industry to denote the actual temperature to be achieved and maintained within an operating temperature range. EPA’s V2.0 Draft 1 referred to the full temperature range as setpoint temperature, which has the potential to confuse the market. We see that in this draft 2 specification, EPA amended the set point temperature range to align with the NSF/ANSI 456-2021a Standard referring to set points as the actual temperature to be achieved by the model.

This update helps address NYSERDA’s concern that the set point temperature range derived from NSF/ANSI 456-2021a is 1°C outside a blood bank refrigerator’s 1°C - 6°C range. Given the significant overlap between the specified range and the blood bank range, NYSERDA appreciates that manufacturers of Lab Grade Refrigerators for blood banks have the option of certifying within a 2°C and 6°C temperature set point range.

In its September 2023 comment letter, NYSERDA also noted that stringency of the new maximum daily energy consumption (MDEC) requirements appeared to eliminate energy savings generated by efficient specialty products that we expected would continue to be used in the field, such as blood bank refrigerators. This issue has been addressed with EPA’s closer alignment with industry standards (NSF/ASTM) in the new draft.

² <https://dps.ny.gov/technical-resource-manual-trm>

NYSERDA supports EPA requiring that Laboratory Grade Freezers to be tested at a standardized set point of -20°C since most models are able to achieve this temperature and the manufacturer's intended set point temperature be reported (e.g., -20°C, -30°C, etc.) during testing. NYSERDA believes consumers will benefit from this added clarity and transparency.

NYSERDA recommends modifications to the undercounter ultra low temperature (ULT) freezers in the 3-10 cu ft size range

In the September 2023 comment letter, NYSERDA noted that there is a robust market for smaller, undercounter ULT freezers in the 3-10 cu ft size range that cannot meet existing ULT Version 1.1 requirements (MDEC 0.55 kWh/day.cu ft) and warrant a less stringent threshold. NYSERDA commends ENERGY STAR for responding to this comment by proposing a new category for smaller ULT freezers in the $0 < V < 20$ cu ft range which would be certified at a lower MDEC (≤ 0.46 kWh/day/ft³). However, NYSERDA does not think this change will address the intent of our prior comment – to certify and label undercounter ULT freezers. Smaller ULTs have space constraints and compressor size limitations which can result in challenges achieving comparable efficiency as their larger counterparts. The smallest ULT that is currently certified to ENERGY STAR is 14.4 cu ft. Reducing the MDEC threshold to 0.46 kWh/day eliminates 50% of a small total population of units in this size category and continues to exclude products in the 6-12 cu ft category which are undercounter units. NYSERDA recommends EPA consider establishing size categories, as proposed below, for ULT freezers with appropriate MDECs for each.

- $V < 6$ cu ft: This is of particular interest for undercounter ULT freezers which is a growing market, but these smaller units may not be able to meet the proposed MDEC; we recommend EPA consider a higher MDEC for these smaller units.
- $6 < V < 22$ cu ft: Medium ULT where we would recommend setting an intermediate MDEC level between the smaller and the larger.
- $22 < V$ cu ft: These are the largest ULT freezers and where there have been significant advancements in energy efficiency within the market and where a lower MDEC is appropriate.

NYSERDA concerns on product availability have been alleviated

In our September 2023 comment letter, NYSERDA expressed concern that lowering the MDEC specification for ULT freezers from 0.55 kWh/day/cu ft to 0.35 kWh/day/cu ft would drastically reduce the number of qualifying products driving consumers to purchase less efficient, non-ENERGY STAR products. While this issue was not directly addressed by EPA in Version 2, Draft 2 of the specification, a few updates have assuaged our concerns on this front:

1. Manufacturers will have time to ramp up production of qualifying lab refrigerators, freezers and ULT freezers since EPA intends to finalize the Version 2 Specification in Q2 of 2024 with a TBD effective date sometime in Q1 2025, allowing nine months following the finalization of the specification.
2. Unlike the lab refrigerator and lab freezer market, the ULT freezer market is concentrated among 3-4 leading manufacturers and their qualifying models, so while the total number of ENERGY STAR certified ULT freezers will

be reduced significantly, it is likely consumers will be able to find the manufacturers and models they typically buy or newly released models that qualify as ENERGY STAR.

NYSERDA recommends expanding ENERGY STAR’s presence in the life sciences

The life sciences industry is growing rapidly in the United States and globally which creates greater opportunities for energy savings and emissions reduction in the sector. Further, leaders in the life sciences are motivated to make their companies more sustainable and are embracing opportunities for greater energy and water efficiency, reducing waste, and lowering their GHG emissions. NYSERDA recommends that ENERGY STAR capitalize on life science industry support by certifying additional lab equipment. For instance,

- NYSERDA sees that EPA has defined cooling incubators in the draft specification and recommends ENERGY STAR labeled cooling incubators in the future.
- We recommend that ENERGY STAR consider the development of labels for walk-in refrigerators similar to walk-in freezers and ULTs.
- NYSERDA notes that there are other lab freezer and refrigerator equipment categories that could be added to the scope of this specification in the future, such as combination refrigerator/freezer units and cryogenic freezers.
- NYSERDA encourages ENERGY STAR to consider opportunities for labeled products that are currently labeled under My Green Lab’s ACT Label (which include energy consumption), such as laboratory glassware washers, centrifuges and autoclaves/sterilizers.³

Finally, we wanted to bring to EPA’s attention that there were two tables labeled “Table 4” in the Draft 2 specification.

Thank you for the opportunity to provide comment on this specification. NYSERDA seeks to be a strong partner of EPA as we work together to advance state and national decarbonization priorities. Please do not hesitate to reach out to discuss any of these matters further.

Sincerely,



Chris Corcoran
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New York State Energy Research and Development Authority (NYSERDA)

³ See My Green Lab, ACT Environmental Impact Factor Label, <https://actdatabase.mygreenlab.org/>