



**NYSERDA**

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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 1**

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 1. We offer the following comments to support the finalization of this specification.

**NYSERDA supports updating the ENERGY STAR specification for Lab Grade Refrigerators and Freezers**

NYSERDA generally supports the 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. The life sciences tool market is expected to grow at an annual rate of 11.9%<sup>1</sup> over the next 5 years. Last year, the National Institutes of Health distributed 1,917 grant awards to New York research institutions, totaling \$924M – 10.1% of the national total.<sup>2</sup> Based on this data and discussions with market actors, we estimate a market size of 1,800-2,000 ultra-low temperature (ULT) freezers in New York State last year. Given the importance of the life science sector and the limited opportunities outside of the ENERGY STAR program to improve efficiency for this sector, we commend EPA for updating the Lab Grade Refrigerators and Freezers specification.

<sup>1</sup> *Life Science Tools Market Size To Reach \$227.3 Billion By 2028*. Grand View Research, Inc. <https://www.prnewswire.com/news-releases/life-science-tools-market-size-to-reach-227-3-billion-by-2028--cagr-11-9-grand-view-research-inc-301326685.html>

<sup>2</sup> NIH Awards by Location & Organization. US Department of Health & Human Services. <https://report.nih.gov/award/index.cfm>

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Over time, ENERGY STAR certified lab freezers and refrigerators have been embraced by the market and consumers, which has helped to drive lab equipment efficiency. Participation in the ENERGY STAR program has grown in part due to utility rebates spurred by significant investments to store COVID vaccines. For instance, Con Edison of New York currently offers a midstream incentive to their customers when purchasing ENERGY STAR certified ULT freezers, high-performance lab refrigerators, and high-performance lab freezers.

NYSERDA supports the direction of this specification revision, but we have concerns that the proposed levels in V2.0 Draft 1 may inadvertently result in more energy used rather than saved. For example, in V2.0 Draft 1, ENERGY STAR has proposed a ULT freezer maximum daily energy consumption (MDEC) specification of .35 kwh/day/cuft, which is a 36% reduction from the current ULT freezer specification of .55 kwh/day/cuft. At these levels, only a few dozen products and half of the brands would be able to meet the new specification. This presents a problem as ULTs are typically installed in specialty applications with space and size limitations as well as specific requirements for functionality. With a significant reduction in products being offered, consumers may need to turn to less efficient, non-ENERGY STAR products to meet their functionality requirements because of these inherent customer limitations. Lab refrigerators and freezers may face a similar challenge with limited numbers of qualifying products at the levels proposed in the V2.0 Draft 1. The stringency of the new MDEC equations also appear to eliminate energy savings generated by efficient specialty products that we expect would continue to be used in the field, such as blood bank refrigerators.

It is also worth noting that these products are primarily used in business or research settings, where the first cost of a product can be a greater driving factor than the operational savings on utility bills. This split incentive, coupled with limited product availability as a result of the currently proposed MDEC levels, could have the end result of less efficient, non-ENERGY STAR products being purchased.

We therefore recommend that EPA revisit the specification levels proposed to ensure that V2.0 pushes efficiency for this product category while still retaining a sufficiently robust array of qualifying products across sizes, brands, and application specific features, such as drawers or shelves. Since EPA can exercise discretion when updating a specification, if the market is able to adjust to the V2.0 levels quickly, a V3.0 specification update could commence sooner to drive further energy efficiency. Additionally, EPA could consider setting a higher efficiency level for the ENERGY STAR Most Efficient program to recognize the highest performing products in this category.

#### **NYSERDA recommends EPA review additional sources of product data**

EPA has stated that it used the dataset associated with products certified to the current Version 1.1 specification as basis for evaluating levels for V2.0. While this data is robust, it is not a complete representation of available products; when trying to assess how much of the market is covered by ENERGY STAR products, the 2022 Annual ENERGY STAR Shipment data cites “N/A”, demonstrating a lack of current market data to determine the percentage of coverage.<sup>3</sup> However, as utility energy efficiency programs have been developed for this product category, utility program administrators are required to identify baseline energy performance. As noted above, Con Edison offers incentives for high-performance

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<sup>3</sup> <https://www.energystar.gov/sites/default/files/2022%20Unit%20Shipment%20Data%20Summary%20Report.pdf>

Lab Grade Freezers, Refrigerators, and ULT freezers. The State of New York's Technical Reference Manual (TRM)<sup>4</sup> contains measure descriptions, baseline efficiencies, compliance efficiency, and other supporting information on ENERGY STAR laboratory grade refrigerators and freezers. NYSERDA recommends that EPA consult the New York TRM, other state TRMs, and market data and incorporate these sources into their analysis.

**NYSERDA is grateful to EPA for incorporating changing industry standards and offers clarification**

NYSERDA commends EPA for incorporating current industry standards, terms, and definitions into this revision, such as ANSI/NSF Standard 456-2021a, to help ensure consistency and clarity of communication with manufacturing partners. One issue for clarification is that the term "setpoint" 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 refers to the full temperature range as setpoint temperature, which has the potential to confuse the market.

**NYSERDA recommends EPA add undercounter ULT freezers in the 3-10 cu ft size range and offers additional scoping suggestions**

In addition to becoming larger and more efficient over time, the lab refrigerator and freezer industry has evolved in terms of model size and configuration. For instance, Version 1.1 was designed for larger ULT freezers (greater than 15 cu ft) since smaller sizes were not available in the market. Today, there is a robust market for undercounter ULT freezers in the 3-10 cu ft size range. There are other lab freezer and refrigerator equipment categories that could potentially also be added to the scope of this specification, such as combination refrigerator/freezer units and cryogenic freezers. Splitting Lab Grade Freezers into categories by temperature would also provide more precise criteria, allowing apples-to-apples comparisons.

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,



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New York State Energy Research and Development Authority (NYSERDA)

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<sup>4</sup> See New York Joint Utilities, [New York Standard Approach for Estimating Energy Savings from Energy Efficiency Programs – Residential, Multi-Family, and Commercial/Industrial Measures, Version 9, Effective January 1, 2022](#)