UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF AIR AND RADIATION

January 12, 2022

Dear ENERGY STAR® Brand Owner or Other Interested Party:

The U.S. Environmental Protection Agency (EPA) is pleased to announce the selection of Adaptive Commercial Refrigeration Equipment as a 2022 ENERGY STAR Emerging Technology Award category. EPA is proposing performance criteria for these products with the goal of recognizing a promising commercial refrigeration technology that offers purchasers new ways to save energy and protect the environment.

Overview of the Emerging Technology Award
Launched in 2011, the ENERGY STAR Emerging Technology Award raises the profile of innovative technologies that have the potential to significantly reduce greenhouse gas emissions once more widely adopted. The annual Award recognizes promising technologies that may not yet meet key principles associated with product categories eligible for the ENERGY STAR label (e.g., those that are broadly available, cost effective to the consumer) or may represent large improvements in existing ENERGY STAR product categories. As products become more mainstream, Award categories may become candidates for ENERGY STAR specification development. For more information on the Award, visit www.energystar.gov/emergingtech.

Technology Overview – Adaptive Commercial Refrigeration Equipment
In a conventional refrigeration system, the compressor operates at maximum capacity in response to thermal load, or it is turned off when the desired temperature has been achieved. However, the refrigeration load requirements vary widely based on various factors. An advanced adaptive compressor system pairs a variable speed compressor with a sensor-driven control system capable of capacity modulation in response to a varying internal thermal load. As a result, the advanced adaptive compressor system allows for the refrigerator to save a significant amount of energy while regulating the temperature by minimizing wide temperature variations.

In commercial refrigeration applications, self-contained refrigeration products demonstrate the largest savings from employing an advanced adaptive compressor. The per unit efficiency can increase by around 25% with this technology when compared to standard units. If all self-contained commercial refrigeration equipment sold in the U.S. used this technology and met these draft criteria (over models meeting the minimum federal standard), the energy cost savings would grow to approximately $31 million each year.

Draft Criteria for Review
Interested stakeholders are encouraged to provide feedback on the proposed recognition criteria to emergingtech@energystar.gov **by February 8, 2022**. Depending on the comments received, EPA may finalize the criteria or release a subsequent draft for additional stakeholder review. Once final, manufacturers of commercial refrigeration equipment that meet the Award criteria will be able to submit information and data to EPA for review. Upon EPA approval, manufacturers will be able to use the ENERGY STAR Emerging Technology Award logo to promote the product.

Extension of Residential Induction Cooking Tops Emerging Technology Award into 2022
With this letter, to allow the new market to further develop, EPA is extending recognition of the 2021 Award category – Residential Induction Cooking Tops – into 2022. To date, there have been two brands that earned an Emerging Technology Award for Residential Induction Cooking Tops: Beko and Samsung. The qualified products list includes three residential cooking top models and can be found here.

Residential induction cooking tops are 5-10% more efficient than electric resistance and nearly three times as efficient as gas cooktops[1]. If all cooking tops sold in 2021 in the U.S. used this technology and met these draft criteria, the energy cost savings would exceed $125 million, and the energy savings would exceed 1,000 GWh. Please see www.energystar.gov/emergingtech for award criteria and instructions for new submissions.

If you have any questions about the Award or the criteria development process, please contact me, Peter Banwell, at banwell.peter@epa.gov and (202) 343-9408, or Emmy Feldman at emmy.feldman@icf.com and (202) 862-1145.

Best Regards,

Peter Banwell
ENERGY STAR Program

Enclosures:
Draft Criteria for Adaptive Commercial Refrigeration Equipment

[1] Frontier Energy, Residential Cooktop Performance and Energy Comparison Study, July 2019, https://www.smud.org/-/media/Documents/Corporate/About-Us/Energy-Research-and-Development/Induction-Range-Final-Report---July-2019.ashx