

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



OFFICE OF AIR
AND RADIATION

January 13, 2021

Dear ENERGY STAR® Brand Owner or Other Interested Party:

The U.S. Environmental Protection Agency (EPA) is pleased to announce the selection of Residential Induction Cooking Tops as a 2021 ENERGY STAR Emerging Technology Award category. EPA is proposing [performance criteria](#) for these products with the goal of recognizing a promising residential cooktop technology that offers the consumer 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 – Residential Induction Cooking Tops

Conventional residential cooking tops typically employ gas or a resistive electrical element to generate heat, which is then transferred to cookware via thermal conduction. Through this process, gas cooktops transfer energy with efficiencies of approximately 32% while electric cooktops are 75-80% efficient¹. Residential induction cooking tops instead consist of an electromagnetic coil that creates a magnetic field when supplied with an electric current. Compatible cookware, when brought into this field, is warmed internally and transfers the energy with about 85% efficiency, which is 5-10% more efficient than electric resistance and nearly triple that of gas¹. Furthermore, because the source of heat is the cookware itself, the cooktop surface remains cool to the touch and less heat is lost to the surrounding air, providing an additional energy efficiency benefit by reducing the workload for the HVAC equipment. A cooler cooktop surface also makes induction cooking tops safer to work with than other types of cooking tops. Finally, there is an additional convenience benefit because induction cooking technology reaches temperature more quickly and provides faster cook times.

While induction technology has been widely available for some time, the technology has yet to become widely adopted. With an estimated market share of 0.64-1.7%, the sale of induction products lag behind both conventional gas and electric resistance products^{2,3}. As a result, EPA hopes to recognize the significant energy savings potential and other benefits associated with induction cooktops through

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>.

² Department of Energy (DOE), *Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Residential Conventional Cooking Products*, 2016, <https://beta.regulations.gov/document/EERE-2014-BT-STD-0005-0052>.

³ U.S. Energy Information Administration (EIA), *Residential Energy Consumption Survey (RECS)*, 2017, <https://www.eia.gov/consumption/residential/data/2015/hc/php/hc3.1.php>.

the Emerging Technology Award. 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.

Draft Criteria for Review

Interested stakeholders are encouraged to provide feedback on the proposed recognition criteria to emergingtech@energystar.gov by **February 9, 2021**. Depending on the comments received, EPA may finalize the criteria or release a subsequent draft for additional stakeholder review. Once final, manufacturers of cooking tops 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.

Additional Technology Categories for 2021: Advanced Adaptive Compressors

To date there have been four brands that earned an Emerging Technology Award for Advanced Adaptive Compressors: Beko, Blomberg, Samsung and LG Electronics. Between those brands, nineteen models have been recognized to meet the 2020 Emerging Technology Award criteria. With this letter, to allow the new market to further develop, EPA is extending recognition of the 2020 Award category – Advance Adaptive Compressors – into 2021.

An advanced adaptive compressor system in residential refrigeration products, through its pairing of an inverter compressor with a sensor-driven control system capable of cooling capacity modulation, minimizes temperature variations inside of the refrigerator while offering energy savings of at least 25%. 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 Residential Induction Cooking Tops](#)