



# ENERGY STAR® Program Requirements for Commercial Electric Cooktops

## Partner Commitments

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Following are the terms of the ENERGY STAR Partnership Agreement as it pertains to the manufacture and labeling of ENERGY STAR certified products. The ENERGY STAR Partner must adhere to the following partner commitments:

### Qualifying Products

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1. **Comply with current ENERGY STAR Eligibility Criteria**, which define performance requirements and test procedures for Commercial Electric Cooktops. A list of eligible products and their corresponding Eligibility Criteria can be found at [www.energystar.gov/specifications](http://www.energystar.gov/specifications).
2. **Prior to associating the ENERGY STAR name or mark with any product**, obtain written certification of ENERGY STAR certification from a Certification Body recognized by EPA for Commercial Electric Cooktops. As part of this certification process, products must be tested in a laboratory recognized by EPA to perform Commercial Refrigeration testing. A list of EPA-recognized laboratories and certification bodies can be found at [www.energystar.gov/testingandverification](http://www.energystar.gov/testingandverification).

### Using the ENERGY STAR Name and Marks

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3. Comply with current ENERGY STAR Brand Book, which define how the ENERGY STAR name and marks may be used. Partner is responsible for adhering to these guidelines and ensuring that its authorized representatives, such as advertising agencies, dealers, and distributors, are also in compliance. The ENERGY STAR Brand Book are available at [www.energystar.gov/logouse](http://www.energystar.gov/logouse).
4. Use the ENERGY STAR name and marks only in association with certified products. Partner may not refer to itself as an ENERGY STAR Partner unless at least one product is certified and offered for sale in the U.S. and/or ENERGY STAR partner countries.
5. Provide clear and consistent labeling of ENERGY STAR certified Commercial Electric Cooktops. The ENERGY STAR mark must be clearly displayed on the Commercial Electric Cooktops top/front of the product, in product literature (i.e., user manuals, spec sheets, etc.), on product packaging, and on the manufacturer's Internet site where information about ENERGY STAR certified models is displayed.

### Verifying Ongoing Product Certification

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6. Participate in third-party verification testing through a Certification Body recognized by EPA for Commercial Electric Cooktops, providing full cooperation and timely responses. EPA/DOE may also, at its discretion, conduct tests on products that are referred to as ENERGY STAR certified. These products may be obtained on the open market, or voluntarily supplied by Partner at the government's request.

### Providing Information to EPA

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7. Provide unit shipment data or other market indicators to EPA annually to assist with creation of ENERGY STAR market penetration estimates, as follows:
  - 7.1. Partner must submit the total number of ENERGY STAR certified Commercial Electric Cooktops shipped in the calendar year or an equivalent measurement as agreed to in advance by EPA and Partner.

- 7.2. Partner shall exclude shipments to organizations that rebrand and resell the shipments (unaffiliated private labelers).
- 7.3. Partner must provide unit shipment data segmented by meaningful product characteristics (e.g., type, capacity, presence of additional functions) as prescribed by EPA.
- 7.4. Partner must submit unit shipment data for each calendar year to EPA or an EPA-authorized third party, preferably in electronic format, no later than March 1 of the following year.

Submitted unit shipment data will be used by EPA only for program evaluation purposes and will be closely controlled. If requested under the Freedom of Information Act (FOIA), EPA will argue that the data is exempt. Any information used will be masked by EPA so as to protect the confidentiality of the Partner.

8. Report to EPA any attempts by recognized laboratories or Certification Bodies (CBs) to influence testing or certification results or to engage in discriminatory practices.
9. Notify EPA of a change in the designated responsible party or contacts within 30 days using the My ENERGY STAR Account tool (MESA) available at [www.energystar.gov/mesa](http://www.energystar.gov/mesa).

### **Performance for Special Distinction**

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In order to receive additional recognition and/or support from EPA for its efforts within the Partnership, the ENERGY STAR Partner may consider the following voluntary measures, and should keep EPA informed on the progress of these efforts:

- Provide quarterly, written updates to EPA as to the efforts undertaken by Partner to increase availability of ENERGY STAR certified products, and to promote awareness of ENERGY STAR and its message.
- Consider energy efficiency improvements in company facilities and pursue benchmarking buildings through the ENERGY STAR Buildings program.
- Purchase ENERGY STAR certified products. Revise the company purchasing or procurement specifications to include ENERGY STAR. Provide procurement officials' contact information to EPA for periodic updates and coordination. Circulate general ENERGY STAR certified product information to employees for use when purchasing products for their homes.
- Feature the ENERGY STAR mark(s) on Partner website and other promotional materials. If information concerning ENERGY STAR is provided on the Partner website as specified by the ENERGY STAR Web Linking Policy (available in the Partner Resources section of the ENERGY STAR website), EPA may provide links where appropriate to the Partner website.
- Ensure the power management feature is enabled on all ENERGY STAR certified displays and computers in use in company facilities, particularly upon installation and after service is performed.
- Provide general information about the ENERGY STAR program to employees whose jobs are relevant to the development, marketing, sales, and service of current ENERGY STAR certified products.
- Provide a simple plan to EPA outlining specific measures Partner plans to undertake beyond the program requirements listed above. By doing so, EPA may be able to coordinate and communicate Partner's activities, provide an EPA representative, or include news about the event in the ENERGY STAR newsletter, on the ENERGY STAR website, etc. The plan may be as simple as providing a list of planned activities or milestones of which Partner would like EPA to be aware. For example, activities may include: (1) increasing the availability of ENERGY STAR certified products by converting the entire product line within two years to meet ENERGY STAR guidelines; (2) demonstrating the economic and environmental benefits of energy efficiency through special in-store displays twice a year; (3) providing information to users (via the website and user's manual) about energy-saving features and operating characteristics of ENERGY STAR certified products; and (4)

building awareness of the ENERGY STAR Partnership and brand identity by collaborating with EPA on one print advertorial and one live press event.

- Join EPA's SmartWay Transport Partnership to improve the environmental performance of the company's shipping operations. The SmartWay Transport Partnership works with freight carriers, shippers, and other stakeholders in the goods movement industry to reduce fuel consumption, greenhouse gases, and air pollution. For more information on SmartWay, visit [www.epa.gov/smartway](http://www.epa.gov/smartway).
- Join EPA's Green Power Partnership. EPA's Green Power Partnership encourages organizations to buy green power as a way to reduce the environmental impacts associated with traditional fossil fuel-based electricity use. The partnership includes a diverse set of organizations including Fortune 500 companies, small and medium businesses, government institutions as well as a growing number of colleges and universities. For more information on Green Power, visit [www.epa.gov/greenpower](http://www.epa.gov/greenpower).



# ENERGY STAR® Program Requirements Product Specification for Commercial Electric Cooktops

## Eligibility Criteria Version 1.0

Following is the **Version 1.0** product specification for ENERGY STAR certified commercial electric cooktops. A product shall meet all of the identified criteria if it is to earn the ENERGY STAR.

**1) Definitions:** Below are the definitions of the relevant terms in this document.

- A. Commercial Electric Cooktop: A commercial cooking unit that provides direct heat to a cooking container (i.e., a pot or pan), or works with the cooking container to generate heat, which is transferred to the product within the cooking container. There are multiple variations of these devices which utilize electric resistance heating or electric inductive heating.

### **Cooktop Types**

- B. Cooktop Electric Element (Open Coil Cooktops): Open coil electrical elements supported to withstand the weight of filled cooking container.<sup>1</sup>
- C. Counter Top Cooktop Unit: A cooktop intended to be operated on a counter or table and does not include a standard conventional or convection oven base.
- D. Heavy-Duty Range: An appliance used for pot or pan surface cooking, griddling, frying, broiling, steaming, baking, roasting, and reheating food products with a standard oven or convection oven. It is of the most durable construction, varying in size, offers increased heat input than medium (restaurant) or specialty ranges. Typical industry widths are 32 in. (812 mm), 34 in. (863 mm), and 36 in. (914 mm) for electric ranges. The top cooking surface can be 1/3, 2/3, or full top options of any style noted.<sup>1</sup>
- a. Commercial Electric Range: A multi-purpose unit (integrated cooking platforms as a single unit) that may include an electric commercial oven positioned directly beneath the commercial electric cooktop, as a base.
- E. French Top: Sheathed electric heating element with permanent cover over entire heating element; round and sealed to the range top to resist drips and splash.<sup>1</sup>
- F. Hot Top/Hot Plate: Flat cast iron surface sometimes called a “boiling plate” or “uniform heat top” with heat transferred from electric heating elements under the cooking surface where pots are set to warm or keep hot food contained.<sup>1</sup>
- G. Induction Cooktop: A commercial or institutional food cooking or warming device using magnetic induction as the heating energy source, which includes countertop, counter drop-in, and floor standing units.<sup>2</sup>
- a. Counter Top (or Tabletop) Unit: An induction unit intended to be operated on a counter or table.<sup>2</sup>

<sup>1</sup> Modified definition from ASTM F2521-09 (2022) *Standard Specification for Heavy-Duty Ranges, Gas and Electric*.

<sup>2</sup> ASTM F2834-10a (2017) *Standard Specification for Induction Cooktops, Counter Top, Drop-in Mounted, or Floor Standing*.

- b. Counter Drop-In Unit: An induction unit intended to be installed in a counter top or application specific cut-out.<sup>2</sup>
- c. Floor Standing Unit: An induction unit intended to be operated standing on the floor.<sup>2</sup>

### **Preheat Value**

- H. Measured Energy Input Rate: The electrical power (measured in Watts and reported in kW) to preheat and/or maintain the desired temperature of the water within the cooking vessel. Preheating is done at the maximum control setting. Maintaining temperature may be done at less than the maximum control setting.<sup>3</sup>
- I. Measured Energy Input: The amount of electrical energy (measured in Joules) to preheat and/or maintain the desired temperature of the water within the cooking vessel. Preheating is done at the maximum control setting. Maintaining temperature may be done at less than the maximum control setting.
- J. Heat-up Temperature Response: The temperature increase on the surface of a plate during the test period in accordance with the heat-up temperature-response test.<sup>4</sup>

### **Energy Efficiency Metric**

- K. Cooking Energy-Efficiency: Quantity of energy imparted to the specified load (20 lbs of water at 70°F to 200 °F), expressed as a percentage of energy consumed by the cooktop during the cooking (boil) event. Also known as the “Cooking (Boil) Energy Efficiency” or “Boil Test”.<sup>5</sup>
- L. Cooking Energy: Energy consumed by the cooking unit as it is used to raise the temperature of water in a cooking container under full-input rate.<sup>4</sup> Expressed in kWh.
- M. Production Capacity: Maximum rate at which the commercial electric cooktop unit heats water in accordance with the cooking energy-efficiency test, expressed in pounds per hour (lbs/hr).<sup>6</sup>
- N. Simmer Energy-Efficiency: Quantity of energy imparted to the specified load (20 lbs of water), expressed as a percentage of energy consumed by the cooktop for 30min at a steady input rate while maintaining water at an average 200°F.<sup>7</sup>
- O. Simmer Energy Rate: The electrical power (measured in Watts and reported in kW) to maintain the desired temperature (an average of 200°F) of the water within the cooking vessel throughout the 30min simmering period.<sup>8</sup>
- P. Simmer Average Water Temperature: The average water temperature (200 ± 3°F) in a cooking container throughout the simmer test period.

### **Certification Terms**

- Q. Cooking Container: A stainless-steel vessel used to hold the water being heated by the cooktop. The ASTM F1521-22 Section 6.3 dimensions for testing are 13in (330mm) diameter, 20qt (19L), sauce pot with matching lid. The bottom of the pot shall be flat to within 0.0625in (1.6mm) over the diameter. The inside diameter (ID) shall be measured to confirm the specified 13in diameter of the cookware.

<sup>3</sup> Modified definition from ASTM F1521-22 *Standard Test Methods for Range Tops*. Amended Section 10.2.

<sup>4</sup> ASTM F1521-22 *Standard Test Methods for Range Tops*.

<sup>5</sup> ASTM F1521-22 *Standard Test Methods for Range Tops*. Amended Definition 3.1.3 and Sections 10.5.4 and 10.5.8.

<sup>6</sup> Modified definition from ASTM F1521-22 *Standard Test Methods for Range Tops*. Amended Definition 3.1.7 and Section 11.8.1.

<sup>7</sup> Modified ASTM F1521-22 *Standard Test Methods for Range Tops*. Amended Section 4.3.

<sup>8</sup> Modified ASTM F1521-22 *Standard Test Methods for Range Tops*. Amended Section 10.6.

- R. Heat-Up Time: The time required to heat the allotted volume of water from 70°F to 200°F, per ASTM F1521-22.
- S. Hob: An individual heating element or cooking zone that is independently controlled; typically associated with an individual induction coil.<sup>9</sup>
- T. Product Family: Individual models offered within a product line based on the same engineering design, including number of hobs, as applicable. Acceptable differences within a product family for purposes of certification include controls knobs and any aesthetic additions that have no impact on the cooktop energy consumption in any operating mode(s).
- U. Set-Back Mode (Off Mode): A feature that includes automatic temperature reduction after periods of non-use. In addition, the feature may also incorporate the reduction or elimination of energy consumption during periods of non-use.

## 2) Scope:

- A. Included Products: Products that meet the definition of a commercial electric cooktop are eligible for ENERGY STAR certification, including commercial electric ranges. A commercial electric range may be certified if the commercial cooktop portion of the unit meets the criteria set forth in this specification and the commercial electric oven portion is certified to the ENERGY STAR Commercial Ovens specification version currently in effect.

Products shall be third-party certified to two requirements prior to ENERGY STAR certification:

- 1) Minimum food protection and sanitation requirements under NSF/ANSI Standard 4, *Commercial Cooking, Rethermalization and Powered Hot Food Holding and Transport Equipment*; and,
  - 2) Safety requirements under UL 197 *Standard for Safety Commercial Electric Cooking Appliances*.
- B. Excluded Products: Conventional cooking tops, as defined by the U.S. Department of Energy (DOE) at Title 10 Code of Federal Regulations (CFR) 430.2 are not eligible for ENERGY STAR certification under this specification. Conventional cooking top means a category of cooking products (as defined in 10 CFR 430.2) which is a household cooking appliance consisting of a horizontal surface containing one or more surface units that utilize a gas flame, electric resistance heating, or electric inductive heating. This includes any conventional cooking top component of a combined cooking product. 10 CFR 430.2 Cooktops designed for other non-commercial applications are not eligible for ENERGY STAR certification under this specification. Gas ranges, gas ovens, or gas cooktops (i.e., gas hot tops and open top gas burners); griddles or planchas; soup wells; woks; dedicated warming/holding equipment; and other cooktop types that do not meet the criteria are ineligible for ENERGY STAR certification under this specification.

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<sup>9</sup> Modified definition from ASTM F2834-10a (2017) *Standard Specification for Induction Cooktops, Counter Top, Drop-in Mounted, or Floor Standing*. Amended Definition 3.1.4.

### 3) Certification Criteria:

#### A. Commercial Electric Cooktop Cooking (Boil)-Energy Efficiency Requirements:

<b>Table 1: Energy Efficiency Requirements for Commercial Electric Cooktops</b>	
<b>Individual Hob Performance*</b>	
<b>Cooking (Boil) Energy Efficiency, %</b>	<b>≥ 80%</b>
* The ASTM F1521-22 test method indicates to start the test on the hob (or cooking unit/zone) closest to front and left (Section 10.4.2), then to repeat the test for each type of hob (or cooking unit/zone) on the range top (Section 10.4.11). The intent of the method is to test each hob individually. ENERGY STAR certification will rely on all individual hobs meeting the cooking (boil) energy efficiency level.	

<b>Table 2: Energy Efficiency Requirements for Commercial Electric Ranges</b>	
<b>Commercial Cooktop</b>	Must meet energy efficiency requirements per Table 1 above.
<b>Commercial Oven</b>	Must be certified to the ENERGY STAR Commercial Ovens specification version currently in effect.

#### B. Significant Digits and Rounding:

- a. All calculations shall be carried out with directly measured (unrounded) values. Only the final result of a calculation shall be rounded.
- b. Unless otherwise specified in this specification, compliance with certification criteria shall be evaluated using exact values without any benefit from rounding.
- c. Cooking (Boil) Energy Efficiency: Calculated values that are submitted for reporting on the ENERGY STAR website shall be rounded to the nearest significant digit as expressed in the certification criteria.

#### C. Additional Reporting Requirements:

- a. Total number of hobs of the cooktop shall be reported.
- b. Nameplate input rate (in kW) of the cooktop shall be reported.
- c. Area (in square inches) of the individual hobs shall be reported.
- d. Heat-up time (in minutes) of the individual hobs shall be reported from ambient to production-ready temperature (70°F to 200°F).
- e. Production capacity (in lbs. of water per hour) of the individual hobs shall be reported.
- f. Simmer test results (energy rate in kW and energy efficiency in %) shall be reported.
- g. For induction cooktops, the sub-category of the unit (countertop, drop-in, and/or floor standing) shall be specified, if applicable.

### 4) Test Requirements:

#### A. Representative models shall be selected for testing per the following requirements:

- a. For certification of an individual product model, the representative model shall be equivalent to that which is intended to be marketed and labeled as ENERGY STAR.
- b. For certification of a product family, any model within that product family can be tested and

serve as the representative model. When submitting product families, manufacturers continue to be held accountable for any efficiency claims made about their products, including those not tested or for which data was not reported.

- B. When testing commercial electric cooktops, the following test method shall be used to determine ENERGY STAR certification.

<b>Table 3: Test Method for ENERGY STAR Certification</b>		
<b>Cooktop Category</b>	<b>ENERGY STAR Requirement</b>	<b>Test Method Reference</b>
Commercial Electric Cooktops	Cooking (Boil) Energy Efficiency	ASTM F1521-22 <i>Standard Test Methods for Performance of Range Tops.</i>

**Note:** Partner must ensure the product continues to meet the certification criteria through subsequent firmware, software, or other changes to the certified product, where applicable.

- C. For electric cooktops with dual voltage, multiple voltage-versatility and for those that are available in different voltage configurations, the cooktop shall be evaluated as separate appliances in accordance with ASTM F1521-22, see Section 9.0, Note 3<sup>10</sup>, and shall meet the minimum energy efficiency level in the least energy efficient voltage the unit is designed to operate.

- 5) **Effective Date:** This Version 1 ENERGY STAR Commercial Electric Cooktops specification is effective on August 31, 2023. To certify as ENERGY STAR, a product model shall meet the ENERGY STAR specification in effect on the model's date of manufacture. The date of manufacture is specific to each unit and is the date on which a unit is considered to be completely assembled.
- 6) **Future Specification Revisions:** EPA reserves the right to change the specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment. In keeping with current policy, revisions to the specification are arrived at through industry discussions. In the event of a specification revision, please note that ENERGY STAR certification is not automatically granted for the life of a product model.

<sup>10</sup> ASTM F1521-22 Section 9.0, Note 3 states: "If an electric range top is rated for dual voltage (for example, 208/240), the range top should be evaluated as two separate appliances in accordance with these test methods."