



# ENERGY STAR® Program Requirements For Commercial Coffee Brewers

## Partner Commitments

Following are the terms of the ENERGY STAR Partnership Agreement as it pertains to the manufacture and labeling of ENERGY STAR qualified 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 coffee brewers. 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 qualification from a Certification Body recognized by EPA for commercial coffee brewers. As part of this certification process, products must be tested in a laboratory recognized by EPA to perform commercial coffee brewer 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 Identity Guidelines, 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 Identity Guidelines are available at [www.energystar.gov/logouse](http://www.energystar.gov/logouse).
4. Use the ENERGY STAR name and marks only in association with qualified products. Partner may not refer to itself as an ENERGY STAR Partner unless at least one product is qualified 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 coffee brewers.
  - 5.1. The ENERGY STAR mark must be clearly displayed on the top/front of the product (on product labels and/or as a permanent mark), in product literature (i.e., user manuals, spec sheets, etc.) and on the manufacturer's Internet site where information about ENERGY STAR certified models is displayed.
  - 5.2. It is also recommended that the mark appear on the product packaging.

### Verifying Ongoing Product Qualification

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6. Participate in third-party verification testing through a Certification Body recognized by EPA for commercial coffee brewers, providing full cooperation and timely responses. EPA 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 coffee brewers shipped in the calendar year or an equivalent measurement as agreed to in advance by EPA and Partner. Partner shall exclude shipments to organizations that rebrand and resell the shipments (unaffiliated private labelers).
- 7.2. Partner must provide unit shipment data segmented by meaningful product characteristics (e.g., type, capacity, presence of additional functions) as prescribed by EPA.
- 7.3. 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 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**

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 qualified 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 qualified 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 qualified 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 qualified 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 qualified 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 qualified 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 qualified 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).



# EPA ENERGY STAR® Program Requirements Product Specification for Commercial Coffee Brewers

## Eligibility Criteria Version 1.1

Following is the **Final Version 1.1** product specification for ENERGY STAR certified commercial coffee brewers. 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 Coffee Brewers: Commercial appliances designed to heat water and brew coffee.<sup>1</sup>
  - B. Residential Coffee Brewers: Residential appliances designed to heat water and brew coffee.
  - C. Brew Event: The sequence of brewing a single cup (*Type 1*) or batch (*Type II*) of coffee, starting with the initiation of a brew event by the user, and including the time for the remaining water to drip through the filter.<sup>2</sup>
  - D. Brew Volume: The volume of brewed coffee per brew event. May be expressed in fluid ounces or gallons. May also be referred to as brew capacity.
  - E. Tank Capacity: The volume of water the brewer tank can accommodate. Expressed in gallons.

### **Commercial Coffee Brewer Products**

- F. Bean-to-Cup: Single serving commercial coffee brewers designed to automatically measure and grind whole coffee beans per brew event.
- G. Liquid Coffee Dispensers: Single serving dispensers that mix coffee concentrate with hot water prior to delivery.
- H. Powdered Drink Dispensers: Single serving dispensers that mix powdered coffee (i.e. Cappuccino) with hot water prior to delivery.
- I. Espresso Machines: Machines that prepare single servings of espresso coffee through high-pressure steam.
- J. Type I: A single serving commercial coffee brewer designed to use brewer-specific, single-use packages of pre-ground coffee and has a standard brew volume of 6 to 24 fluid ounces per brew event.
- K. Type II: A batch commercial coffee brewer designed to use loose, ground coffee and a re-usable or single-use coffee filter, and has a standard brew volume of >24 to 384 fluid ounces per brew event. Type II brewers shall not use disposable packages of pre-ground coffee.
  - a. Small Batch Type II: Brew volume capacity with a range of 24oz. – 128oz.
  - b. Medium Batch Type II: Brew volume capacity with a range of >128oz. – 256oz.
  - c. Large Batch Type II: Brew volume capacity of >256oz. – 384oz.
- L. Type II with Warming Plate(s): A batch commercial coffee brewer (Type II) with the addition of one or more decanter warming plates.

<sup>1</sup> American Society for Testing and Materials (ASTM) Standard F2990-12 *Standard Test Method for Commercial Coffee Brewers*.

<sup>2</sup> Ibid.

- M. Type III: An urn or satellite commercial coffee brewer and has a standard brew volume of greater than 384 oz. per brew event. These products may contain more than one dispense station for simultaneous or sequential dispensing into more than one holding reservoir.
- N. Urn Coffee Brewers: Bulk commercial coffee brewers that brew into large, self-contained, insulated warming vessels with internal heating elements to maintain product temperature. Warming vessels may also use heat transferred from the hot water reservoir to maintain optimal serving temperature.
- O. Satellite Coffee Brewers: Bulk commercial coffee brewers that brew into large, removable vessels without internal heating elements. These products may include a separate heated docking station for remote use.
- P. Warming Plate: A heated metal plate intended to hold a non-insulated coffee decanter at optimal serving temperature after a brew event.

### **Energy Efficiency Metrics**

- Q. Normalized Heavy-Use Brew Energy Rate: The average rate of the coffee brewer energy consumption during a brew cycle, calculated across brew volumes for comparison. Also referred to as normalized brew energy rate.
- R. Normalized Ready-to-Brew Idle Energy Rate: The average rate of the coffee brewer energy consumption while it is maintaining or holding at a stabilized ready-to-brew operating temperature. Also referred to as normalized idle energy rate.
- S. Energy Save Mode: An optional low power mode that is designed by the manufacturer to be different from and use less energy than ready to brew state. The hot water tank temperature shall not drop below 140°F in this mode of operation.

### **Water Conditions**

- T. Internal Tank Water Temperature: The average temperature of the water held in the tank. Internal water tank temperature should be measured and recorded during the ready-to-brew idle mode, energy save mode (if applicable), and heavy-use brew tests. (This may also be referred to as the coffee preparation temperature.)
- U. Serving Temperature: The maximum temperature of the beverage delivered from a brewing machine, measured at the dispensing outlet. The serving temperature of the brewed coffee should be measured, post-extraction during the heavy-use brew test.

### **Certification Terms**

- V. Product Family: Individual models offered within a product line based on the same engineering design, including brew capacity and number of warming plates, as applicable. Acceptable differences within a product family for purposes of certification include aesthetic additions that do not impact coffee brewer energy consumption while in operation or during any idle situation. The addition of energy save mode options does not preclude products from a product family if all other design elements remain constant.

## **2) Scope:**

- A. Included Products: Products, that meet the definitions of Type II Commercial Coffee Brewers as specified herein, including Satellite Coffee Brewers without a heated docking station, are eligible for ENERGY STAR certification.

To ensure only eligible coffee brewers qualify under this specification, products shall be third-party certified to UL 197, *Standard for Commercial Electric Cooking Equipment*.

B. Excluded Products: This specification is intended for commercial coffee brewers. Products designed for residential applications are ineligible for ENERGY STAR under this specification. The following commercial coffee brewers are ineligible for ENERGY STAR:

- a. Type I Commercial Coffee Brewers.
- b. Type III Commercial Coffee Brewers.
- c. Bean-to-Cup Brewers.
- d. Liquid Coffee Dispensers.
- e. Powdered Coffee Dispenser.
- f. Espresso Machines.
- g. Urn Brewers.

**3) Certification Criteria:**

A. Energy Efficiency Requirements:

<b>Table 1: Energy Efficiency Requirements Type II Commercial Coffee brewers</b>	
Normalized Ready-to-Brew Idle Energy Rate	≤ 65 watts/gal
Normalized Heavy-Use Brew Energy Rate	≤ 350 watt-hrs/gal

B. Normalized Calculations:

- a. Ready-to-Brew Idle Rate and Heavy-Use Brew Rate: The following calculations shall be used to normalize the ready-to-brew idle and heavy-use brew energy rates:

Normalized Ready-to-Brew Idle Energy Rate, W/gal:

$$q_{idle,n} = \frac{q_{ready}(W)}{Tank\ Capacity\ (gal)}$$

Normalized Heavy-Use Brew Energy Rate, Wh/gal:

$$q_{brew,n} = \frac{q_{brew}(W)}{PC\ \left(\frac{gal}{h}\right)}$$

Where:

- $q_{ready}$  = Ready-to-brew energy rate (W)
- Tank Capacity = (gal)
- $q_{brew}$  = Heavy-use brewing energy rate (W)
- PC = Production capacity of the coffee brewer (gal/hr)

C. Significant Digits and Rounding:

- a. All calculations shall be carried out with directly measured (unrounded) values.
- b. Unless otherwise specified, compliance with specification limits shall be evaluated using exact values without any benefit from rounding.

- c. Normalized Heavy-Use Brew Energy Rate: Calculated heavy-use brew energy rate values that are submitted for reporting on the ENERGY STAR website shall be rounded to the nearest one hundredth (0.01).
- d. Normalized Ready-to-Brew Idle Energy Rate: Calculated idle rate values that are submitted for reporting on the ENERGY STAR website shall be rounded to the nearest one hundredth (0.01).

**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 coffee brewers, the following test method shall be used to determine ENERGY STAR certification.

<b>Table 2: Test Method for ENERGY STAR Certification</b>		
<b>Category</b>	<b>ENERGY STAR Requirement</b>	<b>Test Method Reference</b>
Commercial Coffee Brewers	Normalized Heavy-Use Brewing Energy Rate; Normalized Ready-to-Brew Idle Energy Rate	ASTM F-2990-12, <i>Standard Test Method for Commercial Coffee Brewers</i>

- C. Products with a single heated water supply tank and more than one brew head shall undergo heavy-use brew testing with each brew head dispense station brewing at maximum capacity simultaneously. If a product has individual designated heated water supply tanks for each brew head, then only one brew head shall be tested in accordance with the heavy-use test procedure. The heavy-use brew energy rate and capacity shall then be multiplied by the number of brew heads in the machine.
- D. All auxiliary electrical components (i.e., warming plates, lighting, etc.) shall be activated during testing. The total energy consumption of the equipment is required for ENERGY STAR certification.
- E. Additional Reporting Requirements:
  - a. The pre-heat time and energy for all commercial coffee brewers shall be reported.
  - b. The production capacity (gal/h) for all commercial coffee brewer heavy-use brew tests shall be reported.
  - c. The average internal water tank temperature operating in the ready-to brew idle mode shall be reported.
  - d. The average internal water tank temperature during heavy-use brew tests shall be reported.
  - e. The maximum serving temperature during heavy-use brew tests shall be reported.
  - f. Commercial coffee brewers that include energy saving feature(s) and that meet the minimum

requirement of the energy save mode definition in Section 1.S. shall be reported, if applicable.

g. The normalized idle rate (watts/gal) in an energy save mode may be reported, if applicable.

- 5) **Effective Date:** The ENERGY STAR Commercial Coffee Brewer Version 1.1 Specification shall take effect immediately. To qualify for 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.