



Serving the Vending and Refreshment Services Industry

September 5, 2014

VIA EMAIL ONLY: coffeebrewers@energystar.gov

Mr. Christopher Kent
ENERGY STAR Specification Development Lead
United States Environmental Protection Agency
Washington, DC

Dear Christopher,

Below please find a response to the discussion questions posed in the recently published ENERGY STAR® Commercial Coffee Brewers Draft Specification Framework Document. This response is a compilation of comments from the major coffee brewer manufacturers and coffee suppliers in the United States.

Section: Definitions

- 1. Are the proposed capacities per brew event listed in Section C.3-5, for brewer Type's I, II, and III, reasonable and representative? Should other ranges of brew capacities be identified for purposes of delineating the product types?**

Answer: In the ASTM standard, Type II includes 12-384oz, and delineates small, medium, and large batch sizes. It may be important to further delineate number of brew heads.

Also, there should be a clarification or an additional type of brewer added. For type II it should be listed as a "small batch" brewer '50oz – 85oz', a "large batch" brewer '64oz – 256oz', and an 'extra-large' which would brew 256oz or greater. The EPA should also explain whether or not powdered drink dispensers (cappuccino) are being included and/or considered in this draft specification.

It is also recommended that another product entitled "Liquid Coffee Dispensers" be added. These dispensers use a coffee concentrate to mix with hot water before delivery to the cup. They are typically used for high volume applications.

When describing Type III, it should be noted that products that fit the designation may contain two dispense stations for simultaneous dispensing or serial dispensing into two holding reservoirs.

Also, it is recommended that a clause be added to the framework document or ASTM specification indicating that a single "brew event" include each station brewing serially (immediately brewing the next station when the previous station has finished dispensing).

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Headquarters: 20 N. Wacker Drive, Suite 3500 • Chicago, IL 60606-3102 • Voice: 312/ 346-0370 • Fax: 312/ 704-4140
Eastern Office: 1600 Wilson Blvd., Ste. 650 • Arlington, VA 22209 • Voice: 571/346-1900 • Fax: 703/836-8262
Southern Office: P.O. Box 4110 • Alpharetta, GA 30023 • Cell: 678/232-7941
Western Office: 80 South Lake Avenue, Suite 538 • Pasadena, CA 91101 • Voice: 626/229-0900 • Fax: 626/229-0777

2. **The ASTM test method states that typically, Type I brewers have a standard brew volume of 6 – 8 oz. In this Framework, EPA provided a small buffer, expanding the Type I volume range to 12 oz. In an effort to delineate between Type I and Type II brewers, EPA is considering closing the gap between the maximum volume for Type I and the minimum volume for Type II. Is there an overlap in terms of brew volume between the two types?**

Answer: The industry believes that 12oz volume is reasonable for single serve and that there should be no overlap in brew volume between Types I and II. However, some in the industry also believe that the range of single cup coffee brewers should be expanded to include ranges of up to 24 fluid ounces.

It should also be noted that there are “batch style” coffee brewers that may use re-usable and washable filters. They are often constructed of a wire mesh material/screen. These methods likely should not be disqualified from being Type II.

There are products that fit the designation for Type II, however, they may also contain two dispense stations for simultaneous dispensing.

3. **Are there other types of products that meet the definition of commercial coffee brewers that are not identified in this document that EPA should be made aware of? Are there other ways in which EPA can further delineate between residential and commercial coffee brewers within the definitions provided?**

Answer: It is recommended that EPA include a production capacity criteria (amount brewed in 1 hour) to differentiate between at-home and away-from-home coffee makers. Also, the definition of Type II should be updated to for other types of packaging systems for use in a batch style brewer (see below for addition).

Type II: A batch commercial coffee brewer designed to use loose, ground coffee and a single-use paper coffee filter or a filter/package designed for brewing a batch of coffee, and has a standard brew volume of 64 to 384 fluid ounces per brew event.

Further, UL has a standard (UL 197) that applies to commercial rated equipment. It does not apply to residential equipment (that is covered by UL 1082). However, some coffee brewers may be rated for both. In such a case, it is recommended testing these as commercial coffee brewers. Amperage rating may also be used to further designate residential from commercial (i.e. >15 Aac is considered commercial).

4. **Are all modes of operation for Type I and Type II brewers identified and appropriately defined? Are there alternative energy saving modes that are not defined in this document?**

Answer:

A. Auto-on/auto-off is not represented, and should be included.

B. Idle mode and standby mode should not be used interchangeably and the standby mode also needs to be defined (see below). Also, the Idle mode definition as written in framework is acceptable.

C. Clarification of meaning of “on” in the **Energy Save Mode** definition should be provided to make clear if it is referring to a “ready-to-brew” mode, “standby” mode, or “sleep” mode?

Please see below language from EU Energy Using Product initiative for other categories: (http://www.eup-network.de/fileadmin/user_upload/Produktgruppen/Lots/Working_Documents/BIO_EuP_Lot_25_Task_1_Final_v2_July2011.pdf)

“Standby Mode” means that the equipment is connected to the main power source, depends on energy input from the main power source and provides only the following functions which may remain turned on for an indefinite period of time: Reactivation function, and/or Information or status display.

“Information or status display” is a continuous function providing information or indicating the status of the equipment on display, including clocks.

“Reactivation function” is a function that facilitates the activation of other modes, such as the on mode, activated by a remote switch, including remote control, internal sensor or timer to a condition providing additional functions, including the main function.

Ready mode: In this mode, coffee can be produced immediately by pushing a button (the process should begin in less than approximately three seconds). Coffee machines are still in ready mode when keeping coffee hot. Note that power input in ready mode is not constant; it can rise above 1 000 W when heating, then sink back to a low value between heating periods. If the cup-warming plate of a machine can be switched on or off in the programme menu, this results in two different ready mode values. New machines with flow-type heaters have no defined ready mode; the ready state may look like a standby mode.

Standby mode: When a coffee machine is not used, it is generally in standby mode or switched off. In standby mode, water heating is inactive. The coffee machine is still supplied with electricity, and a time-controlled function can be implemented. Some coffee machines can have two different standby values, e.g. before and after the auto-power down.

Off mode: Off mode is defined as the lowest power input when the mains switch of the machine is switched off. Some coffee machines still use energy in this mode. With a soft-off switch, the machine is switched off electronically and usually maintains a minimal power input for supplying the electronic circuit. A hard-off switch disconnects the machine from the mains, so that power input is zero.

Auto-power down (into standby mode) and auto-power off (into off mode): The auto-power down function consists in automatically ending the heating of a machine after a certain period of inactivity. In some models, different delays can be pre-programmed or set by the user using a menu; in others, there is no power management system or there is only one fixed setting. This should not be confused with an energy-saving function (see below), which reduces temperature only.

Energy-saving function (“eco-mode”): some models of coffee machine have this function, which consists in lowering the temperature of the heating elements after a given delay of inactivity. The energy consumption of the machine is then lower than in ready mode and allows a quick preparation of coffee, if needed, as the heating elements are not cold as in the standby mode or off mode. The distinction between energy-saving mode and standby mode is that energy saving mode is a mid-way point between ready mode and standby, where heating functions are provided but at an optimised temperature to compromise between quick service upon re-initialisation and energy savings due to lower temperatures maintained over extended periods.

5. Are there additional features that do not have an impact on energy performance that are not listed in the proposed product family definition and should be identified?

Answer: Controls may have an impact on energy performance. It is recommended that “controls” be clearly defined. Also, the number of brew size options should also not impact energy performance.

Also, when defining “Satellite Coffee Brewers” it is recommended that the definition be revised to read “with or without internal heating elements”. Many products use a vacuum sealed, or highly insulated tank eliminating the need for heat to be applied to keep the coffee warm for extended periods of time.

When defining “Urn Coffee Brewers” it is recommended the EPA note that warming vessels may use heat from the hot water reservoir to keep the brewed coffee at serving temperature.

Some industry leaders recommend that an additional metric be added to the “Modes of Operation and Metrics” section to include: Preheat. This will capture the amount of energy and energy rate required for the system to turn on and reach a “Ready-to-Brew” state. This test is described in § 10.3 of ASTM F2990-12 Standard Test Method for Commercial Coffee Brewers. This test method should also be completed to quantify the amount of energy required to return from Energy Save mode to Ready-to-Brew.

Section: Eligible Products

- 1. Are the proposed included and excluded products and their corresponding definitions understandable and clear, such that there is no confusion over intended scope?**

Answer: NSF certification should not be required, as commercial use may not solely be defined as use in a restaurant environment. Further, EPA should ensure that efficiencies can be compared with a brewer that brews 64oz max and a brewer that brews 256oz max. These brewers have different amperage/watt ratings which may create an environment where their efficiencies cannot be equally compared.

Section: Energy Efficiency Criteria

- 1. EPA is interested in suggestions on how types of products might be best binned for fair efficiency comparison.**

Answer: Two options could be production capacity and LCD vs. non-LCD coffee makers. Also, products might be binned for fair comparison based on coffee holding methods (i.e. glass carafe or insulated), product availability (brew time excluding recovery), and hot water reservoir vs. burp-and-boil.

- 2. Do stakeholders agree with the heavy-use brew rate and ready-to-brew idle rate metrics as two key requirements used to determine qualified products? Are there other criteria that EPA should consider based on the ASTM F-2990-12 test method?**

Answer: Even though AHAM is for household appliances, that standard should be referenced. (The Association of Home Appliance Manufacturers (AHAM) released the American National Standards Institute (ANSI)/AHAM CM-1-2007 - Method for Measuring Performance of Household Coffee Makers (**ANSI11/AHAM12 CM-1-2007** - Method for Measuring Performance of Household Coffee Makers))

It is also recommended that the EPA review the EUP initiative out of Europe for comparing energy use and calculating energy savings.

As stated previously, clear distinction should be made between idle energy use and standby energy use (see definition of standby in Section 1, Question 3).

- 3. What, if any, power management features are manufacturers incorporating into current product designs? Are there any energy saving features being considered for future designs? How might EPA incentivize manufacturer efforts? Is there data that supports the energy saving potential of engaging these features?**

Answer: The auto-on/auto-off features, as well as energy saving modes automatically programmed can have significant energy savings. Other features may include RFID identification tags to determine if a warmer is in use by a carafe or not, PTC based warmer stands, and insulation for hot water tank and coffee carafes.

Thank you for the opportunity to comment on the proposed framework on behalf of the office coffee service industry. From the operators standpoint, the precision that is being called for in the definitions of the different brewer considerations (size of brewer, brewing capabilities, definitions of power consumption model) are all necessary and will provide clarity to the manufacturers once the ENERGY STAR® specifications are determined. Please do not hesitate to contact NAMA should you have further questions regarding these comments.

Sincerely,

/s/ W. Eric Dell
Senior Vice President, Government Affairs
NAMA
1600 Wilson Blvd., Suite 650
Arlington, VA 22209