



ENERGY STAR® Commercial Electric Cooktops

Version 1.0 Draft 1

Stakeholder Meeting

November 30, 2022





Webinar Participation

- Please mute yourself when you are not speaking (use local mute or dial *6)
- Feel free to ask questions at any time

Submit written comments to cfs@energystar.gov by **December 22, 2022**

The screenshot displays a software interface for a webinar. At the top, there is a menu bar with 'File', 'View', and 'Help' options. Below this is a 'Audio' section with a 'Sound Check' indicator. Two radio buttons are present: 'Computer audio' (selected) and 'Phone call'. A microphone icon is shown with the word 'MUTED' in orange text. Below the microphone, there are dropdown menus for 'Transmit (Plantronics Savi 7xx-M)' and 'Receive (Plantronics Savi 7xx-M)'. A volume bar is visible. The current speaker is identified as 'Talking: Liz Davis'. A 'Questions' panel is open, showing a text input field with the placeholder '[Enter a question for staff]' and a 'Send' button. A vertical sidebar on the left contains several icons, with the 'Mute' icon (a hand with a slash) highlighted by a red box. At the bottom of the interface, there is a section for 'Webinar Housekeeping' with the 'Webinar ID: 608-865-371' and the 'GoToWebinar' logo.



Stakeholder Breakdown in Today's Webinar

Registrations for today's webinar include:

- 12 Product Brand Owners/Manufacturers
- 6 EEPS/Utilities
- 9 Consultants
- 4 Labs
- 2 Associations
- 2 General Interest



Meeting Agenda

1. **Introductions**
2. Current ASTM F1521 Test Method
3. Definitions
4. Scope
5. Criteria
6. Reporting Requirements
7. Closing - Next Steps & Questions



Introductions

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CFS Industry Specialist



What is ENERGY STAR?



The simple choice for energy efficiency.

- Influential and trusted symbol of **energy efficiency**
- Available across **75+ product categories**
- Since 1992, a voluntary **partnership** among government, business, and consumers
- Now in our 20th year partnering with the commercial food service industry
- Products are independently certified to meet strict energy-efficiency guidelines set by the **U.S. EPA**
- **Utilities** offer **rebates** on ENERGY STAR certified equipment
- **Saves** end-users **energy, water, and money**
- Helps protect the **climate**

ENERGY STAR by the Numbers

In 2020...

- Utilities invested nearly \$8 billion in energy efficiency programs
- 300 million ENERGY STAR products purchased
 - The estimated annual market value of product sales is more than \$100 billion
- Avoided \$42 billion in energy costs
 - 400 million metrics tons of GHG



https://www.energystar.gov/about/origins_mission/impacts



Benefits to joining ENERGY STAR

MORE THAN
90%
RECOGNIZE THE
ENERGY STAR® LABEL

Source: CEE's 2019 Household Survey
<https://www.energystar.gov/awareness>

- Leverage the label recognition
- Access a network of over 800 utilities
- Access customer support teams at EPA
- Utilize co-brandable materials
- Participate in promotional events
- Get listed on publicly-available ENERGY STAR search tools
- Apply for the ENERGY STAR Partner of the Year Award
- Receive email notifications about program activities



ENERGY STAR Partnership Types



The simple choice for energy efficiency.

- Brand owner
- Retailer (*i.e.*, CFS dealer/distributor)
- Residential building
- Commercial building
- Industrial plant
- Energy Efficiency Program Sponsor

For more information on joining as an ENERGY STAR partner visit this webpage
https://www.energystar.gov/partner_resources/join-energy-star

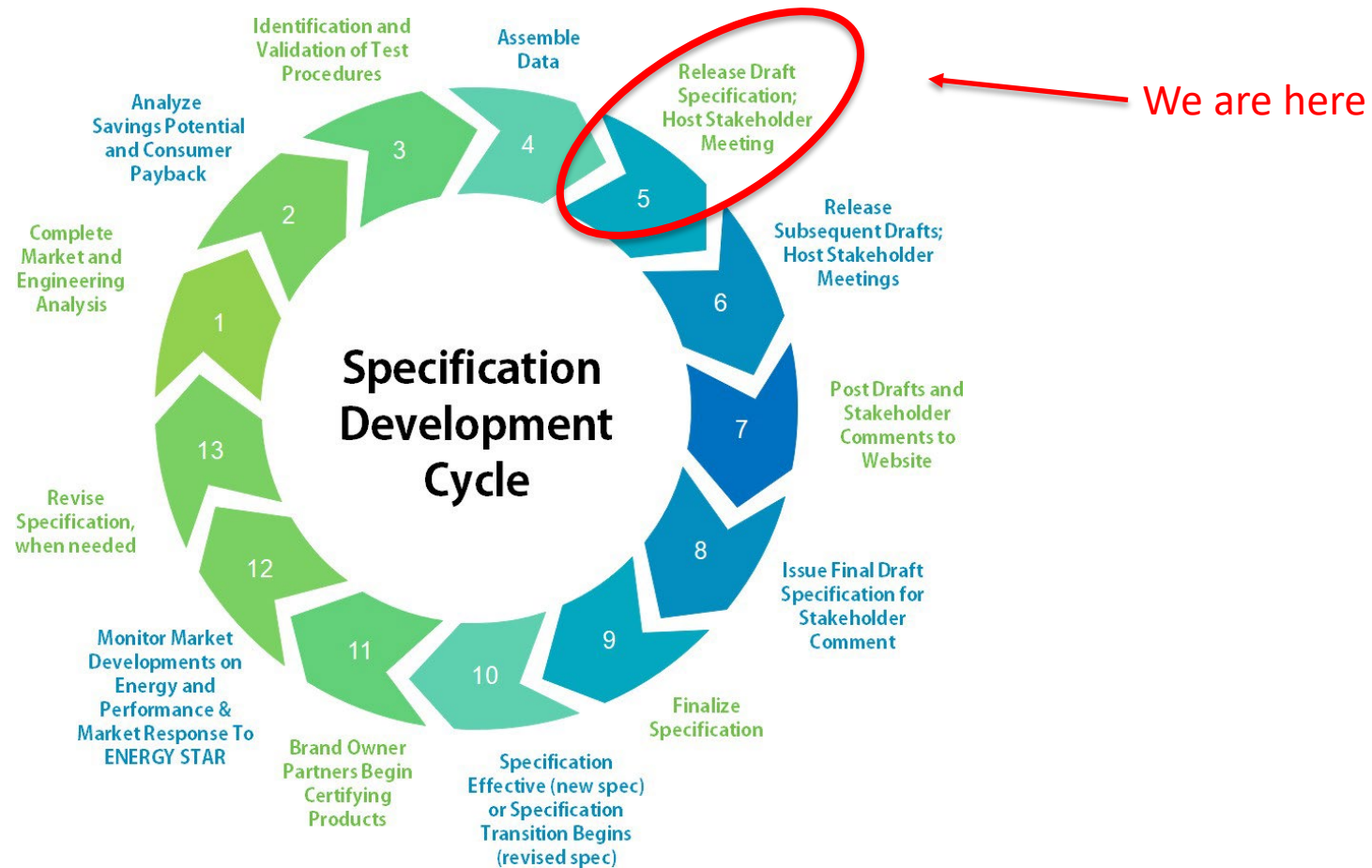


Product Brand Owner Partnership Requirements

1. **Sign** partnership agreement. See partner resources page: https://www.energystar.gov/partner_resources/join-energy-star
2. **Third-party certification** through an EPA-recognized certification body (CB): www.energystar.gov/3rdpartycert.
3. **Comply** with the ENERGY STAR **Brand Guidelines** for appropriate use of the logo: www.energystar.gov/logouse
4. **Participate** in **third-party verification** through an EPA-recognized certification body
5. **Provide annual unit shipment data** no later than **March 1** www.energystar.gov/unitshipmentdata



ENERGY STAR Specification Development Process





Guiding Principles That Drive New Specifications and Revisions

- Driven by the need to continuously recognize and differentiate top performing products on the market:
 - **New categories and scope expansion**
 - **National energy and GHG savings**
 - New or revised test methods
 - Significant increase in ENERGY STAR market penetration
 - Change in Federal minimum efficiency standards
 - Technological advancements
 - Product performance or quality concerns



Current Timeline: Commercial Electric Cooktops

- Discussion Guide published – February 24, 2021
- Discussion Guide webinar – March 17, 2021
- Discussion Guide comments due – April 7, 2021

- Draft 1 published – November 10, 2022
- Draft 1 webinar – November 30, 2022
- **Draft 1 comments due – December 22, 2022**

[Product Development Website](#)—Bookmark this page!

POTENTIAL TIMELINE

- | Draft 2 – Q1 2023
- | Final Draft – Q2 2023
- | Final Version 1.0 – Q2 2023 (effective immediately)

- | * This timeline is subject to change, especially if a Draft 2 will
- | not be needed



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ASTM F1521

- F1521 – 12 (Reapproved 2022) Standard Test Methods for Performance of Range Tops
 - Ballot approved in October 2022. Publication to ASTM webpage TBD.
 - Includes methods to determine cooking (boil) energy efficiency, simmer energy, and production capacity.
 - Includes variety of cooking container options: aluminum, steel, or stainless-steel plated nickel of varying sizes.

Other ASTM Test Methods cited in the specification:

- F2834 – 10a (Reapproved 2017) Standard Specification for Induction Cooktops, Counter Top, Drop-in Mounted, or Floor Standing defines induction cooktops, energy testing per F1521 and requires induction-compatible pots.
- F2521-09 (2022) Standard Specification for Heavy-Duty Ranges, Gas and Electric defines cooktop electric element, heavy-duty range, French top, and hot top.



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Definitions

- Basis for the energy efficiency criterion

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”.

Heat-Up Time: The time required to heat the allotted volume of water from 70°F to 200°F, per ASTM F1521-12 (2022).



Definitions

- Modifications from ASTM test methods

Cooking Container: A *steel* vessel used to hold the water being heated by the cooktop. The ASTM F1521-12 (2022) 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.

Hob: An individual heating element or cooking zone that is independently controlled; typically associated with an individual induction coil.



Definitions

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.

- a. Countertop (or Tabletop) Unit: An induction unit intended to be operated on a counter or table.
- b. Counter Drop-In Unit: An induction unit intended to be installed in a counter top or application specific cut-out.
- c. Floor Standing Unit: An induction unit intended to be operated standing on the floor.



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Scope

- Included Products: Products that meet the definition of a commercial electric cooktop are eligible for ENERGY STAR certification.
 - Cooktops that utilize conventional electric resistance and/or induction as a means for cooking food
 - Single- and multi-hob units
 - Examples: coil cooktops; hot tops; French tops; induction cooktops that are either countertops or tabletops, drop-ins, or floor-standing
- Excluded Products: Cooktops designed for residential or other non-commercial applications, including 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. Gas ranges/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.



Scope Question

- Cooktops may be used for warming and/or holding but warming/holding equipment may not necessarily be used for cooking.
 - EPA is interested in setting a minimum input rate threshold expressed in kW for eligible electric cooktops to differentiate cooking and warming/holding equipment.
 - **Would a 1.0 kW and below be an appropriate threshold to classify cooktops as warming/holding equipment?**





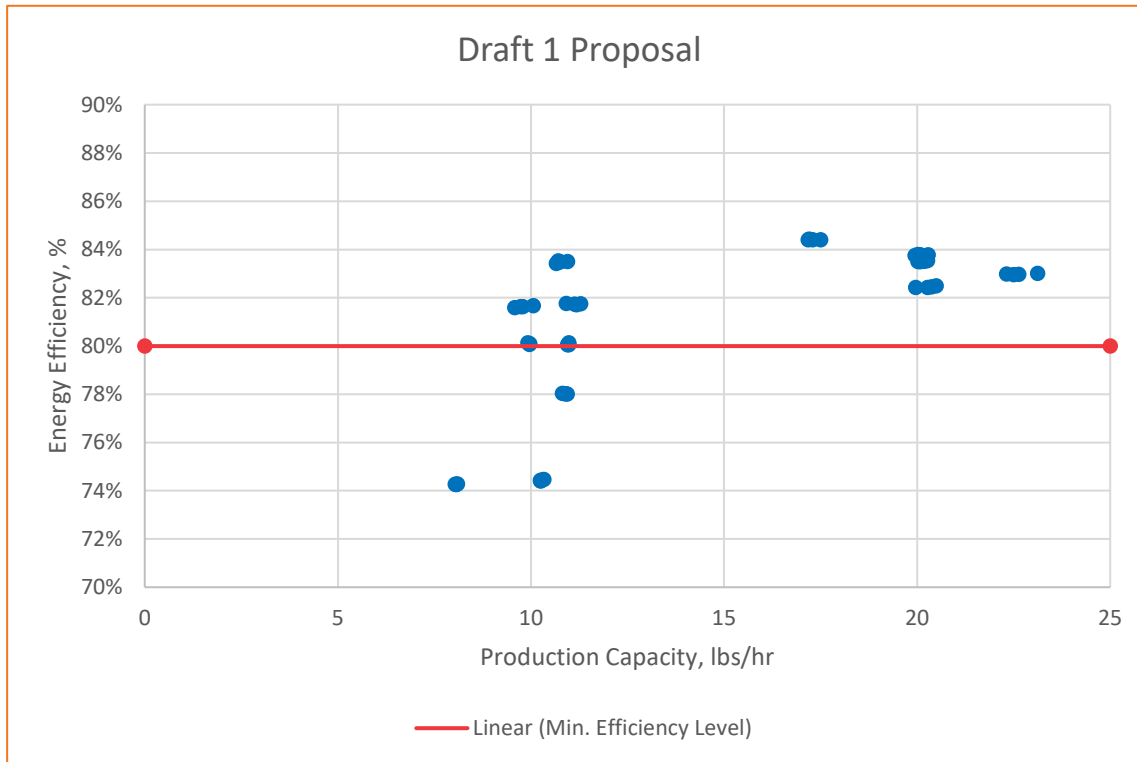
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Criteria

Table 1: Energy Efficiency Requirements for Commercial Electric Cooktops	
Individual Hob Performance*	
Cooking (Boil) Energy Efficiency, %	≥ 80%



Boil Efficiency of 3 Cooktop Varieties (based on pre-2022 ASTM test method)

Fuel Type	Boil Efficiency
Induction	80-90%
Conventional Electric	65-75%
Gas	25-40%

Source: Frontier Energy. Electric Plug Load Savings Potential of Commercial Food Service Equipment Report Draft, April 2020.

ENERGY STAR criterion is expected to capture the highest performing electric models.

ASTM F1521-12 (2022) and 56 induction data points (14 models)

Criteria Question

- The ASTM F1521-12 (2022) 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.
 - EPA proposes to take a weighted average of all hobs on the cooktop to determine certification.
 - **Are there any concerns with this approach?**





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Reporting Requirements

- The total number of hobs in the cooktop.
- The maximum input rate of each hob.
- The diameter(s) of the individual hobs.
- Heat-up time (in minutes) for each hob from ambient to production-ready temperature (70°F to 200°F).
- Production capacity (lbs. of water per hour).
- For induction cooktops, specify the sub-category of the unit (countertop, drop-in, and/or floor standing), if applicable.



Reporting Requirements Questions

- Standby mode and off mode energy consumption are defined for *residential* cooking tops.
 - **Does a standby mode or off mode occur in some commercial cooktop models?**
- 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 F1521-12 (2022), see Section 9.4.
 - **Is there voltage versatility or fixed voltage for commercial electric cooktops? Do different hobs on a multi-hob cooktop have unique input rates & voltage?**
 - **Other CFSE specs have indicated that equipment with voltage versatility test the most consumptive rating. If applied to cooktops, this approach would differ from the ASTM F1521.**



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Next Steps & Questions

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Stakeholders are encouraged to provide written comments for consideration to cfs@energystar.gov by **December 22, 2022**.