June 30, 2023

Tanja Crk,
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC, 20460

Topic: EPA ENERGY STAR® Version 1.0 Residential Cooking Products Specification, Draft 2.

Dear Ms. Crk:

This letter comprises the comments of the Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE), collectively referred to herein as the California Investor-Owned Utilities (CA IOUs), in response to the United States (U.S.) Environmental Protection Agency (EPA) Version 1.0, Draft 2, ENERGY STAR Residential Electric Cooking Products Specification.

The CA IOUs comprise some of the largest utility companies in the nation, serving over 32 million customers in the Western U.S. We are committed to helping customers reduce energy costs and consumption while striving to meet their evolving needs and expectations. Therefore, we advocate for specifications that accurately reflect the climate and conditions of our respective service areas.

We respectfully submit the following comments to EPA:

1. **ENERGY STAR® should include a low power mode energy consumption requirement of 10.7 kWh per year for standalone cooking tops in addition to the already proposed requirement for electric ranges.**

In response to stakeholder comments, EPA noted that the Integrated Annual Energy Use (IAEC) metric already accounts for low power mode energy use in standalone cooking tops. Therefore, a different criterion specifically for standby energy use is unnecessary.[1] Although the IAEC includes standby energy consumption, only a single set of operating hour assumptions represents each cooking top configuration. The metric assumes 8,544 and 8,392 hours per year for standalone cooking tops and ranges, respectively. These values represent overall average consumer use and doesn't capture the significant consumer-to-consumer variation in cooking top operation.

Figure 1 highlights data from the 2020 Residential Energy Consumption Survey (RECS), indicating that among major home appliances with high penetration rates that do not operate continuously (e.g., ranges, clothes dryers, and clothes washers), cooking tops show unique usage patterns across

[1] Noted on page three of Version 1.0 Draft 1 Comment Response Matrix. U.S. Environmental Protection Agency, "Residential Electric Cooking Products Version 1," ENERGY STAR, 3, May 31, 2023, https://www.energystar.gov/products/residential_electric_cooking_products_version_1.

consumers.[2] This data emphasizes the need for separate standby and active (or total) energy use requirements to ensure that consumers on the low and high end of the usage spectrum will benefit from the energy savings that are so strongly associated with ENERGY STAR products.

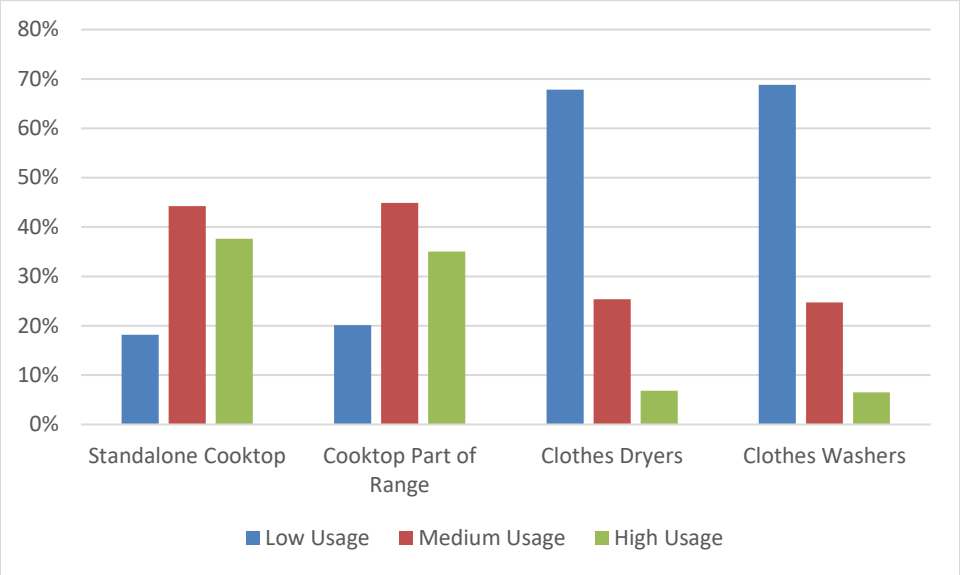
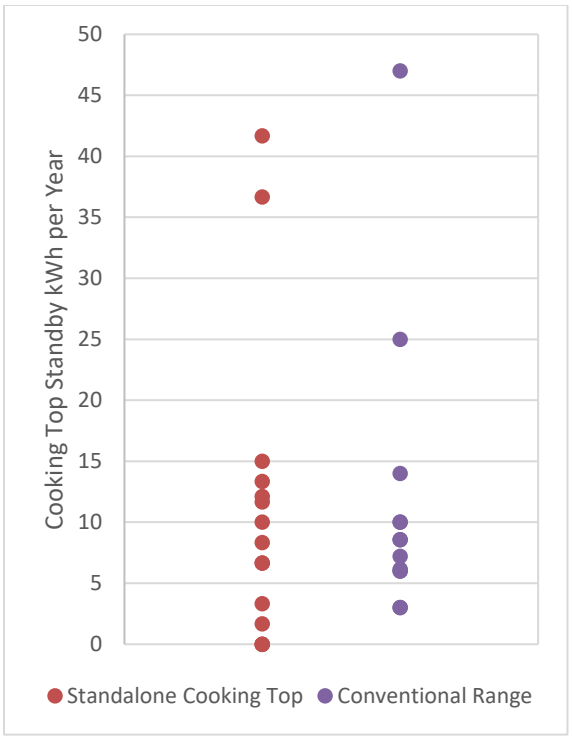


Figure 1: RECS 2020 Uses per Week for Each Appliance.[3]
Source: RECS 2020 Table HC 3.1

The significant breadth of standby energy use found in the ENERGY STAR data package accompanying this specification supports the need for a standalone requirement for standby energy use, as seen in Figure **2**a and b. The EPA data package demonstrates that standby energy use in standalone cooktops can range from zero to 21 percent of total annual energy use.[4] EPA proposes a standby energy use requirement for conventional range products but not for standalone cooking products, although their breadth of standby energy consumption is similar.

[2] According to RECS 2020, for non-continuously operating major home appliances (e.g., refrigerators and freezers), only cooking tops, ranges, clothes washers, and clothes dryers have penetration rates above 80%. Cooking tops and ovens have at least an 89% penetration rate. (RECS separates standalone cooking tops/ovens and ranges, so how much overlap is undetermined.) Clothes washers have an 84% penetration rate, and clothes dryers have an 83% penetration rate.
[3] RECS 2020 provides respondents with five "uses per week" selections for the four appliance options shown in this figure. The two least usage options were "low," and the two highest usage options were "high." For cooking top products, low represents 0 to 3 uses per week, medium is 4 to 7 per week, and high is 8 to 15+ per week. For clothes washers and dryers, low represents 0 to 1 use per week, medium represents 2 to 3 uses per week, and high means 4 to 7+ uses per week.
[4] The standby energy consumption for test unit 15 of EPA's Draft 2 Data Package represents 21% of its IAEC, while the standby energy use for test units one, three, and eight all represent 0% of their IAECs.



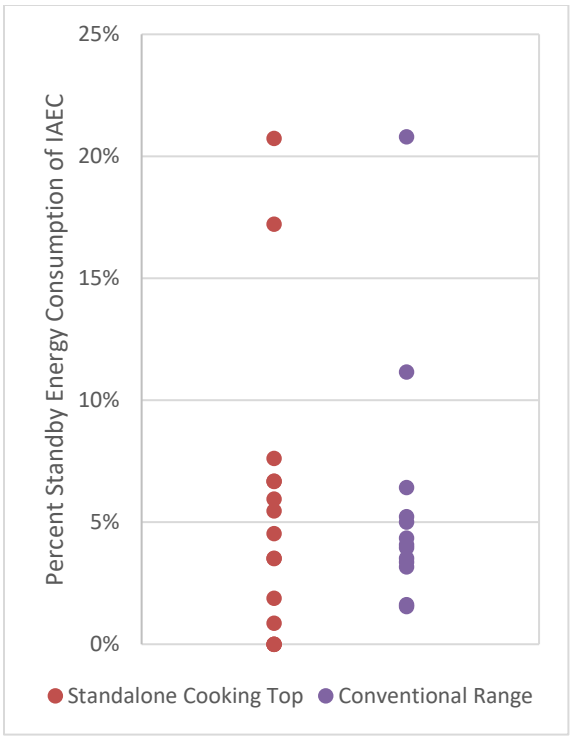


Figure 2a and b: Comparison of Cooking Top Annual Standby Energy Consumption (left) and Percent Standby Energy Consumption of IAEC (right) for Each Tested Product.
Source: ENERGY STAR Data Package.

A 10.7 kWh per year maximum standby annual energy use for standalone cooking tops would maintain the same standby power requirements of the conventional range's cooktop component proposed in this draft specification.[5] Incorporating this requirement would result in one product (test unit 27 of the EPA data package) no longer meeting the ENERGY STAR specifications. Consumers would benefit from individual performance requirements to address both standby and active mode energy use, ensuring energy savings are realized compared to non-ENERGY STAR products.

2. The CA IOUs provide a series of recommendations on the additional reporting requirements.

Include a new reporting requirement detailing if a unit is portable.
Portable electric cooktops serve a different use case than non-portable units and should not be considered interchangeable for a consumer. The draft specification requires the reporting of total cooking zones. Although single or dual-cooking zone cooktops may likely be portable units, this is not guaranteed.[6] The requirement to report a unit's portability will not place an additional testing burden on the manufacturer and consumers that want to identify energy efficiency between portable and non-

[5] A conventional range is assumed to have 8,392 hours of standby operation per year. The oven uses 40% of these hours (and associated energy use), with the remaining 60% attributed to the cooking top, equating to a maximum allowed annual standby energy use of 10.5 kWh per year for the conventional range's cooktop portion. Standalone cooking tops are assumed to have 8,544 hours of standby operation per year. Accounting for these differences in standby hours of operation results in an equivalent annual maximum allowable standby energy use of 10.7 kWh per year for standalone cooktops.
[6] Portable single and dual-zone cooktops are plentiful and more commonly discussed. However, many single and dual-zone, non-portable cooktops are available. For example, see Jennair's single-zone, non-portable cooktop, model JIC4715GS; Summit's single-zone, non-portable cooktop, model SINC1110; Vevor's dual-zone, non-portable cooktop, model QRSCKDC12110V109VV1.

portable units will benefit from this information, especially for one or two cooking zone cooktops where an overlap is more likely.

Include a new reporting requirement detailing if a cooktop has active cooling, and the duration thereof, after deactivating the cooking zone.
The CA IOUs understand that some induction cooktops implement active electronic cooling following the deactivation of the cooking zone.[7] The DOE cooking top test procedure at 10 CFR 430, Subpart B, Appendix I1 (Appendix I1), the IAEC performance metric, or annual standby energy use, does not capture the energy use associated with this operation. This action may have a non-trivial impact on the product's overall energy consumption depending on its power consumption and duration. As a test procedure to capture this information does not exist, we recommend that, at a minimum, EPA require manufacturers to report if a product has active cooling after a cooking zone is deactivated. Ideally, this reporting includes the active cooling's duration. We recognize the challenge this may create as EPA would need to develop the test procedure specifications to capture this information in a repeatable manner.

Moreover, consumers may find the cooling fan disruptive because it creates a continuous noise after cooking. This active cooling is associated only with induction cooktops and is thus more likely present in ENERGY STAR products than non-Energy Star products. If undisclosed before purchase, consumers may experience greater dissatisfaction and negatively impact the ENERGY STAR brand, as providing quality products is one of its guiding principles.[8]

Include a new reporting requirement detailing the total number of tested cooking zones.
EPA proposes to require the reporting of "the total number of cooking zones in the cooking top," which may not align with the actual number of cooking zones tested. Appendix I1 does not test specialty cooking zones, defined as a "warming plate, grill, griddle, or cooking zone that is designed for use only with non-circular cookware, such as a bridge zone." The requirement to report the number of tested and total cooking zones will not result in an additional testing burden for manufacturers while allowing consumers to make better purchasing decisions by identifying products with specialty cooking zones and clarifying that the ENERGY STAR rating and its energy efficiency requirements do not extend to that specialty cooking zone.

Amend the time to 90 °C (t_{90}) to be time to 80 °C (t_{80}) to avoid any technological bias.
EPA defines t_{90} as "the first instance during the simmering test for each cooking zone at which the smoothened water temperature is greater than or equal to 90 °C." This metric provides consumer value by allowing them to understand the relative speed at which a cooktop heats up. Unfortunately, t_{90} as measured by Appendix I1 was not designed to be viewed in isolation and as a result, provides biased results in the context of relative speed to 90 °C. To capture t_{90} in Appendix I1, a cooking zone is turned to max power until it reaches its turndown temperature, at which point the cooking zone controls are reduced to a pre-identified simmer setting.[9] The turndown temperature may vary slightly from cooktop to cooktop of the same technology (coil, smooth-radiant, and induction), but there is significant

[7] GE Appliances and Wolf discuss this operation on their website to outline that this post-cooking active cooling is normal.
[8] U.S. Environmental Protection Agency, "ENERGY STAR® Products Program Strategic Vision and Guiding Principles," ENERGY STAR, May 2012, https://www.energystar.gov/sites/default/files/asset/document/ENERGY_STAR_Strategic_Vision_and_Guiding_Principles.pdf.
[9] Turndown temperature is the water temperature at which once the cooking zone power is reduced, the water temperature can rise higher than 90 °C with the least amount of energy. Making use of the stored thermal energy of the cooking top, test vessel, and water load.

variation between technologies. IEC 60350 provides empirically tested turndown temperature values for induction, smooth-radiant, and coil cooking zones of 89, 85, and 80 °C respectively. With these turndown temperatures, an induction cooking zone will operate at max power for a longer portion of t_{90} than smooth-radiant or coil cooking zones, and thus have a shorter t_{90} because of the test procedure design, not actual performance.

In CA IOU testing, similar turndown temperatures as presented in IEC 60350 were found for each electric technology type, and the impact, as reflected in Figure 3, shows that after the turndown temperature, the rate at which the water temperature increases slowed significantly for the coil and smooth-radiant cooktops. As an alternative to t_{90}, t_{80} occurs before the turndown temperature, is a value that does not require any additional product testing, provides a similar consumer value, and allows for each electric technology to be presented in an unbiased manner.

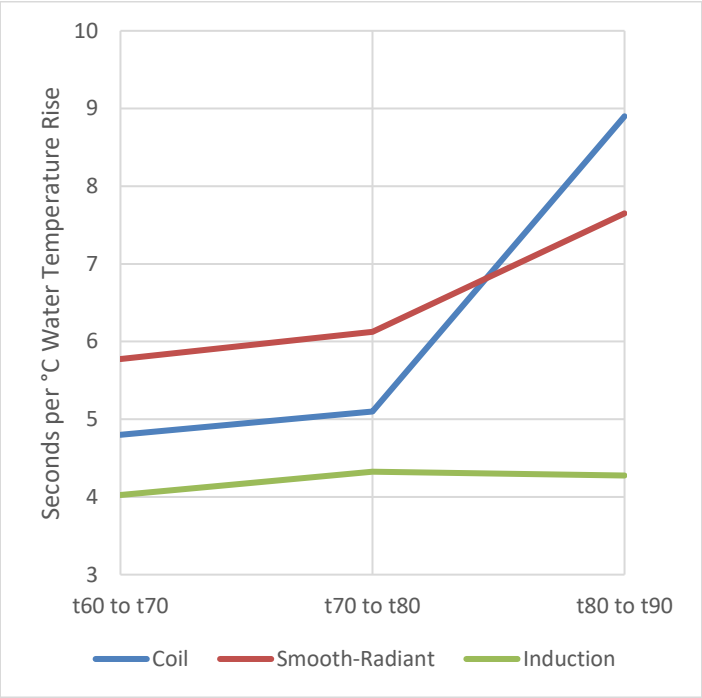


Figure 3: CA IOU minimum above temperature threshold test for three different cooktops.
Source: CA IOU test data.

The CA IOUs appreciate the opportunity to provide these comments regarding Version 1.0, Draft 2, ENERGY STAR® Residential Electric Cooking Products Specification. We thank EPA for its consideration. We look forward to the next steps in the process.

Sincerely,

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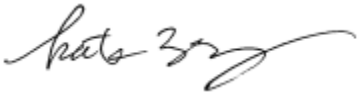

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