

DOCKETED	
Docket Number:	23-AAER-01
Project Title:	Commercial Food Service Equipment (i.e. Commercial Steam Cookers, Commercial Ovens, Commercial Dishwashers, and Commercial Fryer)
TN #:	264420
Document Title:	ASAP & ACEEE Comments - Commercial Fryers RFI Comments
Description:	N/A
Filer:	System
Organization:	Appliance Standards Awareness Project (ASAP) & American Council for an Energy-Efficient Economy (ACEEE)
Submitter Role:	Public
Submission Date:	6/23/2025 2:01:50 PM
Docketed Date:	6/23/2025

*Comment Received From: ASAP ACEEE
Submitted On: 6/23/2025
Docket Number: 23-AAER-01*

Commercial Fryers RFI Comments

Additional submitted attachment is included below.

Appliance Standards Awareness Project
American Council for an Energy-Efficient Economy

June 23, 2025

California Energy Commission
Docket Unit
715 P Street, Sacramento, CA 95814

RE: Docket No. 23-AAER-01: Commercial Food Service Equipment

Dear Commission Staff:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP) and American Council for an Energy-Efficient Economy (ACEEE) on the California Energy Commission (CEC) request for information (RFI) for commercial fryers. We appreciate the opportunity to provide input to the Commission.

We are pleased that CEC is moving forward with rulemakings for various types of commercial food service (CFS) equipment, including commercial fryers. We encourage CEC to adopt standard levels for commercial fryers consistent with ENERGY STAR v2.0 for electric fryers and to evaluate levels beyond ENERGY STAR v2.0/v3.0 for gas fryers. We also encourage CEC to include propane fryers and larger countertop and drop-in fryers within the scope of the fryer efficiency standards.

We encourage CEC to adopt standard levels consistent with ENERGY STAR v2.0 for electric fryers.

Adopting the v2.0 efficiency levels would align with state standards in nine other states while mitigating potential cost concerns for electric fryers at the current ENERGY STAR specification (v3.0). ENERGY STAR v3.0 specifies more stringent levels for electric fryers,¹ with gas fryers remaining unchanged from v2.0 (finalized in 2011). Stakeholders have raised concerns that standards equivalent to ENERGY STAR v3.0 may disproportionately impact the electric fryer market.² Specifically, electric fryers are typically more expensive than gas fryers and adopting v3.0 may exacerbate this upfront cost difference, hurting the broader commercial kitchen electrification efforts ongoing in California. Thus, we believe that levels consistent with ENERGY STAR v2.0 for electric fryers are appropriate to drive energy and cost savings without negatively impacting the market for these products.

Importantly, adopting the ENERGY STAR v2.0 levels would provide meaningful, cost-effective savings for electric fryers. Based on the ENERGY STAR CFS Equipment calculator, we estimate that v2.0 would deliver per-unit annual electricity savings of 10% or 1,866 kWh for standard electric fryers and 14% or 2,696 kWh for large-vat electric fryers relative to a baseline model.³ Assuming a commercial electricity rate of \$0.253/kWh⁴ the total life-cycle cost savings are \$2,928 for electric standard and \$5,899 for large

¹ The v3.0 requirements are 83% cooking efficiency and ≤1000 W idle energy rate for standard open deep-fat electric fryers versus 80% cooking efficiency and ≤800 W idle energy rate for v2.0.

² p. 3. efiling.energy.ca.gov/GetDocument.aspx?tn=259963&DocumentContentId=96169

³ For these estimates, we reverted the “ENERGY STAR” (i.e., standards-case) product efficiency to the v2.0 requirements (80% efficiency and 800 W idle energy rate) for standard electric fryers.

⁴ Based on EIA’s 2024 average CA commercial sector retail electricity price. EIA Table 861, Report 5.6. www.eia.gov/electricity/data/browser

vat fryers per the CFS Equipment calculator;⁵ simple payback periods are 3.2 and 0.7 years for electric standard and large-vat fryers, respectively.⁶ Based on our methodology outlined in previous comments to the commercial ovens RFI,⁷ we estimate adopting v2.0 would result in statewide annual electricity savings of 7.3 GWh after full stock turnover (in 2040) and cumulative electricity savings of 132 GWh through 2050.

We encourage CEC to consider standard levels beyond ENERGY STAR for gas fryers. Based on the ENERGY STAR CFS Equipment calculator, v2.0/v3.0 would deliver per-unit annual gas savings of 31% or 51.2 MMBtu for standard gas fryers and 27% or 42.0 MMBtu for large-vat electric fryers. Statewide, we estimate adopting v2.0/v3.0 would result in annual gas savings of 5.6 TBtu after full stock turnover (in 2040) and cumulative gas savings of 92.8 TBtu through 2050; we estimate that cumulative statewide bill savings would top \$1.2 billion.

However, there may be an opportunity to drive additional savings through more stringent gas fryer standards. Many models on the market today exceed the ENERGY STAR v2.0/v3.0 levels for gas fryers, which have not been updated in nearly 15 years. Figure 1 plots cooking efficiency and idle energy rate for standard (left) and large-vat gas fryers (right) in the California Foodservice Instant Rebates program database.⁸ For both gas fryer categories there are a significant number of models that exceed the ENERGY STAR requirements (green lines) for both cooking efficiency and idle energy use; the green lines represent the ENERGY STAR efficiency levels and the most efficient units are towards the bottom-right of each plot.

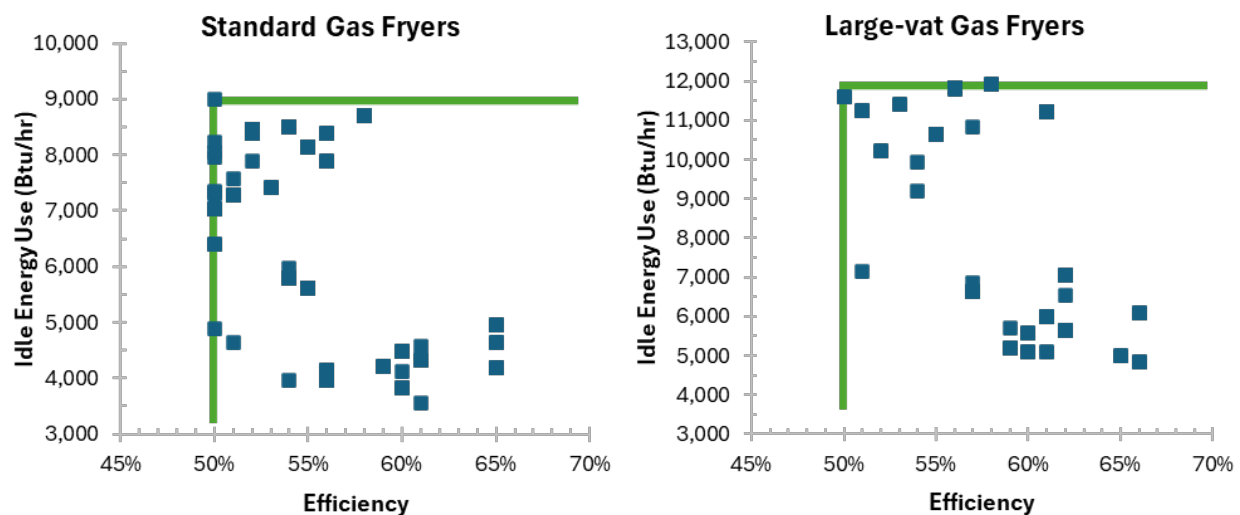


Figure 1: Idle energy use versus efficiency for standard and large-vat gas fryers in the California Foodservice Instant Rebates program database; the green lines represent v2.0/v3.0 ENERGY STAR levels.

⁵ These savings may be conservative for standard electric fryers. While we are maintaining the assumed incremental cost of \$1500, this estimate is associated with v3.0 and could be less to meet v2.0.

⁶ Using the CFS Equipment calculator incremental costs for standard (\$1,500) and large-vat (\$500) electric fryers.

⁷ pp. 5-6. efiling.energy.ca.gov/GetDocument.aspx?tn=259689&DocumentContentId=95834

⁸ fs.californiainstantrebates.com/qpl/. Accessed May 28, 2025. The minimum requirements are equivalent to ENERGY STAR v2.0/v3.0 for gas fryers.

While we do not have robust estimates for the incremental cost of gas fryers that exceed the ENERGY STAR levels, some of these more efficient models are quite affordable. For example, the cheapest ENERGY STAR certified large-vat gas fryer that we found, costing less than \$1,400,⁹ has a rated cooking efficiency of 57% and idle energy rate of 10,851 Btu/hr,¹⁰ both of which meaningfully exceed minimum ENERGY STAR requirements (50% cooking efficiency, 12,000 Btu/hr idle energy use). The most affordable standard gas fryer we found, costing about \$1000, just meets the minimum ENERGY STAR cooking efficiency of 50%;¹¹ however, a model from the same manufacturer with a slightly higher capacity only costs about \$100 more and has a rated cooking efficiency of 53%.¹² These examples suggest that more efficient, affordable gas fryers are available on the market today. We therefore encourage CEC to further investigate whether standard levels exceeding ENERGY STAR are warranted for some or all gas fryers.

We encourage CEC to consider standard levels that would apply to both propane fryers and gas fryers.

Propane fryers are generally used in food trucks or in rural areas with limited gas service. As CEC notes in the RFI, propane is typically more expensive than natural gas, so it is likely that standards for propane fryers would be highly cost-effective for purchasers. Though we are not aware of testing data available for propane fryers, we note that there is typically no meaningful difference in the efficiency of propane and natural gas appliances. We also understand that most manufacturers offer essentially the same fryer model in both gas and propane configurations and that it is straightforward to swap configurations in the field.¹³ Given the similarity of gas and propane models and the ease of swapping fuel sources, we are concerned that excluding propane fryers could create a loophole risk wherein unregulated propane fryers are retrofitted in the field to run on gas.

We encourage CEC to consider including larger countertop and drop-in fryers in scope for the standards and to further investigate smaller units. While both countertop and drop-in fryers are listed as included product types for ENERGY STAR v3.0, most of these products are smaller capacity fryers that do not meet the capacity thresholds to be ENERGY STAR certified.¹⁴ There is limited information available on the performance of these units, as there is only one countertop unit¹⁵ and no drop-in units that are ENERGY STAR certified; the ENERGY STAR certified countertop unit is different from typical countertop units in that it has a fairly large capacity (40 lbs.) and runs on 208 V three-phase power. However, we are unaware of any reason why these units could not achieve similar levels of efficiency as free-standing units, and we therefore encourage CEC to consider including larger countertop and drop-in fryers within the scope of the standards. For smaller units that don't qualify for ENERGY STAR, CEC could consider test-and-list requirements to better understand the market and efficiency of these products.

Thank you for considering these comments.

⁹ www.webrestaurantstore.com/floor-fryer-5-tube-70-lb-energy-star-nat/177FFES70N.html

¹⁰ www.energystar.gov/productfinder/product/certified-commercial-fryers/details/3555255

¹¹ www.webrestaurantstore.com/floor-fryer-3-tube-40lb-energy-star-nat/177FFES40N.html

www.energystar.gov/productfinder/product/certified-commercial-fryers/details/3555232

¹² www.webrestaurantstore.com/floor-fryer-4-tube-50-lb-energy-star-nat/177FFES50N.html

www.energystar.gov/productfinder/product/certified-commercial-fryers/details/3554904

¹³ Conversion can be as simple as swapping out gas regulators.

¹⁴ To qualify as a standard fryer, the vat must be ≥ 12 in. wide and have a shortening capacity ≥ 25 lbs.

¹⁵ www.vulcanequipment.com/fryers/40lb-cef-series-electric-counter-fryer

Sincerely,

A handwritten signature in black ink, reading "Jeremy Dunklin". The signature is fluid and cursive, with the first name and last name clearly distinguishable.

Jeremy Dunklin, PhD
Senior Technical Advocacy Associate
Appliance Standards Awareness Project

A handwritten signature in black ink, reading "Matt Malinowski". The signature is stylized and cursive, with the first name and last name clearly distinguishable.

Matt Malinowski
Director, Buildings Program
American Council for an Energy-Efficient
Economy