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EARTHJUSTICE
BECAUSE THE EARTH NEEDS A GOOD LAWYER

via electronic submission June 23, 2025

California Energy Commission
Docket Unit
Docket No. 23-AAER-01
715 P Street
Sacramento, CA 95814

RE: Earthjustice Comments on the Request for Information for Commercial Fryers, Docket No. 23-AAER-01

Energy Commission:

Earthjustice appreciates the opportunity to submit the following comments in response to the request for information ("RFI") on commercial fryers. Reaffirming our previous Title 20 commercial fryer proposal, Earthjustice recommends that the California Energy Commission ("CEC") adopt energy efficiency standards for gas commercial fryers that go beyond the ENERGY STAR specifications.[1] Specifically, Earthjustice recommends a 56 percent efficiency standard and idle energy rate limits of 8,000 Btu/hr for standard vat gas fryers and 10,000 Btu/hr for large vat gas fryers. The ENERGY STAR specifications for commercial gas fryers are decades old and insufficient for meeting California's climate and clean air commitments. Fossil fuel combustion within commercial kitchens harms public health, air quality, and the climate. Moreover, as the CEC has acknowledged, "gas equipment efficiency investments have a growing likelihood over time of becoming stranded assets, becoming a liability for carbon offsets, or causing the state to miss its goals."[2]

Accordingly, the CEC should adopt standards that further electrification of the commercial fryer market in order to achieve carbon neutrality by 2045 and compliance with national ambient air quality standards.[3] The following RFI responses support the electrification transition by setting strong and comprehensive energy efficiency standards for commercial gas fryers and establishing test-and-list requirements for electric commercial fryers. Paired with energy efficiency or other incentives focused on electric models, these Title 20 efficiency standards for commercial fryers can create greater price parity between gas and electric models, overcoming the higher upfront costs of electric models that are a main barrier for their adoption.

[1] Earthjustice, Docket 23-AAER-01, Comments on Commercial Fryer Efficiency Standards at 1 (November 12, 2024), https://efiling.energy.ca.gov/GetDocument.aspx?tn=259963&DocumentContentId=96169.
[2] CEC, 2021 Integrated Energy Policy Report Vol. 1, at 22 (Feb. 2022), https://efiling.energy.ca.gov/GetDocument.aspx?tn=241599.
[3] CARB, 2022 Scoping Plan for Achieving Carbon Neutrality, at 1 (Dec. 2022), https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf.

Topic: Propane Commercial Fryers

1) **Should propane commercial fryers be included in the scope of commercial fryer efficiency standards?**

Yes. Earthjustice recommends that propane fryers be included in the scope of the commercial fryer efficiency standards with the same efficiency standards adopted across propane fryers and methane fryers. It is Earthjustice's understanding that restaurant equipment manufacturers offer commercial fryer models that can be fueled by either liquid propane or methane gas. Restaurant operators can either buy a commercial fryer that is already set up for a specific type of fuel or buy a conversion kit that can switch the hook up from methane gas to a propane tank and vice versa. Because operators can conveniently switch between methane and propane fuel sources with conversion kits, the Title 20 efficiency standards should cover both to avoid situations in which an operator converts a propane fryer into a non-compliant methane fryer. Furthermore, we did not find any publicly available data suggesting differences in energy efficiency performance between propane and methane fuel for a given commercial fryer model. Absent compelling evidence of a significant difference in efficiency levels between fossil gas and propane fryers, the CEC should adopt the same efficiency standards for both fuels.

Like the combustion of methane gas, the combustion of propane in commercial kitchens releases harmful air pollutants, including nitrogen dioxide, benzene (a known human carcinogen), carbon monoxide, formaldehyde, and particulate matter.[4] For restaurant workers and patrons, indoor air pollution levels often exceeds safe thresholds during peak kitchen hours or if the kitchen is poorly ventilated.[5] Exposure to these air pollutants can cause adverse health outcomes like asthma, respiratory and cardiovascular diseases, cancer, adverse birth outcomes, and premature death.[6] By including propane fryers in the Title 20 efficiency standards, the CEC can encourage commercial fryer electrification, preventing these negative health and environmental externalities.

2) **What is the current market share of gas commercial fryers in California that are propane commercial fryers?**

The CASE Team estimates that propane fryers account for less than five percent of the commercial gas fryer sales in California.[7] Earthjustice was unable to find additional data sources to confirm or refute this estimate.

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[4] Yannai Kashtan et al., *Nitrogen dioxide exposure, health outcomes, and associated demographic disparities due to gas and propane combustion by U.S. stoves*, 10 Science Advances. (May 3, 2024) https://doi.org/10.1126/sciadv.adm8680; Yannai Kashtan et al., *Gas and Propane Combustion from Stoves Emits Benzene and Increases Indoor Air Pollution*, 57 Environ Sci Technol. 9653. (June 15, 2023), https://pubs.acs.org/doi/10.1021/acs.est.2c09289.

[5] Jenna Ditto et al., *Indoor and outdoor air quality impacts of cooking and cleaning emissions from a commercial kitchen*, 25 Environ Sci Process Impacts. 964. (May 25, 2023) https://pubmed.ncbi.nlm.nih.gov/37102581/.

[6] Yannai Kashtan et al., *Gas and Propane Combustion from Stoves Emits Benzene and Increases Indoor Air Pollution*, 57 Environ Sci Technol. 9653. (June 15, 2023), https://pubs.acs.org/doi/10.1021/acs.est.2c09289.

[7] California Investor Owned Utilities, Commercial Fryers, CASE Initiative for PY 2024: Title 20 Standards Development, Docket 23-AAER-01, at 22 ("Title 20 Commercial Fryers Report") (July 16, 2024), https://efiling.energy.ca.gov/GetDocument.aspx?tn=257835&DocumentContentId=93738.

3) **Which industries or user groups primarily purchase and operate propane commercial fryers, and what factors drive their choice (e.g., lack of natural gas access, cost, portability, etc.)?**

Propane fryers are often used for portability and in kitchens without methane line extensions such as food trucks, restaurants in remote or rural areas, and outdoor kitchens.[8] Given the safety and health risks of a propane fryer, the CEC should seek to shift the market to electric options that can offer additional co-benefits. While these commercial kitchens often do not have access to methane gas lines, they frequently have access to electricity. For example, food trucks often plug into the electrical grid via external outlets where they are routinely stationed. For portability and smaller kitchen footprints, there are many electric commercial fryer options that can be built-in or placed on the countertop.

4) **Can propane and natural gas commercial fryers be converted interchangeably, and what are the technical requirements and the associated conversion costs?**

Yes, according to restaurant equipment manufacturers and supplier websites, commercial fryers can be fueled by methane or propane depending on the hook up configuration.[9] Manufacturers also sell conversion kits to switch interchangeably between methane and propane with the suggestion of contracting a professional technician. In the conversion, the technician and the equipment should account for the difference in pressure between propane tanks and methane lines. The cost of this conversion would presumably be the equipment cost of the conversion kits and the labor cost of professional installation. A general conversion kit is cheaper – retailing for around $15 to $100 and can be used for different fryer brands, while a conversion kit made from the specific equipment manufacturer for their models is more expensive – costing anywhere from $50 to $700.[10] The labor cost of the contractor will depend on hourly rates in a given area and how long the installation takes to complete.

5) **Is the performance measured under standardized testing protocols (ASTM F1361-212 and ASTM F2144-213) different for the propane and natural gas configurations of the same commercial fryer?**

Earthjustice is not providing comment on this topic at this time.

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[8] *Ibid.*

[9] *See, e.g.,* Henny Penny, Gas Conversion, https://service.hennypennyhelp.com/help/4Head/600/Service/4HD-PFG-600-Service-Gas-Conversion.htm (last visited June 10, 2025); Babak Food Equipment, Commercial Deep Fryer Conversion Kit: Easy Conversion From Natural Gas to Propane and Vice Versa, https://babakfoodequipment.com/deep-fryer-conversion-kit/ (last visited June 10, 2025).

[10] *See, e.g.,* Webstaurant Store, Avantco Natural Gas to Liquid Propane Conversion Kit for Gas Floor Fryers, https://www.webstaurantstore.com/avantco-177gfkn2p-natural-gas-to-liquid-propane-conversion-kit-for-gas-floor-fryers/177GFKN2P.html (last visited June 6, 2025); [10] Webstaurant Store, Natural Gas to Propane Conversion Kit for Fryer Millivolt Gas Valves, https://www.webstaurantstore.com/natural-gas-to-propane-conversion-kit-for-fryer-millivolt-gas-valves/190CONKITLPG.html (last visited June 6, 2025); Webstaurant Store, Pitco® B7510034 Natural Gas to Liquid Propane Conversion Kit, https://www.webstaurantstore.com/pitco-b7510034-natural-gas-to-liquid-propane-conversion-kit/HPB7510034.html (last visited June 6, 2025); Middleby Advantage, Anets B8043803-C Gas Conversion Kit, Propane to Natural Gas, SLG40, https://www.middlebyadvantage.com/anets/b8043803-c#id=manualsDiagrams (last visited June 6, 2025).

6) **Are there commercial fryers that are designed exclusively for propane usage, without the existence of a natural gas equivalent model or ability to configure for natural gas?**

Earthjustice did not find evidence of a class of commercial fryer models that exclusively used propane and could not be configured with a conversion kit for methane gas.

7) **What is an appropriate average statewide price of propane to use for the CEC's cost-effectiveness analysis? Please provide supporting data sources.**

Earthjustice recommends that the CEC use average statewide propane prices that start at $2.65 per gallon and increase over time. Propane prices in California vary depending on region, but generally current prices fall between $2.25 and $3.50 per gallon with an average of $2.64 per gallon in May 2025.[11] According to the U.S. Energy Information Administration, the average U.S. residential cost of propane was $2.62 per gallon in April 2025.[12]

Earthjustice does not recommend using the IEPR fuel price forecasting for average propane prices over time because the estimates have been consistently too low for predicted years and the forecast does not account for demand changes that will lead to price increases over time. In the 2022 and 2023 IEPR Fuel Price Forecasting, the forecasted cost of propane in 2025 is $2.06 per gallon and $2.57 per gallon, lower than current prices.[13] The forecasted cost of propane in 2035 is $2.37 per gallon and $2.67 per gallon in each of these reports. This price forecast will be inaccurate and does not account for fossil fuel price increases as the state works towards its climate goals and phases out fossil fuel combustion.

8) **Are there any other factors or data the CEC should consider regarding the use, performance, or market dynamics of propane commercial fryers?**

Earthjustice has no additional comments at this time.

Topic: Scope of the Proposed Standards

9) **Should countertop commercial fryers be included in the scope of the proposed efficiency standards?**
   a. **What is the current market share of this fryer type in California?**
   b. **Which industries or user groups primarily purchase and operate this fryer type?**
   c. **If these types of fryers are to be excluded, what definitions do you recommend the CEC use for this purpose?**

Yes. Earthjustice recommends that countertop commercial fryers with a vat width exceeding 12 inches be included in the scope of the proposed efficiency standards as is standard

[11] National Council on Energy, California Propane Prices (May 2025), https://www.consultenergy.org/propane/ca/.
[12] U.S. Energy Information Administration, Weekly U.S. Propane Residential Price (May 23, 2025), https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=W_EPLLPA_PRS_NUS_DPG&f=W.
[13] CEC, 2023 IEPR Fuel Price Forecast (2023), https://www.energy.ca.gov/media/9575; CEC, 2022 IEPR Fuel Price Forecast (2022), https://www.energy.ca.gov/media/8110.

in other state efficiency regulations. Countertop fryers are one of the three types of fryers that are explicitly listed in the scope of the ENERGY STAR specifications for commercial fryers and are currently included in state regulations in Vermont, Colorado, Massachusetts, Nevada, Oregon, Rhode Island, Washington and District of Columbia.[14] The exclusion of countertop fryers in the Title 20 efficiency standards would decrease the effectiveness of the regulation and reduce total efficiency gains, because a significant portion of the commercial fryer market would be left out. For countertop fryers with a vat width smaller than 12 inches and do not meet ENERGY STAR capacity eligibility, Earthjustice recommends establishing test-and-list requirements.

Countertop fryers are smaller compared to free-standing fryers and, as the name suggests, are placed directly on top of the countertop with no further installation required. Most countertop fryers on the market are electric and can plug into a standard 120V outlet. According to the North American Association of Food Equipment Manufacturers, specialty fryers including countertop fryers comprise of less than 3 percent of sales by cost in 2022.[15] Restaurant operators might choose a countertop fryer if they need a portable appliance (such as use in a food truck or outdoor kitchen) or if they are frying a relatively small quantity of food product.

10) **Should drop-in style commercial fryers be included in the scope of the proposed efficiency standards?**
    a. **What is the current market share of this fryer type in California?**
    b. **Which industries or user groups primarily purchase and operate this fryer type?**
    c. **If these types of fryers are to be excluded, what definitions do you recommend the CEC use for this purpose?**

Yes. Earthjustice recommends that drop-in style commercial fryers with a vat width exceeding 12 inches be included in the scope of the proposed efficiency standards. Just like the countertop fryers, drop-in fryers are explicitly listed as one of the three types of commercial fryers that are eligible for ENERGY STAR certification. Because the following states adopted ENERGY STAR V2.0 or V3.0 requirements, drop-in style commercial fryers are included in efficiency standards in Washington, Oregon, Nevada, Colorado, Vermont, Massachusetts, Rhode Island and District of Columbia. For drop-in fryers that have vat widths smaller than 12 inches wide and do not meet ENERGY STAR capacity eligibility, we recommend establishing test-and-list requirements.

To ensure that the efficiency standards are effective, the regulation should include as much of the commercial fryer market share as possible. Leaving out a type of fryer that makes up a significant portion of the commercial fryer market would undermine the goal of the rulemaking by decreasing potential energy efficiency gains. It is Earthjustice's understanding that there is no meaningful difference in energy consumption, function, and performance

[14] ASAP, Commercial Fryers, https://appliance-standards.org/product/commercial-fryers (last visited June 5, 2025).
[15] California Investor Owned Utilities, Commercial Fryers, CASE Initiative for PY 2024: Title 20 Standards Development, Docket 23-AAER-01, at 27 ("Title 20 Commercial Fryers Report") (July 16, 2024), https://efiling.energy.ca.gov/GetDocument.aspx?tn=257835&DocumentContentId=93738.

between drop-in style commercial fryers and other types of fryers like floor type fryers. Excluding drop-in style fryers in the Title 20 appliance efficiency standards because of its installation style would be unnecessary.

11) Are there any other commercial fryer types or characteristics that should be considered for inclusion or exclusion in the proposed efficiency standards? Please provide rationale and supporting data.

Earthjustice recommends that the CEC consider commercial fryers that exceed a 24-inch vat width, including flat bottom fryers or donut fryers. The CEC should consider these types of fryers because of their popularity and size in order to maximize efficiency gains when setting the Title 20 energy efficiency standards. Large restaurant equipment suppliers like Webstaurant and Katom offer dozens of models of donut and flat bottom fryers with electric, gas, and propane fuel options.[16] Earthjustice proposes that the CEC establish test-and-list requirements for flat bottom fryers and donut fryers to better understand the market share, equipment lifetimes, and energy efficiency performances. With this information, the CEC can decide if it wants to move forward with setting a standard.

Topic: Standard Levels for Commercial Fryers

12) Should the CEC propose efficiency standards for gas commercial fryers aligning with the ENERGY STAR specification, Earthjustice's proposal (see footnote 8), or pursue something else? What would be the implications of adopting standards more stringent than ENERGY STAR Version 3.0? Please elaborate.

Earthjustice reaffirms its previous proposal to go beyond ENERGY STAR specifications and adopt a 56 percent efficiency standard and idle energy rate limits of 8,000 Btu/hr for standard vat gas fryers and 10,000 Btu/hr for large vat gas fryers.[17] As set forth in Earthjustice's proposal, ENERGY STAR Version 3.0 requirements were adopted nearly a decade ago in 2016 and were based off older efficiency requirements that ENERGY STAR first introduced for standard gas vat fryers in 2003 and for large gas vat fryers in 2011.[18] With the advancements made in fryer technology and design, California should not be adopting any gas fryer standards that were set over two decades ago. Technology and design improvements like better insulation, burner design, flue routing, advanced controls and automatic timers can improve gas fryer cooking efficiencies.

Electric fryers are better for public health, the climate, worker safety, and increasing appliance efficiencies, so the CEC should be moving the market toward electrification. Compared to gas fryers, electric fryers are more efficient - ENERGY STAR compliant electric

[16] Katom Restaurant Supply, Commercial Donut Fryer, https://www.katom.com/cat/a/donut-fryers.html (last visited June 5, 2025); Webstaurant Store, Donut Fryers and Funnel Cake Fryers, https://www.webstaurantstore.com/14411/funnel-cake-donut-and-specialty-fryers.html (last visited June 5, 2025).
[17] Earthjustice, Docket 23-AAER-01, Comments on Commercial Fryer Efficiency Standards at 1 (November 12, 2024), https://efiling.energy.ca.gov/GetDocument.aspx?tn=259963&DocumentContentId=96169.
[18] California Investor Owned Utilities, Commercial Fryers, CASE Initiative for PY 2024: Title 20 Standards Development, Docket 23-AAER-01, at 7 ("Title 20 Commercial Fryers Report") (July 16, 2024), https://efiling.energy.ca.gov/GetDocument.aspx?tn=257835&DocumentContentId=93738.

fryers have an average cooking efficiency of 87 percent, while compliant gas models have an average efficiency of 56 percent.[19] For worker safety, electric fryers do not contribute to indoor air pollution, ambient heat in the kitchen, or risk gas leaks and explosions.[20] Electric fryers offer additional co-benefits like longer equipment lifetimes, lower maintenance and installation costs, faster recovery times, and smaller kitchen footprint.[21] For both the benefit of the consumer and state climate and public health goals, the CEC should adopt efficiency standards for gas fryers that reflect the current market and are more stringent than ENERGY STAR Version 3.0 specifications.

13) Should the CEC align efficiency standards for electric commercial fryers with ENERGY STAR Version 2.0, ENERGY STAR Version 3.0, only establish test-and-list requirements, or pursue something else? Please elaborate.

As set forth in our previous proposal, Earthjustice recommends against the adoption of efficiency standards for electric commercial fryers at this time. Instead, the CEC should establish test-and-list requirements for electric models. Adopting efficiency standards for commercial electric fryers will worsen the upfront cost disparity between electric and gas models by decreasing electric model availability. Electric fryers in general are far more efficient than gas fryer models and so the attention of the CEC in this rulemaking should be given to commercial gas fryers where the CEC can achieve greater efficiency gains. The average cooking efficiency for electric fryers that do not meet ENERGY STAR certifications is 66 percent, still 10 percent greater than our proposed standard for commercial gas fryers.[22] To encourage electrification, the CEC should avoid raising model costs of electric fryers by limiting market availability in California.[23]

14) What is the most appropriate value for the CEC to assume for the incremental equipment cost for standard vat electric commercial fryers to comply with ENERGY STAR Version 3.0? Please provide supporting data.

The CEC should use the incremental cost of $1,500 for standard vat electric commercial fryers and $500 for large vat electric commercial fryers compliant with ENERGY STAR V3.0, calculated from the ENERGY STAR Commercial Food Service Equipment Calculator. ENERGY STAR cites industry-wide data from AutoQuotes, a data and sales platform for the

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[19] *Id.* at 27.
[20] Nate Seltenrich, Take Care in the Kitchen: Avoiding Cooking-Related Pollutants, 122 Environ Health Perspect. 6 (2014), https://pmc.ncbi.nlm.nih.gov/articles/PMC4050506/; Nicole Greenfield, Indoor Workers Need Protection from Extreme Heat Too, Natural Resources Defense Council (August 10, 2023), https://www.nrdc.org/stories/indoor-workers-need-protection-extreme-heat-too.
[21] Ray Hunter, Gas Or Electric Deep Fryers: A 9-Point Efficiency Comparison, Chef's Deal Restaurant Equipment (April 17, 2023), https://www.chefsdeal.com/blog/gas-or-electric-deep-fryers-comparison.
[22] ENERGY STAR, "Energy Efficient Products - Commercial Fryers," https://www.energystar.gov/products/commercial_fryers (last visited May 23, 2025).
[23] California Investor Owned Utilities, Commercial Fryers, CASE Initiative for PY 2024: Title 20 Standards Development, Docket 23-AAER-01, at 9 ("Title 20 Commercial Fryers Report") (July 16, 2024), https://efiling.energy.ca.gov/GetDocument.aspx?tn=257835&DocumentContentId=93738.

food service equipment industry, for the assumptions on the incremental cost between baseline and ENERGY STAR compliant fryer models.[24]

The cost assumption in the CASE Team report was made based on a limited number of models with a wide variance in cost between models:

> "The CASE Team averaged the price of six of the least costly ENERGY STAR V3.0-qualified models and the four lowest-priced ENERGY STAR V2.0-qualified models that do not meet V3.0 specifications. All compliant electric fryers were between $7,000 and $11,000, except for one fryer made by Imperial, which cost only $2,200 and met the ENERGY STAR V2.0 criteria."[25]

We are skeptical that the actual incremental cost would be as high as the CASE team suggested, especially in the long term. Currently, 85 percent of commercial fryers are gas-fueled and as a result there is a much lower availability of affordable electric options.[26] With market signaling and increased demand for commercial electric fryers, this price is likely to drop with economies of scale and technology advancements.

Thank you for your consideration. Earthjustice looks forward to continued engagement with the CEC throughout its rulemaking process.

Sincerely,

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[24] DOE, ENERGY STAR Commercial Food Service Equipment Calculator (Last visited May 23, 2025) https://www.energystar.gov/sites/default/files/2024-03/CFS%20Equipment%20Calculator.xlsx.
[25] California Investor Owned Utilities, Commercial Fryers, CASE Initiative for PY 2024: Title 20 Standards Development, Docket 23-AAER-01, at 35 ("Title 20 Commercial Fryers Report") (July 16, 2024), https://efiling.energy.ca.gov/GetDocument.aspx?tn=257835&DocumentContentId=93738.
[26] *Id.* at 9.