



FACT SHEET

Induction Cooking



With more than a 70% market share, gas ranges are the most prevalent cooking method in California single-family and multifamily homes.¹ Gas stoves have been promoted for years, despite their inefficiency and the increased awareness of gas cooking's negative impact on a home's indoor air quality. Induction cooking offers an alternative to gas cooking, however, delivering ~85% of the energy consumed to heat the food compared to ~32% for gas, according to the ENERGY STAR[®] program.²

CalMTA is investigating a potential market transformation initiative (MTI) that seeks to bring to market these efficient and affordable alternatives to Californians' kitchens. We envision that all new homes in California will be built with electric induction cooktops and most sales of all cooktops sold in the state will utilize induction technology.

The opportunity

While cooking technology represents a key opportunity in supporting home electrification, consumers need affordable and efficient electric options. This proposed induction cooking MTI primarily targets existing and new construction multifamily and single-family homes with a focus on induction products that are well-suited to serving environmental and social justice (ESJ) stakeholders.

As the kitchen is often the heart of a home and where initial upgrades or remodels begin, induction cooking can serve as a readily visible lynchpin technology to increase consumer

¹Highlights for appliances in U.S. homes by state, 2020. Energy Information Agency. Released March 2023.

<https://www.eia.gov/consumption/residential/data/2020/state/pdf/State%20Appliances.pdf>

²Energy Star Emerging Technology Award: 2020-2021 Residential Cooking Tops. Energy Star. (Undated)

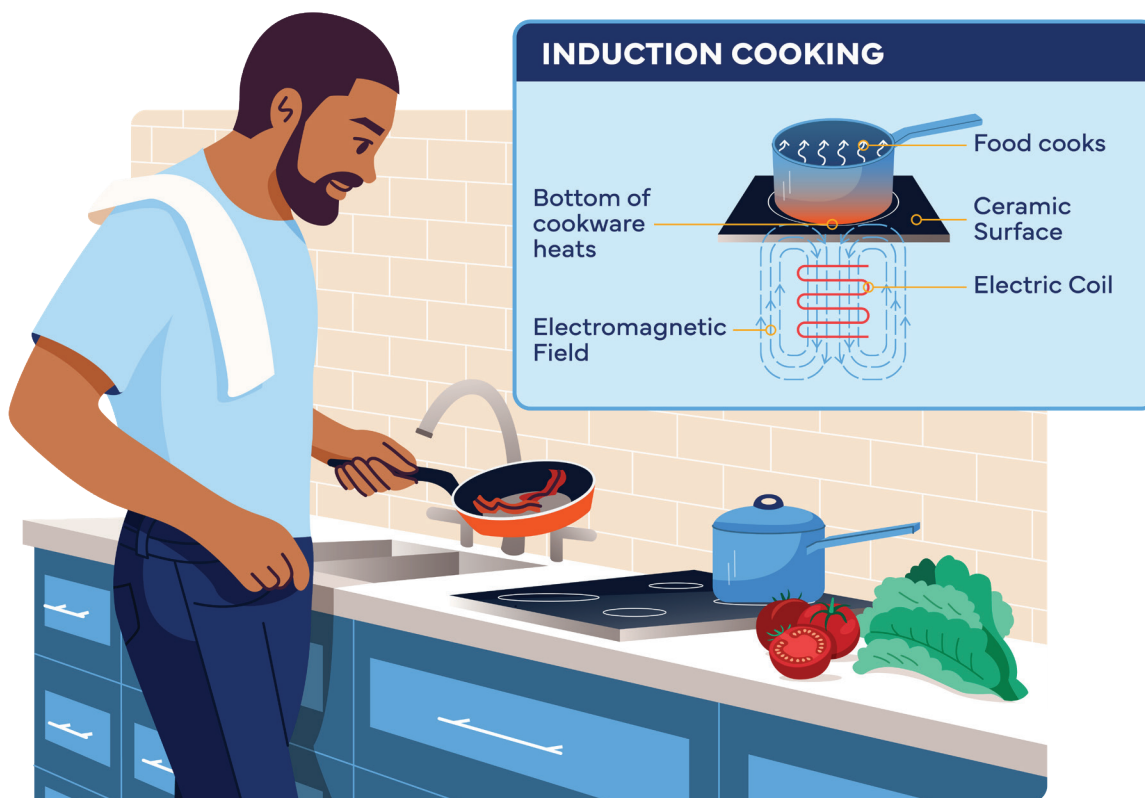
https://www.energystar.gov/partner_resources/products_partner_resources/brand-owner/eta-consumers/res-induction-cooking-tops#:~:text=The%20per%20unit%20efficiency%20of,times%20more%20efficient%20than%20gas

comfort with whole-home electrification. If consumers do not embrace electric cooking, then we run the risk of maintaining gas infrastructure to homes for one last remaining appliance.

Since methane leakage from gas infrastructure is a significant contributor to California's overall greenhouse gas emissions, market adoption of induction cooking can have an impact that far exceeds the site-level reduction in carbon dioxide emissions from cooking.³

The technology

Induction cooktops reduce energy consumption by using electromagnetic induction to heat cookware directly. Unlike traditional electric, gas, or propane cooking technologies, induction cooktops use electric current passed through copper heating coils underneath a flat glass or ceramic surface to heat the cooking vessel. In addition to its more efficient heat transfer, induction provides precise temperature control. The direct heat transfer of electromagnetic induction results in a cool-to-the-touch cooking surface while eliminating the temperature fluctuations of electric or gas cooktops.



Induction also contributes to better indoor air quality. Unhealthy air pollutants such as nitrogen oxides can be released into the home from gas ranges, contributing to respiratory diseases.⁴ In contrast to many other emerging technologies, induction cooktops are lifestyle products that

³ McVay, Renee. Methane emissions from U.S. gas pipeline leaks. Environmental Defense Fund. August 2023. <https://www.edf.org/sites/default/files/documents/Pipeline%20Methane%20Leaks%20Report.pdf>

⁴ Lebel, Eric et. Al. Methane and NOx emissions from natural gas stoves, cooktops, and ovens in residential homes. Environmental Science and Technology. 2022. 56(4):2529-2539. <https://pubs.acs.org/action/showCitFormats?doi=10.1021/acs.est.1c04707&ref=pdf>

interplay with sociocultural and socio-economic dynamics. Their everyday use, high visibility, and cultural importance to cooking in the home creates unique barriers and opportunities for market engagement.

MT strategy

Since gas cooking has been marketed as a superior cooking method, consumer awareness of the benefits of induction cooking is low. Some communities face cultural barriers in moving away from gas to electric cooking due to the perception that an open flame is required to properly prepare traditional dishes. Other barriers CalMTA is working to overcome are listed below as well as strategic market interventions and leverage opportunities.

Identified market barriers

- Higher cost for induction models which often include upgraded features
- Consumer attachment to gas burners and cultural barriers associated with cooking over an open flame
- Necessary technical improvements on some models
- Electric panel capacity limitations that would require an upgrade for added electric appliance needs

Market interventions and leverage opportunities

- Engage manufacturers to expand on product size and develop lower-priced models.
- Coordinate and build on the product research that the CalNEXT program has already completed.
- Leverage existing financial assistance programs, incentives, and rebates to offset the cost of ownership and possible electrical upgrades; encourage inclusion of induction products in direct installation and electrification programs targeting limited-income households.
- Engage retailers, online retail platforms, and their manufacturer suppliers on co-marketing partnerships to build stocking and sales practices targeting ESJ communities and make use of Inflation Reduction Act incentives and tax credits.
- Build awareness of induction cooking's benefits by deploying consumer education campaigns, which will include demonstrations, and forging partnerships with current programs, community-based organizations (CBOs), and local governments.
- Coordinate with the California Codes and Standards Advocacy team to learn from and build upon the valuable work this team has already completed, and support the new ENERGY STAR Residential Cooking Products specifications to serve as a key energy efficiency product differentiator.



Applying an equity lens

This potential MTI would work to ensure that induction stoves are accessible and affordable in ESJ communities. Induction cooking can improve the indoor air quality in these homes. Yet this will require partnering with community-based organizations and carefully planned strategy pilot studies to understand the manufacturer, supplier, construction, and consumer voices in ESJ communities.



About CalMTA

CalMTA works to deliver cost-effective energy efficiency and decarbonization benefits to Californians through a unique approach called market transformation. CalMTA-developed market transformation initiatives also aim to advance state goals on demand flexibility, workforce development, and equity.

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CalMTA is a program of the [California Public Utilities Commission](#) (CPUC) and is administered by [Resource Innovations](#)